Exelon Generation®

Dresden Nuclear Power Station
6500 North Dresden Road
Morris, IL 60450

10 CFR 50.36a (a)(2)

August 29, 2017

SVPLTR: #17-0033

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 Corrected 2016 Radioactive Effluent Release Report

The Radioactive Effluent Release Report for January through December 2016 for Dresden Nuclear Power Station (DNPS) was 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" on April 26, 2017. Due to an overestimation of a ground level release, a corrected copy is being submitted.

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

Respectfully,

Peter J. Karaba
Site Vice President
Dresden Nuclear Power Station

Attachments: DNPS 2016 Annual Radioactive Effluent Release Report

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector, DNPS

IE48
NMSS01

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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 to any organ.

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. Effluent Concentration Limits

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 μCi/ml total activity for all dissolved or entrained noble gases.

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, the measured flow at the release points is used to calculate the curies released. For the Chemical Cleaning Building effluent, 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, Fe-55, and Ni-63. Results from the quarter are conservatively applied for each month of the quarter. Batch release volume is based on LPCI heat exchanger volume.

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 in points 6 and 7)

a. Liquid - Radwaste Liquid Effluents - None

Liquid - CCSW/LPCI

(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

b. Gaseous - None

6. Abnormal Releases (reported in Summation of all Releases tables as well as in Radiological Impact on Man section)

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

b. Gaseous
(1) Number of releases: 1
(2) Total activity released: 1.60E-02 Ci

A ventilation issue at the Off Gas Filter Building (OGFB) was identified on 6/1/16 that resulted in a determination that an unplanned release to the environment had occurred. The estimated activity released from this event is included in the Summation of all Releases and the nuclide tables in this report. The estimated dose from this event is included in the totals of the Radiological Impact on Man section of this report and was well below regulatory limts.

7. Unmonitored Releases (reported in Summation of all Releases tables as well as in Radiological Impact on Man section)

a. Liquid
(1) Number of releases: 2 (Storm Sewer System, Sewage Treatment Plant Effluent)
(2) Total activity released: 3.76E-01 Ci

Water in on-site storm sewers is routinely sampled and analyzed for tritium content. The highest storm drain concentrations of tritium measured during each month of 2016 were used to calculate the released activity for each month. The total activity released to the environment is based on an estimated typical discharge flow of 10 gallons per minute. Low level tritium was detected throughout the year 2016. The total estimated tritium activity released via the storm sewers in 2016 was 3.62E-01 Ci.

Water in the Sewage Treatment Plant (STP) effluent is routinely sampled and analyzed for tritium, gross alpha, Sr-89, Sr-90, Fe-55, and Ni-63. Tritium was detected in the STP effluent in January and February of 2016. All other nuclide

values were less than the Lower Limit of Detection (<LLD). The total estimated tritium activity released via the STP in 2016 was 1.39E-02 Ci.

The estimated dose from these liquid releases was well below regulatory limits.

b. Gaseous
   (1) Number of releases: 5 (Unit 1Main Turbine Floor and Unit 1 Fuel Building, Chemistry Laboratory Ventilation Effluent, Units 2/3 Heating Steam System, East Turbine Building Ventilation, and Unit 3 Isolation Condenser Test)
   (2) Total activity released: 2.91E-04 Ci

The Unit 1 Main Turbine Floor is used as an area to work on contaminated equipment. The Unit 1 Fuel Building is used as a storage area and potentially as a work area. The ventilation systems to these areas are no longer operational and the areas are at ambient pressure with the outside environment. The potential exists for airborne activity to be released to the environment through various points. Based on the work normally performed in these areas, an estimated 7.20E-05 Ci of Cs-137 was released via this path during 2016.

The Chemistry Laboratory exhausts directly into the environment via its ventilation system. This release path is not monitored. Based on an evaluation of activities performed in the area, the estimated activity released to the environment from the laboratory in 2016 is 4.53E-05 Ci.

The Unit 2/3 Heating Steam System has been contaminated in the past. The system continues to contain low-level contamination. During normal operation, the condensate is converted to steam, a portion of which gets vented to the atmosphere. Tritium was the only nuclide detected in 2016. An estimated 9.35E-06 Ci of activity was released to the environment during 2016.

The East Turbine Building Ventilation System exhausts directly into the environment. This release path is not monitored. Low-level removable contamination has been detected in the system in the past. An estimated 3.36E-06 Ci of Co-60 was released to the environment during 2016.

The Unit 3 Isolation Condenser was actuated during planned testing on 10/20/16. Low level tritium was detected in samples at the time of the test and an estimated 1.61E-04 Ci was released during the test.

The estimated dose from these gaseous releases was well below regulatory limits.

8. Summary of Offsite Dose Calculation Manual (ODCM) Changes by Dresden Nuclear Power Station (DNPS) in 2016:

None: Revision 12 of the ODCM, issued in 2012, was in effect throughout 2016.

9. Errata:

Corrected pages are attached for the Annual Radioactive Effluent Release Report (ARERR) for calendar year 2014 and 2015. For the year 2014, page 34 of 132 was corrected to indicate that there were changes to the Process Cotnrol Program (PCP) in 2014. For the year 2015, page 78 of 177 was corrected to indicate that there were changes to the PCP in 2015. These errata pages and the entire PCP procedure, RW-AA-100, are attached as Attachment 1. The changes to the PCP in 2014 and 2015 included provisions for concentration averaging allowed by the NRC Branch Technical Position on Concentration Averaging and Encapsulation. Although the revised PCP allows these specific activities, Dresden Station has not made physical equipment changes or process changes to perform those activites.

DRESDEN NUCLEAR POWER STATION
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January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

UNITS 1,2,3 GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission & activation gases						
1. Total release	Ci	1.37E+01	1.42E+01	1.97E+01	1.43E+01	1.31E+01
2. Average release rate for period	µCi/sec	1.75E+00	1.80E+00	2.47E+00	1.79E+00	
3. Percent of ODCM annual dose limit	% Whole Body	3.52E-04	3.42E-04	3.39E-04	1.97E-04	
	% Skin	9.96E-05	9.71E-05	9.64E-05	5.66E-05	
B. Iodine-131						
1. Total release	Ci	4.20E-04	6.71E-04	5.07E-04	2.59E-04	2.60E+01
2. Average release rate for period	µCi/sec	5.34E-05	8.53E-05	6.38E-05	3.26E-05	
3. Percent of ODCM annual dose limit (*)	%	7.11E-03	1.10E-02	8.43E-03	4.69E-03	
C. Particulates						
1. Particulates with half-lives > 8 days	Ci	7.41E-04	1.21E-03	1.31E-03	1.23E-03	2.94E+01
2. Average release rate for period	µCi/sec	9.42E-05	1.55E-04	1.65E-04	1.55E-04	
3. Percent of ODCM annual dose limit (*)	%	7.11E-03	1.10E-02	8.43E-03	4.69E-03	
D. Tritium						
1. Total release	Ci	1.76E+00	1.72E+00	1.56E+00	1.46E+00	7.56E+00
2. Average release rate for period	µCi/sec	2.23E-01	2.19E-01	1.97E-01	1.83E-01	
3. Percent of ODCM annual dose limit (*)	%	7.11E-03	1.10E-02	8.43E-03	4.69E-03	
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 annual dose limit	%	N/A	N/A	N/A	N/A	
F. Carbon-14						
1. Total release	Ci	7.46E+00	7.46E+00	7.54E+00	6.88E+00	
2. Average release rate for period	µCi/sec	9.49E-01	9.49E-01	9.49E-01	8.66E-01	

(*): "Percent of ODCM annual dose limit" indicates combined total of Iodine-131, Particulates, and Tritium

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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

UNIT 1 GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission & activation gases						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	1.31E+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 quarterly dose limit	%γ	N/A	N/A	N/A	N/A	
	%β	N/A	N/A	N/A	N/A	
B. Iodine-131						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.60E+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 quarterly dose limit (*)	%	N/A	N/A	N/A	N/A	
C. Particulates						
1. Particulates with half-lives > 8 days	Ci	1.88E-05	1.86E-05	1.90E-05	1.84E-05	2.94E+01
2. Average release rate for period	µCi/sec	2.40E-06	2.37E-06	2.39E-06	2.32E-06	
3. Percent of ODCM quarterly dose limit (*)	%	6.23E-03	6.21E-03	6.24E-03	6.20E-03	
D. Tritium						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	7.56E+00
2. Average release rate for period	µCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of ODCM quarterly dose limit (*)	%	N/A	N/A	N/A	N/A	
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 quarterly dose limit	%	N/A	N/A	N/A	N/A	
F. Carbon-14						
1. Total release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
2. Average release rate for period	µCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

(*): "Percent of ODCM quarterly dose limit" indicates combined total of Iodine-131, Particulates, and Tritium

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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

UNIT 2 GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission & activation gases						
1. Total release	Ci	2.85E+00	3.47E+00	5.04E+00	5.51E+00	1.31E+01
2. Average release rate for period	µCi/sec	3.62E-01	4.41E-01	6.34E-01	6.93E-01	
3. Percent of ODCM quarterly dose limit	%γ	2.88E-03	3.28E-03	3.36E-03	2.40E-03	
	%β	6.01E-05	7.44E-05	7.85E-05	1.26E-04	
B. Iodine-131						
1. Total release	Ci	1.00E-04	7.96E-05	6.79E-05	7.88E-05	2.60E+01
2. Average release rate for period	µCi/sec	1.28E-05	1.01E-05	8.54E-06	9.92E-06	
3. Percent of ODCM quarterly dose limit (*)	%	1.49E-01	1.48E-01	1.50E-01	1.54E-01	
C. Particulates						
1. Particulates with half-lives > 8 days	Ci	1.79E-04	1.44E-04	1.68E-04	4.14E-04	2.94E+01
2. Average release rate for period	µCi/sec	2.28E-05	1.83E-05	2.11E-05	5.21E-05	
3. Percent of ODCM quarterly dose limit (*)	%	1.49E-01	1.48E-01	1.50E-01	1.54E-01	
D. Tritium						
1. Total release	Ci	4.36E-01	2.04E-01	2.11E-01	4.93E-01	7.56E+00
2. Average release rate for period	µCi/sec	5.54E-02	2.60E-02	2.65E-02	6.20E-02	
3. Percent of ODCM quarterly dose limit (*)	%	1.49E-01	1.48E-01	1.50E-01	1.54E-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 quarterly dose limit	%	N/A	N/A	N/A	N/A	
F. Carbon-14						
1. Total release	Ci	3.73E+00	3.73E+00	3.77E+00	3.77E+00	
2. Average release rate for period	µCi/sec	4.74E-01	4.74E-01	4.74E-01	4.74E-01	

(*): "Percent of ODCM quarterly dose limit" indicates combined total of Iodine-131, Particulates, and Tritium

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

UNIT 3 GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission & activation gases						
1. Total release	Ci	1.09E+01	1.07E+01	1.46E+01	8.75E+00	1.31E+01
2. Average release rate for period	µCi/sec	1.38E+00	1.36E+00	1.84E+00	1.10E+00	
3. Percent of ODCM quarterly dose limit	%γ	1.03E-02	9.51E-03	9.51E-03	5.08E-03	
	%β	2.03E-04	2.11E-04	2.15E-04	2.08E-04	
B. Iodine-131						
1. Total release	Ci	3.20E-04	5.91E-04	4.39E-04	1.80E-04	2.60E+01
2. Average release rate for period	µCi/sec	4.07E-05	7.52E-05	5.52E-05	2.27E-05	
3. Percent of ODCM quarterly dose limit (*)	%	1.52E-01	1.55E-01	1.56E-01	1.65E-01	
C. Particulates						
1. Particulates with half-lives > 8 days	Ci	5.43E-04	1.05E-03	1.13E-03	7.98E-04	2.94E+01
2. Average release rate for period	µCi/sec	6.90E-05	1.34E-04	1.42E-04	1.00E-04	
3. Percent of ODCM quarterly dose limit (*)	%	1.52E-01	1.55E-01	1.56E-01	1.65E-01	
D. Tritium						
1. Total release	Ci	1.32E+00	1.52E+00	1.35E+00	9.65E-01	7.56E+00
2. Average release rate for period	µCi/sec	1.68E-01	1.93E-01	1.70E-01	1.21E-01	
3. Percent of ODCM quarterly dose limit (*)	%	1.52E-01	1.55E-01	1.56E-01	1.65E-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 quarterly dose limit	%	N/A	N/A	N/A	N/A	
F. Carbon-14						
1. Total release	Ci	3.73E+00	3.73E+00	3.77E+00	3.11E+00	
2. Average release rate for period	µCi/sec	4.74E-01	4.74E-01	4.74E-01	3.92E-01	

(*): "Percent of ODCM quarterly dose limit" indicates combined total of Iodine-131, Particulates, and Tritium

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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

TABLE OF LOWER LIMITS OF DETECTABILITY
FOR GASEOUS EFFLUENTS

1.	FISSION / ACTIVATION GASES	µCi/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	µCi/cc
	I-131	1.00E-12
	I-133	1.00E-10
3.	PARTICULATES	µCi/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	µCi/cc
	H-3	1.00E-06
	Gross Alpha	1.00E-11

The above values are the ODCM-required LLDs.

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

GASEOUS EFFLUENTS

UNITS 1,2,3 GROUND (*) GROUND RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci	<LLD	<LLD	<LLD	2.59E-07	2.59E-07
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	3.61E-07	3.61E-07
Kr-87	Ci	<LLD	<LLD	<LLD	2.11E-06	2.11E-06
Kr-88	Ci	<LLD	<LLD	<LLD	1.31E-06	1.31E-06
Xe-131m	Ci	<LLD	<LLD	<LLD	1.28E-08	1.28E-08
Xe-133	Ci	<LLD	<LLD	<LLD	1.32E-07	1.32E-07
Xe-133m	Ci	<LLD	<LLD	<LLD	1.06E-11	1.06E-11
Xe-135	Ci	<LLD	<LLD	<LLD	2.06E-06	2.06E-06
Xe-135m	Ci	<LLD	<LLD	<LLD	4.37E-06	4.37E-06
Xe-138	Ci	<LLD	<LLD	<LLD	1.62E-05	1.62E-05
Total for period	Ci	<LLD	<LLD	<LLD	2.69E-05	2.69E-05
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	5.18E-09	5.18E-09
Br-84	Ci	<LLD	<LLD	<LLD	4.12E-11	4.12E-11
I-131	Ci	<LLD	<LLD	<LLD	1.46E-10	1.46E-10
I-132	Ci	<LLD	<LLD	<LLD	1.15E-10	1.15E-10
I-133	Ci	<LLD	<LLD	<LLD	4.13E-10	4.13E-10
I-134	Ci	<LLD	<LLD	<LLD	1.93E-07	1.93E-07
I-135	Ci	<LLD	<LLD	<LLD	2.87E-10	2.87E-10
Total for period	Ci	<LLD	<LLD	<LLD	1.99E-07	1.99E-07
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	6.86E-08	6.86E-08
Mn-54	Ci	<LLD	<LLD	<LLD	1.18E-07	1.18E-07
Co-57	Ci	<LLD	<LLD	<LLD	1.61E-10	1.61E-10
Co-58	Ci	<LLD	<LLD	<LLD	3.92E-08	3.92E-08
Fe-59	Ci	<LLD	<LLD	<LLD	2.91E-08	2.91E-08
Co-60	Ci	<LLD	<LLD	<LLD	3.65E-06	3.65E-06
Zn-65	Ci	<LLD	<LLD	<LLD	5.00E-08	5.00E-08
Nb-95	Ci	<LLD	<LLD	<LLD	3.46E-09	3.46E-09
Zr-95	Ci	<LLD	<LLD	<LLD	2.53E-09	2.53E-09
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	1.42E-08	1.42E-08
Sn-113	Ci	<LLD	<LLD	<LLD	7.92E-10	7.92E-10
Sn-117m	Ci	<LLD	<LLD	<LLD	5.52E-09	5.52E-09
Te-123m	Ci	<LLD	<LLD	<LLD	5.69E-09	5.69E-09
Sb-124	Ci	<LLD	<LLD	<LLD	7.42E-09	7.42E-09
Sb-125	Ci	<LLD	<LLD	<LLD	1.05E-09	1.05E-09

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	1.80E-05	1.80E-05	1.80E-05	1.80E-05	7.20E-05
Ba-140	Ci	<LLD	<LLD	<LLD	1.77E-09	1.77E-09
Ce-141	Ci	<LLD	<LLD	<LLD	6.84E-12	6.84E-12
Ce-144	Ci	<LLD	<LLD	<LLD	6.96E-10	6.96E-10
Hf-181	Ci	<LLD	<LLD	<LLD	2.14E-10	2.14E-10
Total for period	Ci	1.80E-05	1.80E-05	1.80E-05	2.20E-05	7.60E-05
4. Tritium						
Total for period	Ci	<LLD	<LLD	<LLD	9.35E-06	9.35E-06
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

(*): The values in this table represent Unit 1Main Turbine Floor and Unit 1 Fuel Building, Chemistry Laboratory Ventilation Effluent, East Turbine Building Ventilation System, Units 2/3 Heating Steam System unmonitored effluents.

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNITS 1,2,3 GROUND (**) GROUND RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci		1.42E-04		<LLD	1.42E-04
Kr-85	Ci		<LLD		<LLD	<LLD
Kr-85m	Ci		4.89E-04		<LLD	4.89E-04
Kr-87	Ci		9.07E-04		<LLD	9.07E-04
Kr-88	Ci		1.35E-03		<LLD	1.35E-03
Xe-131m	Ci		<LLD		<LLD	<LLD
Xe-133	Ci		2.91E-04		<LLD	2.91E-04
Xe-133m	Ci		<LLD		<LLD	<LLD
Xe-135	Ci		3.46E-03		<LLD	3.46E-03
Xe-135m	Ci		<LLD		<LLD	<LLD
Xe-138	Ci		<LLD		<LLD	<LLD
Total for period	Ci	None (*)	6.64E-03	None (*)	<LLD	6.64E-03
2. Iodines and Halogens						
Br-82	Ci		<LLD		<LLD	<LLD
Br-84	Ci		<LLD		<LLD	<LLD
I-131	Ci		<LLD		<LLD	<LLD
I-132	Ci		<LLD		<LLD	<LLD
I-133	Ci		<LLD		<LLD	<LLD
I-134	Ci		<LLD		<LLD	<LLD
I-135	Ci		<LLD		<LLD	<LLD
Total for period	Ci	None (*)	<LLD	None (*)	<LLD	<LLD
3. Particulates						
Fe-55	Ci		<LLD		<LLD	<LLD
Sr-89	Ci		<LLD		<LLD	<LLD
Sr-90	Ci		<LLD		<LLD	<LLD
Cr-51	Ci		1.01E-10		<LLD	1.01E-10
Mn-54	Ci		1.29E-11		<LLD	1.29E-11
Co-57	Ci		<LLD		<LLD	<LLD
Co-58	Ci		<LLD		<LLD	<LLD
Fe-59	Ci		<LLD		<LLD	<LLD
Co-60	Ci		5.94E-11		<LLD	5.94E-11
Zn-65	Ci		<LLD		<LLD	<LLD
Nb-95	Ci		<LLD		<LLD	<LLD
Zr-95	Ci		<LLD		<LLD	<LLD
Mo-99	Ci		<LLD		<LLD	<LLD
Ag-110m	Ci		<LLD		<LLD	<LLD
Sn-113	Ci		<LLD		<LLD	<LLD
Sn-117m	Ci		<LLD		<LLD	<LLD
Te-123m	Ci		<LLD		<LLD	<LLD
Sb-124	Ci		<LLD		<LLD	<LLD
Sb-125	Ci		<LLD		<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci		<LLD		<LLD	<LLD
Cs-137	Ci		<LLD		<LLD	<LLD
Ba-140	Ci		<LLD		<LLD	<LLD
Ce-141	Ci		<LLD		<LLD	<LLD
Ce-144	Ci		<LLD		<LLD	<LLD
Hf-181	Ci		<LLD		<LLD	<LLD
Total for period	Ci	None (*)	1.74E-10	None (*)	<LLD	1.74E-10
4. Tritium						
Total for period	Ci	None (*)	<LLD	None (*)	1.61E-04	1.61E-04
5. Gross Alpha						
Total for period	Ci	None (*)	<LLD	None (*)	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	None (*)	<LLD	None (*)	<LLD	<LLD

(*): No batch releases via this effluent path during this time period.
(**): The values in this table represent the Unit 3 Isolation Condenser Test unmonitored effluents and the abnormal release effluents from the OGFB ventilation event.

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 1 GROUND (*) GROUND RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
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-131m	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 and Halogens						
Br-82	Ci	N/A	N/A	N/A	N/A	N/A
Br-84	Ci	N/A	N/A	N/A	N/A	N/A
I-131	Ci	N/A	N/A	N/A	N/A	N/A
I-132	Ci	N/A	N/A	N/A	N/A	N/A
I-133	Ci	N/A	N/A	N/A	N/A	N/A
I-134	Ci	N/A	N/A	N/A	N/A	N/A
I-135	Ci	N/A	N/A	N/A	N/A	N/A
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-57	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
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	1.80E-05	1.80E-05	1.80E-05	1.80E-05	7.20E-05
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	1.80E-05	1.80E-05	1.80E-05	1.80E-05	7.20E-05
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

(*): The values in this table represent Unit 1Main Turbine Floor and Unit 1 Fuel Building unmonitored effluent.

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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 1 GROUND (*) GROUND RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Sb-124	Ci					
Sb-125	Ci					
Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 2 GROUND (*) GROUND RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci	<LLD	<LLD	<LLD	1.23E-07	1.23E-07
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	1.53E-07	1.53E-07
Kr-87	Ci	<LLD	<LLD	<LLD	9.14E-07	9.14E-07
Kr-88	Ci	<LLD	<LLD	<LLD	5.90E-07	5.90E-07
Xe-131m	Ci	<LLD	<LLD	<LLD	7.40E-10	7.40E-10
Xe-133	Ci	<LLD	<LLD	<LLD	4.56E-08	4.56E-08
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	7.39E-07	7.39E-07
Xe-135m	Ci	<LLD	<LLD	<LLD	1.45E-06	1.45E-06
Xe-138	Ci	<LLD	<LLD	<LLD	5.64E-06	5.64E-06
Total for period	Ci	<LLD	<LLD	<LLD	9.66E-06	9.66E-06
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	1.33E-10	1.33E-10
Br-84	Ci	<LLD	<LLD	<LLD	4.12E-11	4.12E-11
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-132	Ci	<LLD	<LLD	<LLD	1.26E-12	1.26E-12
I-133	Ci	<LLD	<LLD	<LLD	2.66E-12	2.66E-12
I-134	Ci	<LLD	<LLD	<LLD	3.80E-08	3.08E-08
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	3.82E-08	3.82E-08
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	1.44E-08	1.44E-08
Mn-54	Ci	<LLD	<LLD	<LLD	1.99E-08	1.99E-08
Co-57	Ci	<LLD	<LLD	<LLD	2.31E-11	2.31E-11
Co-58	Ci	<LLD	<LLD	<LLD	9.82E-09	9.82E-09
Fe-59	Ci	<LLD	<LLD	<LLD	6.62E-09	6.62E-09
Co-60	Ci	<LLD	<LLD	<LLD	3.40E-06	3.40E-06
Zn-65	Ci	<LLD	<LLD	<LLD	1.25E-08	1.25E-08
Nb-95	Ci	<LLD	<LLD	<LLD	6.00E-10	6.00E-10
Zr-95	Ci	<LLD	<LLD	<LLD	7.35E-10	7.35E-10
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	4.57E-09	4.57E-09
Sn-113	Ci	<LLD	<LLD	<LLD	7.49E-11	7.49E-11
Sn-117m	Ci	<LLD	<LLD	<LLD	2.49E-09	2.49E-09
Te-123m	Ci	<LLD	<LLD	<LLD	2.57E-09	2.57E-09
Sb-124	Ci	<LLD	<LLD	<LLD	1.38E-09	1.38E-09
Sb-125	Ci	<LLD	<LLD	<LLD	3.47E-12	3.47E-12

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	3.92E-10	3.92E-10
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	1.28E-10	1.28E-10
Hf-181	Ci	<LLD	<LLD	<LLD	2.03E-10	2.03E-10
Total for period	Ci	<LLD	<LLD	<LLD	3.47E-06	3.47E-06
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

(*): The values in this table represent Chemistry Laboratory Ventilation Effluent and East Turbine Building Ventilation System unmonitored effluents.

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 2 GROUND (**) GROUND RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci		4.49E-05			4.49E-05
Kr-85	Ci		<LLD			<LLD
Kr-85m	Ci		1.60E-04			1.60E-04
Kr-87	Ci		2.13E-04			2.13E-04
Kr-88	Ci		3.94E-04			3.94E-04
Xe-131m	Ci		<LLD			<LLD
Xe-133	Ci		9.76E-05			9.76E-05
Xe-133m	Ci		<LLD			<LLD
Xe-135	Ci		8.88E-04			8.88E-04
Xe-135m	Ci		<LLD			<LLD
Xe-138	Ci		<LLD			<LLD
Total for period	Ci	None (*)	1.80E-03	None (*)	None (*)	1.80E-03
2. Iodines and Halogens						
Br-82	Ci		<LLD			<LLD
Br-84	Ci		<LLD			<LLD
I-131	Ci		<LLD			<LLD
I-132	Ci		<LLD			<LLD
I-133	Ci		<LLD			<LLD
I-134	Ci		<LLD			<LLD
I-135	Ci		<LLD			<LLD
Total for period	Ci	None (*)	<LLD	None (*)	None (*)	<LLD
3. Particulates						
Fe-55	Ci		<LLD			<LLD
Sr-89	Ci		<LLD			<LLD
Sr-90	Ci		<LLD			<LLD
Cr-51	Ci		4.76E-11			4.76E-11
Mn-54	Ci		6.09E-12			6.09E-12
Co-57	Ci		<LLD			<LLD
Co-58	Ci		<LLD			<LLD
Fe-59	Ci		<LLD			<LLD
Co-60	Ci		2.80E-11			2.80E-11
Zn-65	Ci		<LLD			<LLD
Nb-95	Ci		<LLD			<LLD
Zr-95	Ci		<LLD			<LLD
Mo-99	Ci		<LLD			<LLD
Ag-110m	Ci		<LLD			<LLD
Sn-113	Ci		<LLD			<LLD
Sn-117m	Ci		<LLD			<LLD
Te-123m	Ci		<LLD			<LLD
Sb-124	Ci		<LLD			<LLD
Sb-125	Ci		<LLD			<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci		<LLD			<LLD
Cs-137	Ci		<LLD			<LLD
Ba-140	Ci		<LLD			<LLD
Ce-141	Ci		<LLD			<LLD
Ce-144	Ci		<LLD			<LLD
Hf-181	Ci		<LLD			<LLD
Total for period	Ci	None (*)	8.17E-11	None (*)	None (*)	8.17E-11
4. Tritium						
Total for period	Ci	None (*)	<LLD	None (*)	None (*)	<LLD
5. Gross Alpha						
Total for period	Ci	None (*)	<LLD	None (*)	None (*)	<LLD
6. Carbon-14						
Total for period	Ci	None (*)	<LLD	None (*)	None (*)	<LLD

(*): No batch releases via this effluent path during this time period.
(**): The values in this table represent the abnormal release via the OGFB.

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 3 GROUND (*) GROUND RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci	<LLD	<LLD	<LLD	1.36E-07	1.36E-07
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	2.08E-07	2.08E-07
Kr-87	Ci	<LLD	<LLD	<LLD	1.20E-06	1.20E-06
Kr-88	Ci	<LLD	<LLD	<LLD	7.18E-07	7.18E-07
Xe-131m	Ci	<LLD	<LLD	<LLD	1.21E-08	1.21E-08
Xe-133	Ci	<LLD	<LLD	<LLD	8.66E-08	8.66E-08
Xe-133m	Ci	<LLD	<LLD	<LLD	1.06E-11	1.06E-11
Xe-135	Ci	<LLD	<LLD	<LLD	1.32E-06	1.32E-06
Xe-135m	Ci	<LLD	<LLD	<LLD	2.92E-06	2.92E-06
Xe-138	Ci	<LLD	<LLD	<LLD	1.06E-05	1.06E-05
Total for period	Ci	<LLD	<LLD	<LLD	1.72E-05	1.72E-05
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	5.05E-09	5.05E-09
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	1.46E-10	1.46E-10
I-132	Ci	<LLD	<LLD	<LLD	1.14E-10	1.14E-10
I-133	Ci	<LLD	<LLD	<LLD	4.10E-10	4.10E-10
I-134	Ci	<LLD	<LLD	<LLD	1.55E-07	1.55E-07
I-135	Ci	<LLD	<LLD	<LLD	2.87E-10	2.87E-10
Total for period	Ci	<LLD	<LLD	<LLD	1.61E-07	1.61E-07
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	5.42E-08	5.42E-08
Mn-54	Ci	<LLD	<LLD	<LLD	9.76E-08	9.76E-08
Co-57	Ci	<LLD	<LLD	<LLD	1.38E-10	1.38E-10
Co-58	Ci	<LLD	<LLD	<LLD	2.94E-08	2.94E-08
Fe-59	Ci	<LLD	<LLD	<LLD	2.25E-08	2.25E-08
Co-60	Ci	<LLD	<LLD	<LLD	2.51E-07	2.51E-07
Zn-65	Ci	<LLD	<LLD	<LLD	3.75E-08	3.75E-08
Nb-95	Ci	<LLD	<LLD	<LLD	2.86E-09	2.86E-09
Zr-95	Ci	<LLD	<LLD	<LLD	1.79E-09	1.79E-09
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	9.64E-09	9.64E-09
Sn-113	Ci	<LLD	<LLD	<LLD	7.17E-10	7.17E-10
Sn-117m	Ci	<LLD	<LLD	<LLD	3.03E-09	3.03E-09
Te-123m	Ci	<LLD	<LLD	<LLD	3.12E-09	3.12E-09
Sb-124	Ci	<LLD	<LLD	<LLD	6.04E-09	6.04E-09

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Sb-125	Ci	<LLD	<LLD	<LLD	1.05E-09	1.05E-09
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	1.38E-09	1.38E-09
Ce-141	Ci	<LLD	<LLD	<LLD	6.84E-12	6.84E-12
Ce-144	Ci	<LLD	<LLD	<LLD	5.68E-10	5.68E-10
Hf-181	Ci	<LLD	<LLD	<LLD	1.10E-11	1.10E-12
Total for period	Ci	<LLD	<LLD	<LLD	5.23E-07	5.23E-07
4. Tritium						
Total for period	Ci	<LLD	<LLD	<LLD	9.35E-06	9.35E-06
5. Gross Alpha						
Total for period	Ci	None	None	None	None	None
6. Carbon-14						
Total for period	Ci	None	None	None	None	None

(*): The values in this table represent Chemistry Laboratory Ventilation Effluent and Units 2/3 Heating Steam unmonitored effluents.

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 3 GROUND (**) GROUND RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci		9.68E-05		<LLD	9.68E-05
Kr-85	Ci		<LLD		<LLD	<LLD
Kr-85m	Ci		3.28E-04		<LLD	3.28E-04
Kr-87	Ci		6.95E-04		<LLD	6.95E-04
Kr-88	Ci		9.54E-04		<LLD	9.54E-04
Xe-131m	Ci		<LLD		<LLD	<LLD
Xe-133	Ci		1.94E-04		<LLD	1.94E-04
Xe-133m	Ci		<LLD		<LLD	<LLD
Xe-135	Ci		2.57E-03		<LLD	2.57E-03
Xe-135m	Ci		<LLD		<LLD	<LLD
Xe-138	Ci		<LLD		<LLD	<LLD
Total for period	Ci	None (*)	4.84E-03	None (*)	<LLD	4.84E-03
2. Iodines and Halogens						
Br-82	Ci		<LLD		<LLD	<LLD
Br-84	Ci		<LLD		<LLD	<LLD
I-131	Ci		<LLD		<LLD	<LLD
I-132	Ci		<LLD		<LLD	<LLD
I-133	Ci		<LLD		<LLD	<LLD
I-134	Ci		<LLD		<LLD	<LLD
I-135	Ci		<LLD		<LLD	<LLD
Total for period	Ci	None (*)	<LLD	None (*)	<LLD	<LLD
3. Particulates						
Fe-55	Ci		<LLD		<LLD	<LLD
Sr-89	Ci		<LLD		<LLD	<LLD
Sr-90	Ci		<LLD		<LLD	<LLD
Cr-51	Ci		5.36E-11		<LLD	5.36E-11
Mn-54	Ci		6.86E-12		<LLD	6.86E-12
Co-57	Ci		<LLD		<LLD	<LLD
Co-58	Ci		<LLD		<LLD	<LLD
Fe-59	Ci		<LLD		<LLD	<LLD
Co-60	Ci		3.15E-11		<LLD	3.15E-11
Zn-65	Ci		<LLD		<LLD	<LLD
Nb-95	Ci		<LLD		<LLD	<LLD
Zr-95	Ci		<LLD		<LLD	<LLD
Mo-99	Ci		<LLD		<LLD	<LLD
Ag-110m	Ci		<LLD		<LLD	<LLD
Sn-113	Ci		<LLD		<LLD	<LLD
Sn-117m	Ci		<LLD		<LLD	<LLD
Te-123m	Ci		<LLD		<LLD	<LLD
Sb-124	Ci		<LLD		<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Sb-125	Ci		<LLD		<LLD	<LLD
Cs-134	Ci		<LLD		<LLD	<LLD
Cs-137	Ci		<LLD		<LLD	<LLD
Ba-140	Ci		<LLD		<LLD	<LLD
Ce-141	Ci		<LLD		<LLD	<LLD
Ce-144	Ci		<LLD		<LLD	<LLD
Hf-181	Ci		<LLD		<LLD	<LLD
Total for period	Ci	None (*)	9.20E-11	None (*)	<LLD	9.20E-11
4. Tritium						
Total for period	Ci	None (*)	None (*)	None (*)	1.61E-04	1.61E-04
5. Gross Alpha						
Total for period	Ci	None (*)	None (*)	None (*)	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	None (*)	None (*)	None (*)	<LLD	<LLD

(*): No batch releases via this effluent path during this time period.
(**): The values in this table represent the Unit 3 Isolation Condenser Test unmonitored effluents and the abnormal release via the OGFB.

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNITS 1,2,3 MAIN CHIMNEYS ELEVATED RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci	1.28E+00	7.83E-01	7.22E-01	6.72E-01	3.46E+00
Kr-85	Ci	<LLD	<LLD	<LLD	1.21E-03	1.21E-03
Kr-85m	Ci	4.03E-01	3.19E-01	3.12E-01	1.51E-01	1.18E+00
Kr-87	Ci	3.24E-01	3.34E-01	3.13E-01	2.25E-01	1.20E+00
Kr-88	Ci	2.74E-01	2.35E-01	2.42E-01	1.48E-01	8.98E-01
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	9.47E-01	8.15E-01	6.68E+00	6.14E+00	1.46E+01
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	6.16E-01	1.87E+00	1.56E+00	2.02E-01	4.25E+00
Xe-135m	Ci	1.93E+00	1.91E+00	1.92E+00	1.27E+00	7.02E+00
Xe-138	Ci	7.96E+00	7.92E+00	7.92E+00	4.18E+00	2.80E+01
Total for period	Ci	1.37E+01	1.42E+01	1.97E+01	1.30E+01	6.06E+01
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	4.20E-04	6.71E-04	5.07E-04	2.56E-04	1.85E-03
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	2.08E-03	3.86E-03	3.15E-03	1.46E-03	1.05E-02
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	7.77E-04	3.39E-03	1.86E-03	5.95E-04	6.62E-03
Total for period	Ci	3.27E-03	7.92E-03	5.51E-03	2.32E-03	1.90E-02
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	9.36E-05	7.58E-05	5.49E-05	4.90E-05	2.73E-04
Sr-90	Ci	<LLD	<LLD	<LLD	2.71E-05	2.71E-05
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	4.25E-05	8.46E-05	7.95E-05	9.48E-05	3.01E-04
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	3.62E-05	5.31E-05	1.15E-04	6.93E-05	2.73E-04
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	2.31E-04	3.92E-04	3.80E-04	5.47E-04	1.55E-03
Zn-65	Ci	1.32E-04	3.28E-04	4.22E-04	2.16E-04	1.10E-03
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	4.60E-06	2.28E-05	2.90E-06	3.03E-05
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	9.93E-06	7.28E-06	3.05E-05	1.37E-05	6.14E-05

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	1.34E-05	1.34E-05
Ba-140	Ci	1.60E-04	2.39E-04	1.82E-04	1.30E-04	7.11E-04
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	7.04E-04	1.18E-03	1.29E-03	1.16E-03	4.34E-03
4. Tritium						
Total for period	Ci	1.44E+00	1.24E+00	1.09E+00	9.75E-01	4.75E+00
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	7.46E+00	7.46E+00	7.54E+00	6.88E+00	2.93E+01

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNITS 1,2,3 MAIN CHIMNEYS (*) ELEVATED RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					
Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 1 MAIN CHIMNEY (*) ELEVATED RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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					
Co-57	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Sb-124	Ci					
Sb-125	Ci					
Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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 continuous releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 1 MAIN CHIMNEY (*) ELEVATED RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 2 MAIN CHIMNEY ELEVATED RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci	4.31E-02	1.17E-01	5.17E-02	4.01E-02	2.52E-01
Kr-85	Ci	<LLD	<LLD	<LLD	5.79E-04	5.79E-04
Kr-85m	Ci	1.77E-02	2.65E-02	2.35E-02	2.05E-02	8.82E-02
Kr-87	Ci	1.05E-01	1.17E-01	1.11E-01	1.12E-01	4.44E-01
Kr-88	Ci	6.28E-02	6.39E-02	6.79E-02	6.48E-02	2.59E-01
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	2.11E-02	6.05E-02	1.63E+00	2.74E+00	4.45E+00
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	1.53E-01	4.86E-01	4.56E-01	9.23E-02	1.19E+00
Xe-135m	Ci	4.53E-01	4.76E-01	5.07E-01	5.34E-01	1.97E+00
Xe-138	Ci	1.99E+00	2.12E+00	2.20E+00	1.40E+00	7.71E+00
Total for period	Ci	2.85E+00	3.47E+00	5.04E+00	5.00E+00	1.64E+01
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	1.00E-04	7.96E-05	6.79E-05	7.75E-05	3.25E-04
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	4.81E-04	4.57E-04	4.19E-04	4.01E-04	1.76E-03
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	1.33E-04	3.98E-04	2.55E-04	1.58E-04	9.44E-04
Total for period	Ci	7.15E-04	9.35E-04	7.42E-04	6.36E-04	3.03E-03
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	2.46E-05	8.97E-06	7.24E-06	2.74E-05	6.82E-05
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	9.56E-06	1.05E-05	1.03E-05	3.40E-05	6.44E-05
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	9.15E-06	6.40E-06	1.49E-05	1.64E-05	4.68E-05
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	5.71E-05	4.59E-05	4.98E-05	2.07E-04	3.60E-04
Zn-65	Ci	3.02E-05	3.83E-05	5.51E-05	6.61E-05	1.90E-04
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	5.22E-07	2.76E-06	1.56E-06	4.84E-06
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	1.41E-06	8.26E-07	4.03E-06	6.81E-06	1.31E-05
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	7.19E-06	7.19E-06
Ba-140	Ci	3.82E-05	2.87E-05	2.35E-05	2.39E-05	1.14E-04
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	1.70E-04	1.40E-04	1.68E-04	3.90E-04	8.68E-04
4. Tritium						
Total for period	Ci	3.60E-01	1.47E-01	1.49E-01	2.87E-01	9.43E-01
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	3.73E+00	3.73E+00	3.77E+00	3.77E+00	1.50E+01

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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 2 MAIN CHIMNEY (*) ELEVATED RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 3 MAIN CHIMNEY ELEVATED RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci	1.24E+00	6.66E-01	6.70E-01	6.32E-01	3.20E+00
Kr-85	Ci	<LLD	<LLD	<LLD	6.31E-04	6.31E-04
Kr-85m	Ci	3.85E-01	2.92E-01	2.88E-01	1.30E-01	1.10E+00
Kr-87	Ci	2.19E-01	2.17E-01	2.02E-01	1.14E-01	7.51E-01
Kr-88	Ci	2.11E-01	1.71E-01	1.74E-01	8.27E-02	6.39E-01
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	9.26E-01	7.54E-01	5.05E+00	3.40E+00	1.01E+01
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	4.63E-01	1.38E+00	1.11E+00	1.10E-01	3.06E+00
Xe-135m	Ci	1.48E+00	1.43E+00	1.41E+00	7.34E-01	5.05E+00
Xe-138	Ci	5.97E+00	5.80E+00	5.72E+00	2.78E+00	2.03E+01
Total for period	Ci	1.09E+01	1.07E+01	1.46E+01	7.99E+00	4.42E+01
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	3.20E-04	5.91E-04	4.39E-04	1.78E-04	1.53E-03
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	1.60E-03	3.40E-03	2.73E-03	1.06E-03	8.97E-03
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	6.44E-04	2.99E-03	1.60E-03	4.37E-04	5.67E-03
Total for period	Ci	2.56E-03	6.98E-03	4.77E-03	1.68E-03	1.60E-02
3. Particulates						
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	6.90E-05	6.68E-05	4.77E-05	2.16E-05	2.05E-04
Sr-90	Ci	<LLD	<LLD	<LLD	2.71E-05	2.71E-05
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	3.29E-05	7.41E-05	6.29E-05	6.08E-05	2.37E-04
Co-58	Ci	2.70E-05	4.67E-05	9.99E-05	5.29E-05	2.27E-04
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	1.74E-04	3.46E-04	3.31E-04	3.41E-04	1.19E-03
Zn-65	Ci	1.02E-04	2.89E-04	3.67E-04	1.50E-04	9.08E-04
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	4.08E-06	2.00E-05	1.34E-06	2.54E-05
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	8.52E-06	6.45E-06	2.65E-05	6.89E-06	4.83E-05
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	6.21E-06	6.21E-06
Ba-140	Ci	1.21E-04	2.10E-04	1.59E-04	1.06E-04	5.97E-04
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	5.34E-04	1.04E-03	1.12E-03	7.74E-04	3.47E-03
4. Tritium						
Total for period	Ci	1.08E+00	1.10E+00	9.42E-01	6.88E-01	3.81E+00
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	3.73E+00	3.73E+00	3.77E+00	3.11E+00	1.43E+01

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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

GASEOUS EFFLUENTS

UNIT 3 MAIN CHIMNEY (*) ELEVATED RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNITS 1,2,3 (*) MIXED MODE RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
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-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	1.27E+00	1.27E+00
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	6.66E-06	<LLD	6.66E-06
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	6.66E-06	1.27E+00	1.27E+00
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	3.38E-06	3.38E-06
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	3.65E-06	3.65E-06
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	7.03E-06	7.03E-06
3. Particulates						
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	5.56-06	5.56E-06
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	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	1.84E-05	1.30E-05	8.17E-06	3.90E-05	7.86E-05
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

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
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	1.84E-05	1.30E-05	8.17E-06	4.46E-05	8.42E-05
4. Tritium						
Total for period	Ci	3.18E-01	4.77E-01	4.73E-01	4.82E-01	1.75E+00
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

(*): Units 1,2,3 mixed modes releases include Unit 1 Chemical Cleaning Building, Unit 2 Reactor Building Vent and Unit 3 Reactor Building Vent.

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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

GASEOUS EFFLUENTS

UNITS 1,2,3 (*) MIXED MODE RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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 (*)

(*): Units 1,2,3 mixed modes releases include Unit 1 Chemical Cleaning Building, Unit 2 Reactor Building Vent and Unit 3 Reactor Building Vent. No batch releases via these effluent paths.

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 1 CHEMICAL CLEANING BUILDING MIXED MODE RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
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-131m	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 and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-134	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-57	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	8.46E-07	5.95E-07	1.03E-06	4.10E-07	2.88E-06
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

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
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	8.46E-07	5.95E-07	1.03E-06	4.10E-07	2.88E-06
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 (*)

(*): Analysis not required per Dresden Station ODCM

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 1 CHEMICAL CLEANING BUILDING (*) MIXED MODE RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 2 REACTOR BUILDING VENT MIXED MODE RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
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-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	5.04E-01	5.04E-01
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	1.86E-06	<LLD	1.86E-06
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	1.86E-06	5.04E-01	5.04E-01
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	1.33E-06	1.33E-06
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	1.33E-06	1.33E-06
3. Particulates						
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	2.98E-06	2.98E-06
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	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	8.82E-06	4.07E-06	3.20E-07	1.77E-05	3.09E-05
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

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
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	8.82E-06	4.07E-06	3.20E-07	2.07E-05	3.39E-05
4. Tritium						
Total for period	Ci	7.55E-02	5.69E-02	6.22E-02	2.06E-01	4.00E-01
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 2 REACTOR BUILDING VENT (*) MIXED MODE RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-134	Ci					
Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 3 REACTOR BUILDING VENT MIXED MODE RELEASES CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
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-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	7.66E-01	7.66E-01
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	4.80E-06	<LLD	4.80E-06
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	4.80E-06	7.66E-01	7.66E-01
2. Iodines and Halogens						
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-84	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	2.05E-06	2.05E-06
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	3.65E-06	3.65E-06
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	<LLD	<LLD	<LLD	5.70E-06	5.70E-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	2.58E-06	2.58E-06
Co-57	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	8.75E-06	8.36E-06	6.82E-06	2.09E-05	4.48E-05
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

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
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	8.75E-06	8.36E-06	6.82E-06	2.35E-05	4.74E-05
4. Tritium						
Total for period	Ci	2.43E-01	4.20E-01	4.11E-01	2.76E-01	1.35E+00
5. Gross Alpha						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14						
Total for period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

GASEOUS EFFLUENTS

UNIT 3 REACTOR BUILDING VENT (*) MIXED MODE RELEASES BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	ANNUAL
1. Fission and Activation Gases						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-131m	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 and Halogens						
Br-82	Ci					
Br-84	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	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-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Nb-95	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sn-117m	Ci					
Te-123m	Ci					
Sb-124	Ci					
Sb-125	Ci					
Cs-134	Ci					

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

Cs-137	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
Hf-181	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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

UNITS 1,2,3 (*) LIQUID EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
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	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	% (**)	N/A	N/A	N/A	N/A	
B. Tritium						
1. Total release	Ci	7.95E-02	9.78E-02	9.98E-02	9.90E-02	2.37E+00
2. Average diluted concentration during period	µCi/ml	2.04E-11	4.22E-11	4.21E-11	4.18E-11	
3. Percent of applicable dose limit - whole body	% (**)	1.94E-05	2.38E-05	2.43E-05	2.41E-05	
C. Dissolved and entrained gases						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.03E+01
2. Average diluted concentration during period	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	% (**)	N/A	N/A	N/A	N/A	
D. Gross alpha activity						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.00E+01
E. Volume of waste released (prior to dilution)	Liters	1.64E+07	4.96E+06	5.01E+06	5.01E+06	
F. Volume of dilution water used during period	Liters	3.89E+12	2.32E+12	2.37E+12	2.37E+12	

(*): The values in these tables include Storm Sewer System and Sewage Treatment System unmonitored effluent path.
(**): These percentages are calculated referencing the quarterly "per unit" limits

DRESDEN NUCLEAR POWER STATION
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January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

UNIT 1 (*) LIQUID EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
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	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	%	N/A	N/A	N/A	N/A	
B. Tritium						
1. Total release	Ci	1.39E-02	<LLD	<LLD	<LLD	2.37E+00
2. Average diluted concentration during period	µCi/ml	9.10E-12	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - whole body	%	3.41E-06	0.00E+00	0.00E+00	0.00E+00	
C. Dissolved and entrained gases						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.03E+01
2. Average diluted concentration during period	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	%	N/A	N/A	N/A	N/A	
D. Gross alpha activity						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.00E+01
E. Volume of waste released (prior to dilution)	Liters	1.14E+07	N/A	N/A	N/A	
F. Volume of dilution water used during period	Liters	1.53E+12	N/A	N/A	N/A	

(*): The values in this these tables include the Sewage Treatment unmonitored effluent path.

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

UNIT 2 (*) LIQUID EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
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	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	%	N/A	N/A	N/A	N/A	
B. Tritium						
1. Total release	Ci	3.28E-02	4.89E-02	4.99E-02	4.95E-02	2.37E+00
2. Average diluted concentration during period	µCi/ml	2.77E-11	4.22E-11	4.21E-11	4.18E-11	
3. Percent of applicable dose limit - whole body	%	7.99E-06	1.19E-05	1.22E-05	1.21E-05	
C. Dissolved and entrained gases						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.03E+01
2. Average diluted concentration during period	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	%	N/A	N/A	N/A	N/A	
D. Gross alpha activity						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.00E+01
E. Volume of waste released (prior to dilution)	Liters	2.48E+06	2.48E+06	2.51E+06	2.51E+06	
F. Volume of dilution water used during period	Liters	1.18E+12	1.16E+12	1.18E+12	1.18E+12	

(*): The values in these tables include the Storm Sewer System unmonitored effluent path. The Storm Sewer System is 50% allocated to Unit 2.

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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

UNIT 3 (*) LIQUID EFFLUENTS SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
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	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	%	N/A	N/A	N/A	N/A	
B. Tritium						
1. Total release	Ci	3.28E-02	4.89E-02	4.99E-02	4.95E-02	2.37E+00
2. Average diluted concentration during period	µCi/ml	2.77E-11	4.22E-11	4.21E-11	4.18E-11	
3. Percent of applicable dose limit - whole body	%	7.99E-06	1.19E-05	1.22E-05	1.21E-05	
C. Dissolved and entrained gases						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.03E+01
2. Average diluted concentration during period	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of applicable dose limit - organ	%	N/A	N/A	N/A	N/A	
D. Gross alpha activity						
1. Total release	Ci	<LLD	<LLD	<LLD	<LLD	2.00E+01
E. Volume of waste released (prior to dilution)	Liters	2.48E+06	2.48E+06	2.51E+06	2.51E+06	
F. Volume of dilution water used during period	Liters	1.18E+12	1.16E+12	1.18E+12	1.18E+12	

(*): The values in these tables include the Storm Sewer System unmonitored effluent path. The Storm Sewer System is 50% allocated to Unit 3.

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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

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.

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EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

LIQUID EFFLUENTS

UNIT 1 SEWAGE TREATMENT PLANT (*) CONTINUOUS MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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	1.39E-02	<LLD	<LLD	<LLD	1.39E-02
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	1.39E-02	<LLD	<LLD	<LLD	1.39E-02

(*): The Sewage Treatment Plant is 100% allocated to Unit 1.

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

LIQUID EFFLUENTS

UNIT 1 SEWAGE TREATMENT PLANT (*) BATCH MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

LIQUID EFFLUENTS

UNIT 2 STORM SEWER SYSTEM (*) CONTINUOUS MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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	3.28E-02	4.89E-02	4.99E-02	4.95E-02	1.81E-01
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	3.28E-02	4.89E-02	4.99E-02	4.95E-02	1.81E-01

(*): The Storm Sewer System is 50% allocated to Unit 2.

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

LIQUID EFFLUENTS

UNIT 2 STORM SEWER SYSTEM (*) BATCH MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

LIQUID EFFLUENTS

UNIT 3 STORM SEWER SYSTEM (*) CONTINUOUS MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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	3.28E-02	4.89E-02	4.99E-02	4.95E-02	1.81E-01
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	3.28E-02	4.89E-02	4.99E-02	4.95E-02	1.81E-01

(*): The Storm Sewer System is 50% allocated to Unit 3.

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

LIQUID EFFLUENTS

UNIT 2 STORM SEWER SYSTEM (*) BATCH MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

LIQUID EFFLUENTS

UNIT 2 RADWASTE (*) CONTINUOUS MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 continuous releases via this effluent path

DRESDEN NUCLEAR POWER STATION
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EFFLUENT AND WASTE DISPOSAL SUMMARY
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Facility: Dresden Nuclear Power Station Units 1,2,3 Licensee: Exelon Nuclear

LIQUID EFFLUENTS

UNIT 2 RADWASTE (*) BATCH MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

LIQUID EFFLUENTS

UNIT 3 RADWASTE (*) CONTINUOUS MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 continuous releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

LIQUID EFFLUENTS

UNIT 3 RADWASTE (*) BATCH MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

LIQUID EFFLUENTS

UNIT 2 CONTAINMENT COOLING SERVICE WATER (*) CONTINUOUS MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

LIQUID EFFLUENTS

UNIT 2 CONTAINMENT COOLING SERVICE WATER (*) BATCH MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 batch releases via this effluent path.

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

LIQUID EFFLUENTS

UNIT 3 CONTAINMENT COOLING SERVICE WATER (*) CONTINUOUS MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

EFFLUENT AND WASTE DISPOSAL SUMMARY
DOCKET NUMBERS: 50-010/50-237/50-249

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

LIQUID EFFLUENTS

UNIT 3 CONTAINMENT COOLING SERVICE WATER (*) BATCH MODE

	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
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 batch releases via this effluent path

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
DOCKET NUMBERS: 50-010/50-237/50-249

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

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

Types of Waste

Type of Waste	Unit	12-Month Period	Est. Total Error, %
a. Spent resins, filter sludges / filters, evaporator bottoms, etc.	m^3	8.77E+01	+/- 2.50E+01
	Ci	1.36E+02	
b. Dry compressible waste, contaminated equipment, etc.	m^3	1.00E+03	+/- 2.50E+01
	Ci	6.13E+00	
c. Irradiated components, control rods, etc.	m^3	0.00E+00	N/A
	Ci	0.00E+00	
d. Other - Contaminated Oil	m^3	6.74E+00	+/- 2.50E+01
	Ci	6.04E-03	

Estimate of Major (i.e., ≥1%) Nuclide Composition (by Type of Waste)

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

Nuclide	Percent %	Curies
Fe-55	51.18	6.95E+01
Co-60	33.23	4.24E+01
Cs-137	10.68	1.45E+01
Zn-65	3.88	5.27E+00
Mn-54	1.27	1.73E+00

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

b. Dry compressible waste, contaminated equipment, etc.

Nuclide	Percent %	Curies
Fe-55	45.45	2.79E+00
Co-60	37.63	2.31E+00
Mn-54	7.76	4.76E-01
Zn-65	2.41	1.48E-01
Cr-51	2.08	1.28E-01

Shipment type: LSA
Solidification agent or absorbent: None

c. Irradiated components, control rods, etc.

Nuclide	Percent %	Curies
NONE	N/A	N/A

d. Other - Contaminated Oil

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
DOCKET NUMBERS: 50-010/50-237/50-249

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

Nuclide	Percent %	Curies
Fe-55	42.15	2.55E-03
Co-60	38.95	2.35E-03
Mn-54	6.19	3.73E-04
Cr-51	3.32	2.00E-04
Zn-65	2.92	1.76E-04
Fe-59	1.50	9.07E-05
Co-58	1.24	7.46E-05

Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
29	Motor freight (exclusive use only)	Energy Solutions - Bear Creek Road, Oak Ridge, TN
15	Motor freight (exclusive use only)	Energy Solutions - Clive, UT
2	Motor freight (exclusive use only)	Waste Control Specialists - Andrew, TX

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

Number of Shipments	Mode of Transportation	Destination
NONE	N/A	N/A

CHANGES TO THE PROCESS CONTROL PROGRAM

No changes were made to the Dresden Station radioactive liquid, gaseous, or solid waste treatment systems in 2016.

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

RADIOLOGICAL IMPACT ON MAN
DOCKET NUMBERS: 50-010/50-237/50-249

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

1. Doses to a Member of the Public due to Liquid Releases in 2016 (from 01/01/2016 to 12/31/2016):

UNITS 1,2,3
Total Body: 1.38E-06 mrem
Organ: 1.38E-06 mrem

UNIT 1
Total Body: 5.11E-08 mrem
Organ: 5.11E-08 mrem

UNIT 2
Total Body: 6.62E-07 mrem
Organ: 6.62E-07 mrem

UNIT 3
Total Body: 6.62E-07 mrem
Organ: 6.62E-07 mrem

The above annual liquid dose values are reported per Dresden-site (UNITS 1,2,3) as well as per each individual reactor unit (UNIT 1, UNIT 2, UNIT 3). Regulatory annual liquid dose limits are listed on page 1 section 1.d.3) and section 1.d.4), of this report as well as in Dresden ODCM. The above annual liquid dose values are well below any regulatory limits.

2. Doses to a Member of the Public due to Gaseous Releases in 2016 (from 01/01/2016 to 12/31/2016):

UNITS 1,2,3
Gamma air (fission and activation gases): 2.32E-03 mrad
Beta air (fission and activation gases): 1.12E-04 mrad
Total Body (noble gases): 1.54E-03 mrem
Skin (noble gases): 2.63E-03 mrem
Organ - bone (radioiodines/tritium/particulates): 9.33E-02 mrem

UNIT 1
Gamma air (fission and activation gases): N/A
Beta air (fission and activation gases): N/A
Total Body (noble gases): N/A
Skin (noble gases): N/A
Organ - bone (radioiodines/tritium/particulates): 1.87E-03 mrem

UNIT 2
Gamma air (fission and activation gases): 5.96E-04 mrad
Beta air (fission and activation gases): 3.21E-05 mrad
Total Body (noble gases): 3.96E-04 mrem
Skin (noble gases): 6.78E-04 mrem
Organ - bone (radioiodines/tritium/particulates): 4.51E-02 mrem

UNIT 3
Gamma air (fission and activation gases): 1.72E-03 mrad
Beta air (fission and activation gases): 8.04E-05 mrad
Total Body (noble gases): 1.15E-03 mrem

Skin (noble gases): 1.95E-03 mrem
Organ - bone (radioiodines/tritium/particulates): 4.72E-02 mrem

The above annual gaseous dose values are reported per Dresden-site (UNITS 1,2,3) as well as per each individual reactor unit (UNIT 1, UNIT 2, UNIT 3). Regulatory annual gaseous dose limits are listed on page 1 section 1.a. and section 1.b.,c., of this report as well as in Dresden ODCM. The above annual gaseous dose values are well below any regulatory limits.

3. Doses to a Member of the Public due to Direct Radiation in 2016 (from 01/01/2016 to 12/31/2016):

UNITS 1,2,3
Total Body (skyshine): 8.79E+00 mrem

UNITS 1
Total Body (skyshine): N/A

UNITS 2
Total Body (skyshine): 4.58E+00 mrem

UNITS 3
Total Body (skyshine): 4.21E+00 mrem

The above annual direct dose values are reported per Dresden-site (UNITS 1,2,3) as well as per each individual reactor unit (UNIT 1, UNIT 2, UNIT 3). These numbers are calculated per ODCM methodologies, and are used to demonstrate compliance with 40CFR190 total dose limit requirements listed on page 1 section 1.e, of this report as well as in Dresden ODCM.

4. Total body doses to the population and average doses to individuals in the population from all receiving-water-related-pathways are not applicable to Dresden Station. 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 from the site are not applicable to Dresden Station.

6. Doses from liquid and gaseous effluent to members of the public due to their activities inside the site boundary for the report period are not applicable to Dresden Station. Any member of the public who is onsite for a significant period of time is issued an Optical Stimulated Luminescent Dosimeter (OSLD) to monitor direct radiation exposure.

7. For the report period, there was one radiation monitor that exceeded its ODCM allowed inoperability time of 30 days. The Unit 2 Service Water rad monitor was non-functional for 31 days from 4/6/16 to 5/7/16. Issue Report 2667212 was written to describe the event and to track corrective actions. Compensatory sampling was in place from the time the monitor was considered non-functional until it was returned to functional status. The rad monitor was initially declared non-functional due to repeated failure and multiple replacements of the of the pump/motor/gearbox combination. Troubleshooting activities were performed throughout the ODCM allowed inoperability time, as a team of individuals determined potential causes of the pump problems, and then worked to systematically determine the actual cause. It was determined that the seal purge line was plugged, which lead to a successful pump replacement and pump run. The U2

Service Water rad monitor was restored to functional status on 5/7/16.

8. 40CFR190 / 10CFR72 Compliance:

The General Electric Hitachi Nuclear Energy Morris Operation (GEH Morris Operation) facility is physically located near Dresden Station, hence it is considered in the evaluation of the uranium fuel cycle on members of the public in the general environment.

Dresden decommissioning activities (Unit 1) and operations (Units 2 and 3) resulted in a maximum 9.34E-02 mrem organ dose and 8.79E+00 mrem total body dose. The Radiological Environmental Monitoring Program (REMP) direct radiation monitoring at or near the site boundary demonstrates that total body dose calculations to account for skyshine as found in the ODCM are conservative.

No effluents were released from the Dresden Independent Spent Fuel Storage Installations (ISFSIs) during 2016. REMP direct radiation monitoring at or near the site boundary demonstrates that the ISFSIs do not result in measurable dose to the public.

According to the 2016 GEH Morris Operation 10CFR72.44(d)(3) report, dated 2/24/2017, for the 2016 calendar year, the maximum dose at their site boundary from direct radiation exposure was 4.10E-01 mrem. The maximum organ dose from site activities was 1.20E-07 mrem for 2016.

Maximum combined total body dose from Dresden Station and GEH Morris Operation activities was 9.20E+00 mrem during 2016, which was 36.80 % of the 40CFR190 limit of 25 mrem.

Maximum combined organ dose from Dresden and GEH Morris Operation activities was 9.34E-02 mrem during 2016. This was 0.37 % of the 40CFR190 limit of 25 mrem to any organ. The combined thyroid dose was 2.63E-02 mrem. This was 0.04 % of the 40CFR190 limit of 75 mrem.

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	6	12	14	28	17	15	6	3	4	0	105
NNE	0	1	5	6	16	11	7	3	5	3	3	60
NE	0	3	8	11	19	19	11	2	0	0	1	74
ENE	0	2	11	13	16	10	6	0	0	0	0	58
E	0	4	3	14	42	21	3	1	2	2	0	92
ESE	0	2	7	11	42	24	15	10	15	1	0	127
SE	0	3	5	5	15	12	15	6	11	6	0	78
SSE	0	4	2	5	37	51	17	6	14	2	0	138
S	0	4	3	15	45	38	39	40	32	5	2	223
SSW	0	3	8	13	35	21	17	21	32	12	1	163
SW	0	1	8	11	16	31	21	16	14	4	2	124
WSW	0	1	9	9	18	18	13	11	8	11	2	100
W	0	2	9	9	33	45	49	30	54	7	6	244
WNW	0	7	6	16	38	42	47	41	18	1	0	216
NW	0	9	6	11	35	29	42	26	34	4	0	196
NNW	0	4	11	7	38	43	20	25	27	6	0	181
Tot	0	56	113	170	473	432	337	244	269	68	17	2179

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 2179
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	2	0	0	0	2
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	0	0	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0	0	2	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	0	0	0	0
SW	0	0	0	0	0	0	0	2	1	0	0	3
WSW	0	0	0	0	0	2	0	1	0	0	0	3
W	0	0	0	0	0	0	0	0	4	0	2	6
WNW	0	0	0	0	1	0	1	0	0	0	0	2
NW	0	0	0	0	0	2	0	0	0	0	0	2
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	1	1	4	1	5	7	0	2	21

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 21
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	1	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	1	1	0	1	0	0	0	3
SE	0	0	0	1	0	0	1	0	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	1	1	0	2
SSW	0	0	0	0	0	0	0	0	0	2	0	2
SW	0	0	0	0	0	1	1	0	0	1	1	4
WSW	0	0	0	0	1	2	0	1	1	0	0	5
W	0	0	0	0	0	1	0	0	0	1	1	3
WNW	0	0	0	0	0	0	0	2	0	0	0	2
NW	0	0	0	0	1	3	1	0	0	0	0	5
NNW	0	0	0	0	0	0	1	0	1	0	0	2
Tot	0	0	0	1	3	8	4	5	3	5	2	31

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 31
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	0	0	1	0	0	0	0	0	1
ENE	0	0	0	0	1	2	0	0	0	0	0	3
E	0	0	0	0	0	1	1	0	0	0	0	2
ESE	0	0	0	0	0	0	0	0	1	0	0	1
SE	0	0	0	0	0	2	2	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	1	0	0	1
SSW	0	0	0	0	1	0	0	0	1	3	0	5
SW	0	0	0	0	1	2	1	0	3	0	0	7
WSW	0	0	0	0	1	0	0	0	1	0	0	2
W	0	0	0	0	2	3	2	0	2	1	1	11
WNW	0	0	0	0	1	0	1	0	1	0	0	3
NW	0	0	0	0	1	2	1	1	1	0	0	6
NNW	0	0	0	0	1	1	0	0	2	0	0	4
Tot	0	0	0	0	9	14	8	1	13	4	1	50

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 50
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	2	4	6	7	7	1	2	0	0	29
NNE	0	0	1	1	2	1	0	2	2	0	0	9
NE	0	0	1	5	5	4	6	2	0	0	0	23
ENE	0	0	3	3	3	1	0	0	0	0	0	10
E	0	1	0	3	8	9	0	0	1	0	0	22
ESE	0	0	1	2	4	3	3	5	5	0	0	23
SE	0	0	0	4	3	1	2	1	4	2	0	17
SSE	0	0	0	0	4	8	4	1	3	0	0	20
S	0	1	0	3	3	1	6	11	16	2	0	43
SSW	0	0	1	0	5	6	1	2	6	7	1	29
SW	0	0	2	3	1	5	6	7	6	1	1	32
WSW	0	0	3	2	10	8	4	4	0	3	2	36
W	0	0	3	2	6	7	11	8	20	2	2	61
WNW	0	1	1	7	8	7	4	17	13	0	0	58
NW	0	0	3	2	9	3	10	6	13	1	0	47
NNW	0	1	4	3	10	11	2	8	6	3	0	48
Tot	0	4	25	44	87	82	66	75	97	21	6	507

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 507
Hours of Missing Data . . . 5
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	4	8	8	17	10	8	2	1	4	0	62
NNE	0	1	3	5	13	10	7	1	3	3	3	49
NE	0	0	7	6	14	14	5	0	0	0	1	47
ENE	0	2	8	10	12	7	6	0	0	0	0	45
E	0	2	1	8	30	11	2	1	1	2	0	58
ESE	0	1	3	6	23	19	12	4	7	1	0	76
SE	0	3	4	0	9	9	10	5	7	4	0	51
SSE	0	0	1	4	33	42	13	5	11	2	0	111
S	0	2	3	7	29	32	32	29	14	2	2	152
SSW	0	0	1	4	19	12	16	19	25	0	0	96
SW	0	1	3	2	8	9	11	7	4	2	0	47
WSW	0	0	3	6	4	4	6	4	6	8	0	41
W	0	1	3	7	25	34	36	22	28	3	0	159
WNW	0	2	5	9	27	35	41	22	4	1	0	146
NW	0	6	2	7	24	19	30	19	20	3	0	130
NNW	0	2	3	4	24	31	17	17	18	3	0	119
Tot	0	27	58	93	311	298	252	157	149	38	6	1389

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1389
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	2	2	5	0	0	0	0	0	0	10
NNE	0	0	1	0	1	0	0	0	0	0	0	2
NE	0	3	0	0	0	0	0	0	0	0	0	3
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	1	2	2	3	0	0	0	0	0	0	8
ESE	0	1	3	3	12	1	0	0	0	0	0	20
SE	0	0	1	0	3	0	0	0	0	0	0	4
SSE	0	4	1	1	0	1	0	0	0	0	0	7
S	0	1	0	5	12	5	1	0	0	0	0	24
SSW	0	3	5	9	9	3	0	0	0	0	0	29
SW	0	0	3	6	2	11	2	0	0	0	0	24
WSW	0	1	3	0	2	2	3	1	0	0	0	12
W	0	1	3	0	0	0	0	0	0	0	0	4
WNW	0	4	0	0	1	0	0	0	0	0	0	5
NW	0	3	1	2	0	0	0	0	0	0	0	6
NNW	0	1	3	0	3	0	0	0	0	0	0	7
Tot	0	24	28	30	53	23	6	1	0	0	0	165

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 165
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	0	0	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	1	0	0	0	0	0	0	1
ESE	0	0	0	0	2	0	0	0	0	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	1	0	0	0	0	0	0	1
SSW	0	0	1	0	1	0	0	0	0	0	0	2
SW	0	0	0	0	4	3	0	0	0	0	0	7
WSW	0	0	0	1	0	0	0	0	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	0	0	0
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	1	0	0	0	0	0	0	0	0	1
Tot	0	1	2	1	9	3	0	0	0	0	0	16

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 16
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	7	7	12	21	18	23	17	8	3	4	120
NNE	0	0	0	6	14	15	10	4	6	5	7	67
NE	0	1	4	9	15	18	9	11	5	0	0	72
ENE	0	2	1	7	27	11	10	10	1	0	0	69
E	0	1	2	11	16	29	19	9	3	0	4	94
ESE	0	0	4	9	9	10	22	19	19	12	2	106
SE	0	1	1	2	9	13	36	14	13	9	6	104
SSE	0	0	0	2	10	14	36	28	16	3	5	114
S	0	0	1	2	13	20	27	29	65	32	7	196
SSW	0	1	1	2	9	22	41	33	38	28	14	189
SW	0	0	3	4	8	8	21	19	42	13	6	124
WSW	0	0	4	5	19	20	15	5	24	9	18	119
W	0	0	2	6	14	25	31	45	64	44	14	245
WNW	0	2	1	6	19	23	27	37	71	20	4	210
NW	0	2	6	4	14	18	33	29	52	24	9	191
NNW	0	0	1	8	12	15	34	28	32	22	7	159
Tot	0	17	38	95	229	279	394	337	459	224	107	2179

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 2179
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	2	0	0	2
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	0	0	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0	0	0	2	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	0	0	0	0
SW	0	0	0	0	0	0	0	0	3	0	0	3
WSW	0	0	0	0	0	1	1	0	1	0	0	3
W	0	0	0	0	0	0	0	0	1	3	2	6
WNW	0	0	0	0	0	1	0	0	1	0	0	2
NW	0	0	0	0	0	0	2	0	0	0	0	2
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	1	0	2	3	0	8	5	2	21

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 21
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	1	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	1	1	0	1	0	1	0	0	4
SE	0	0	0	0	0	0	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	1	0	1
SSW	0	0	0	0	0	0	0	0	0	0	3	3
SW	0	0	0	0	0	0	1	1	0	0	2	4
WSW	0	0	0	0	0	1	2	0	1	1	0	5
W	0	0	0	0	0	1	0	0	0	0	2	3
WNW	0	0	0	0	1	0	0	0	2	0	0	3
NW	0	0	0	0	0	0	4	0	0	0	0	4
NNW	0	0	0	0	0	0	1	0	0	1	0	2
Tot	0	0	0	1	2	2	10	2	4	3	7	31

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 31
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	0	0	0	1	0	0	0	0	1
ENE	0	0	0	0	1	1	1	0	0	0	0	3
E	0	0	0	0	0	0	1	1	0	0	0	2
ESE	0	0	0	0	0	0	0	0	0	1	0	1
SE	0	0	0	0	0	1	3	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	1	0	1
SSW	0	0	0	0	1	0	1	0	0	1	3	6
SW	0	0	0	0	0	1	1	1	1	2	0	6
WSW	0	0	0	0	1	0	0	0	0	1	0	2
W	0	0	0	0	1	2	3	1	0	2	2	11
WNW	0	0	0	0	0	1	0	0	1	1	0	3
NW	0	0	0	0	1	1	3	0	1	1	1	8
NNW	0	0	0	0	0	1	0	0	0	1	0	2
Tot	0	0	0	0	5	8	14	3	3	11	6	50

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 50
Hours of Missing Data . . . 5
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	2	5	10	1	7	7	1	2	0	36
NNE	0	0	0	2	0	1	1	0	1	2	0	7
NE	0	0	2	4	5	3	3	5	4	0	0	26
ENE	0	0	0	2	4	1	1	0	0	0	0	8
E	0	0	0	2	5	5	7	3	0	0	1	23
ESE	0	0	1	4	2	2	0	3	7	3	0	22
SE	0	0	0	1	3	4	5	1	2	4	2	22
SSE	0	0	0	0	0	6	5	3	2	0	0	16
S	0	0	0	1	7	1	3	4	15	12	1	44
SSW	0	1	0	0	0	4	3	1	4	5	8	26
SW	0	0	2	4	0	2	5	6	8	5	2	34
WSW	0	0	1	3	7	7	5	1	7	0	6	37
W	0	0	1	4	1	6	6	6	18	15	3	60
WNW	0	0	1	1	10	8	3	2	19	12	2	58
NW	0	1	3	3	5	5	3	9	10	8	2	49
NNW	0	0	0	3	5	4	7	2	9	6	3	39
Tot	0	3	13	39	64	60	64	53	107	74	30	507

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 507
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	4	3	6	10	15	11	9	5	1	4	68
NNE	0	0	0	3	12	13	8	4	5	3	7	55
NE	0	0	2	3	9	15	5	6	1	0	0	41
ENE	0	1	0	4	20	9	8	10	1	0	0	53
E	0	1	1	8	11	24	11	5	3	0	3	67
ESE	0	0	1	4	5	7	16	14	11	6	2	66
SE	0	0	1	0	4	3	15	12	11	5	4	55
SSE	0	0	0	1	8	7	31	24	14	3	5	93
S	0	0	1	1	6	16	22	24	47	18	6	141
SSW	0	0	0	0	4	13	22	22	33	22	0	116
SW	0	0	0	0	6	3	10	7	16	6	2	50
WSW	0	0	1	1	6	7	2	3	7	5	12	44
W	0	0	0	2	9	15	22	38	45	24	5	160
WNW	0	2	0	5	8	13	23	35	48	7	2	143
NW	0	0	2	1	8	11	20	20	41	15	6	124
NNW	0	0	1	4	7	10	25	25	23	14	4	113
Tot	0	8	13	43	133	181	251	258	311	129	62	1389

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1389
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	2	1	0	1	2	5	0	0	0	0	11
NNE	0	0	0	1	2	1	1	0	0	0	0	5
NE	0	1	0	2	1	0	0	0	0	0	0	4
ENE	0	1	1	1	2	0	0	0	0	0	0	5
E	0	0	1	0	0	0	0	0	0	0	0	1
ESE	0	0	2	0	1	1	5	2	0	0	0	11
SE	0	1	0	1	2	5	10	0	0	0	0	19
SSE	0	0	0	1	2	1	0	1	0	0	0	5
S	0	0	0	0	0	3	1	1	3	0	0	8
SSW	0	0	1	2	3	5	15	10	1	0	0	37
SW	0	0	1	0	2	2	3	4	11	0	0	23
WSW	0	0	2	1	5	3	3	0	7	2	0	23
W	0	0	1	0	3	1	0	0	0	0	0	5
WNW	0	0	0	0	0	0	1	0	0	0	0	1
NW	0	1	1	0	0	1	1	0	0	0	0	4
NNW	0	0	0	1	0	0	1	1	0	0	0	3
Tot	0	6	11	10	24	25	46	19	22	2	0	165

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 165
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	1	0	0	0	0	0	0	0	2
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	2	1	0	0	0	3
SSE	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	3	0	0	4
WSW	0	0	0	0	0	1	2	1	1	0	0	5
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	1	1	1	1	6	2	4	0	0	16

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 16
Hours of Missing Data . . . 5
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	3	1	4	13	9	17	15	25	6	6	99
NNE	0	3	2	6	4	16	18	9	12	5	8	83
NE	0	1	3	7	6	10	10	8	15	1	0	61
ENE	0	1	3	5	21	15	13	12	9	0	0	79
E	1	1	2	5	12	17	29	13	9	2	5	96
ESE	0	0	3	6	7	5	11	5	24	15	6	82
SE	0	0	2	2	9	8	14	22	34	18	11	120
SSE	0	0	0	0	5	14	14	22	31	7	6	99
S	0	1	0	2	13	6	8	21	63	47	29	190
SSW	0	0	3	0	2	8	19	17	48	48	51	196
SW	0	1	1	3	1	12	10	20	39	41	12	140
WSW	0	0	0	5	7	11	12	11	15	24	25	110
W	0	1	1	4	10	19	20	18	56	47	40	216
WNW	0	0	1	6	9	20	14	13	100	56	10	229
NW	0	1	4	1	10	18	16	26	71	29	23	199
NNW	0	1	2	5	11	10	13	28	48	27	18	163
Tot	1	14	28	61	140	198	238	260	599	373	250	2162

Hours of Calm 2
Hours of Variable Direction 0
Hours of Valid Data 2164
Hours of Missing Data . . . 20
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	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	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	1	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	0	0	0	0	0	0	0	0	0	1	1

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1
Hours of Missing Data . . . 20
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	2	0	0	2
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	1	0	0	0	0	0	2	0	3
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	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	3	0	3
WNW	0	0	0	0	0	1	0	0	3	2	2	8
NW	0	0	0	0	0	0	0	3	1	0	0	4
NNW	0	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	1	0	1	0	3	6	7	2	20

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 20
Hours of Missing Data . . . 20
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	1	0	1	1	0	0	3
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	1	0	0	0	0	1
ENE	0	0	0	0	1	0	2	0	0	0	0	3
E	0	0	0	0	0	0	1	1	0	0	0	2
ESE	0	0	0	1	0	0	0	0	1	1	0	3
SE	0	0	0	0	1	0	1	1	0	0	0	3
SSE	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	2	0	2
SSW	0	0	0	0	0	0	0	0	0	0	4	4
SW	0	0	0	0	0	0	0	2	3	1	2	8
WSW	0	0	0	0	1	1	4	0	1	2	0	9
W	0	0	0	0	0	2	5	1	1	2	4	15
WNW	0	0	0	0	0	2	0	0	6	4	0	12
NW	0	0	0	0	1	0	6	3	3	1	1	15
NNW	0	0	0	0	1	3	0	0	0	1	0	5
Tot	0	0	0	1	5	9	20	9	16	14	11	85

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 85
Hours of Missing Data . . . 20
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	0	4	10	6	13	11	12	4	6	67
NNE	0	2	1	5	2	8	14	4	3	4	8	51
NE	0	0	3	7	4	5	7	7	12	1	0	46
ENE	0	0	1	2	13	8	3	12	9	0	0	48
E	0	1	1	2	7	11	17	8	6	1	5	59
ESE	0	0	2	3	5	4	10	4	10	10	6	54
SE	0	0	0	1	7	7	9	8	11	6	6	55
SSE	0	0	0	0	4	9	11	10	15	6	0	55
S	0	0	0	1	13	5	4	13	22	13	11	82
SSW	0	0	1	0	0	3	12	6	12	10	25	69
SW	0	1	0	3	0	4	3	4	14	14	8	51
WSW	0	0	0	3	3	6	7	3	4	6	17	49
W	0	1	1	4	7	14	15	14	45	35	30	166
WNW	0	0	0	6	8	15	10	10	67	45	7	168
NW	0	0	4	1	9	15	7	13	45	26	22	142
NNW	0	0	2	5	10	6	11	21	39	25	17	136
Tot	0	6	16	47	102	126	153	148	326	206	168	1298

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1298
Hours of Missing Data . . . 20
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	2	1	0	3	2	4	3	7	2	0	24
NNE	0	1	1	0	2	8	4	4	5	1	0	26
NE	0	0	0	0	2	4	2	1	3	0	0	12
ENE	0	1	2	3	6	7	8	0	0	0	0	27
E	1	0	1	3	4	5	10	4	3	1	0	32
ESE	0	0	0	1	2	1	1	0	11	2	0	18
SE	0	0	1	1	1	1	2	9	17	12	5	49
SSE	0	0	0	0	1	1	0	8	13	1	6	30
S	0	1	0	1	0	1	4	8	40	32	18	105
SSW	0	0	0	0	1	3	5	10	36	37	21	113
SW	0	0	1	0	1	8	5	12	13	15	2	57
WSW	0	0	0	1	3	3	1	6	3	13	6	36
W	0	0	0	0	3	2	0	3	10	7	6	31
WNW	0	0	1	0	1	2	4	3	24	5	0	40
NW	0	1	0	0	0	3	3	7	22	2	0	38
NNW	0	1	0	0	0	1	2	7	9	1	1	22
Tot	1	7	8	10	30	52	55	85	216	131	65	660

Hours of Calm 1
Hours of Variable Direction 0
Hours of Valid Data 661
Hours of Missing Data . . . 20
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	3	0	0	3
NNE	0	0	0	1	0	0	0	1	4	0	0	6
NE	0	1	0	0	0	1	0	0	0	0	0	2
ENE	0	0	0	0	1	0	0	0	0	0	0	1
E	0	0	0	0	1	1	1	0	0	0	0	3
ESE	0	0	1	0	0	0	0	1	2	0	0	4
SE	0	0	1	0	0	0	2	4	4	0	0	11
SSE	0	0	0	0	0	4	3	4	3	0	0	14
S	0	0	0	0	0	0	0	0	1	0	0	1
SSW	0	0	2	0	1	2	2	1	0	1	1	10
SW	0	0	0	0	0	0	2	2	7	8	0	19
WSW	0	0	0	1	0	1	0	2	7	3	2	16
W	0	0	0	0	0	1	0	0	0	0	0	1
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	1	4	2	3	10	10	15	31	12	3	91

Hours of Calm 1
Hours of Variable Direction 0
Hours of Valid Data 92
Hours of Missing Data . . . 20
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jan - Mar for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	2	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	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	2	3	0	5
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	0	0	0	0	0	4	3	0	7

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 7
Hours of Missing Data . . . 20
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	2	3	8	22	29	18	16	0	0	0	98
NNE	0	2	7	17	26	29	19	9	0	0	0	109
NE	0	10	5	14	54	66	38	12	0	0	0	199
ENE	0	3	8	27	54	24	4	0	0	0	0	120
E	0	4	6	25	58	25	18	8	0	0	0	144
ESE	0	1	6	10	39	37	23	17	5	0	0	138
SE	0	2	6	6	39	26	21	1	9	1	0	111
SSE	0	1	8	9	36	27	17	14	11	1	0	124
S	0	8	12	20	36	36	27	18	22	3	0	182
SSW	1	1	14	11	40	22	11	12	12	2	1	127
SW	0	8	25	20	38	16	9	9	8	2	5	140
WSW	0	11	11	13	27	21	15	14	3	1	0	116
W	1	14	13	12	26	29	21	6	2	0	1	125
WNW	0	21	14	12	22	30	30	18	14	0	4	165
NW	0	9	22	16	27	23	22	16	23	4	1	163
NNW	0	6	11	22	35	10	7	14	15	1	0	121
Tot	2	103	171	242	579	450	300	184	124	15	12	2182

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

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	5	3	0	0	0	0	8
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	1	3	1	0	0	0	5
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	1	0	3	3	0	0	0	7
SE	0	0	0	0	2	0	3	0	0	0	0	5
SSE	0	0	0	1	0	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	0	0	0	0	0	1	1	2
SW	0	0	0	0	0	0	1	0	0	0	2	3
WSW	0	0	0	0	0	0	2	0	0	0	0	2
W	0	0	0	0	0	0	0	1	0	0	0	1
WNW	0	0	0	0	0	1	1	0	3	0	1	6
NW	0	0	0	0	1	1	0	0	0	0	0	2
NNW	0	0	0	0	1	0	1	1	2	0	0	5
Tot	0	0	0	1	5	8	17	6	5	1	4	47

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 47
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	1	1	1	2	0	0	0	0	5
NNE	0	0	0	0	1	0	0	0	0	0	0	1
NE	0	0	0	0	0	2	3	1	0	0	0	6
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	1	0	0	0	0	0	0	0	1
ESE	0	0	0	0	1	1	1	2	0	0	0	5
SE	0	0	0	0	0	1	4	1	0	0	0	6
SSE	0	0	0	0	0	2	0	0	0	0	0	2
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	2	0	0	0	0	0	3
WSW	0	0	0	0	4	4	1	3	0	0	0	12
W	0	0	0	0	1	1	2	1	0	0	0	5
WNW	0	0	0	0	0	0	3	0	2	0	2	7
NW	0	0	0	0	1	4	2	0	0	0	0	7
NNW	0	0	0	0	0	0	0	1	1	0	0	2
Tot	0	0	0	2	10	18	18	9	3	0	2	62

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 62
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	1	3	1	1	0	0	0	6
NNE	0	0	0	0	1	4	1	0	0	0	0	6
NE	0	0	0	0	0	4	5	0	0	0	0	9
ENE	0	0	0	0	0	1	0	0	0	0	0	1
E	0	0	0	0	3	0	0	0	0	0	0	3
ESE	0	0	0	1	0	4	1	1	0	0	0	7
SE	0	0	0	2	3	4	2	0	0	0	0	11
SSE	0	0	0	0	2	1	0	0	0	0	0	3
S	0	0	0	0	0	0	0	0	1	1	0	2
SSW	0	0	0	0	2	2	0	0	0	0	0	4
SW	0	0	1	0	0	2	0	1	0	0	0	4
WSW	0	0	0	0	2	2	3	2	0	0	0	9
W	0	0	0	0	1	1	1	0	0	0	0	3
WNW	0	0	0	0	1	1	0	2	1	0	1	6
NW	0	0	0	0	0	1	0	0	1	0	0	2
NNW	0	0	0	0	1	0	0	1	1	0	0	3
Tot	0	0	1	3	17	30	14	8	4	1	1	79

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 79
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	2	3	6	10	9	9	0	0	0	39
NNE	0	0	1	6	11	8	10	6	0	0	0	42
NE	0	0	2	6	13	30	19	9	0	0	0	79
ENE	0	0	0	5	6	10	4	0	0	0	0	25
E	0	1	0	5	13	6	3	6	0	0	0	34
ESE	0	0	4	3	10	9	6	3	3	0	0	38
SE	0	0	3	0	17	10	8	0	1	0	0	39
SSE	0	0	1	2	9	7	9	4	4	0	0	36
S	0	1	0	6	5	6	9	5	11	0	0	43
SSW	0	0	1	2	14	10	4	8	6	0	0	45
SW	0	1	1	3	5	3	5	3	4	1	2	28
WSW	0	0	0	2	7	8	2	8	1	0	0	28
W	0	1	1	2	8	10	12	3	1	0	1	39
WNW	0	0	2	6	9	12	13	10	8	0	0	60
NW	0	0	3	3	5	8	7	2	16	3	1	48
NNW	0	0	0	5	8	3	4	8	7	0	0	35
Tot	0	4	21	59	146	150	124	84	62	4	4	658

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 658
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	0	3	12	9	3	6	0	0	0	34
NNE	0	0	4	5	13	17	8	3	0	0	0	50
NE	0	6	2	6	41	29	8	1	0	0	0	93
ENE	0	2	6	17	47	13	0	0	0	0	0	85
E	0	0	4	16	39	19	15	2	0	0	0	95
ESE	0	0	0	3	18	20	12	8	2	0	0	63
SE	0	0	1	2	9	9	4	0	8	1	0	34
SSE	0	0	0	4	19	17	8	10	7	1	0	66
S	0	0	7	6	20	26	18	13	10	2	0	102
SSW	0	0	1	3	17	8	5	4	6	1	0	45
SW	0	1	3	3	7	6	2	4	4	1	1	32
WSW	0	2	0	4	6	4	7	1	2	1	0	27
W	0	3	1	5	13	16	6	1	1	0	0	46
WNW	0	5	3	3	12	16	13	6	0	0	0	58
NW	0	1	10	5	13	9	13	14	6	1	0	72
NNW	0	0	5	10	17	7	2	3	4	1	0	49
Tot	0	21	47	95	303	225	124	76	50	9	1	951

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 951
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	1	1	2	1	0	0	0	0	0	6
NNE	0	0	1	5	0	0	0	0	0	0	0	6
NE	0	2	0	2	0	0	0	0	0	0	0	4
ENE	0	1	1	4	1	0	0	0	0	0	0	7
E	0	2	1	1	3	0	0	0	0	0	0	7
ESE	0	1	2	2	9	3	0	0	0	0	0	17
SE	0	2	2	2	7	2	0	0	0	0	0	15
SSE	0	1	6	2	6	0	0	0	0	0	0	15
S	0	4	2	6	9	4	0	0	0	0	0	25
SSW	1	0	8	4	6	2	2	0	0	0	0	23
SW	0	1	10	9	13	2	1	1	0	0	0	37
WSW	0	7	6	5	6	3	0	0	0	0	0	27
W	0	3	8	3	3	1	0	0	0	0	0	18
WNW	0	3	4	3	0	0	0	0	0	0	0	10
NW	0	2	5	6	7	0	0	0	0	0	0	20
NNW	0	0	5	7	7	0	0	0	0	0	0	19
Tot	1	30	62	62	79	18	3	1	0	0	0	256

Hours of Calm 1
Hours of Variable Direction 0
Hours of Valid Data 257
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	2	1	1	0	0	0	0	0	0	0	4
NE	0	2	1	0	0	0	0	0	0	0	0	3
ENE	0	0	1	1	0	0	0	0	0	0	0	2
E	0	1	1	2	0	0	0	0	0	0	0	4
ESE	0	0	0	1	0	0	0	0	0	0	0	1
SE	0	0	0	0	1	0	0	0	0	0	0	1
SSE	0	0	1	0	0	0	0	0	0	0	0	1
S	0	3	3	2	2	0	0	0	0	0	0	10
SSW	0	1	4	2	1	0	0	0	0	0	0	8
SW	0	5	10	5	12	1	0	0	0	0	0	33
WSW	0	2	5	2	2	0	0	0	0	0	0	11
W	1	7	3	2	0	0	0	0	0	0	0	13
WNW	0	13	5	0	0	0	0	0	0	0	0	18
NW	0	6	4	2	0	0	0	0	0	0	0	12
NNW	0	6	1	0	1	0	0	0	0	0	0	8
Tot	1	48	40	20	19	1	0	0	0	0	0	129

Hours of Calm 1
Hours of Variable Direction 0
Hours of Valid Data 130
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	2	2	5	28	30	27	16	20	0	0	130
NNE	0	0	2	6	17	21	24	22	10	0	0	102
NE	0	0	3	9	24	42	53	36	19	0	0	186
ENE	0	1	6	4	33	41	28	5	4	0	0	122
E	0	1	3	8	23	34	39	23	20	1	0	152
ESE	0	0	2	12	17	25	38	27	25	7	0	153
SE	0	0	5	4	23	25	35	18	7	8	2	127
SSE	0	1	1	6	19	22	27	18	19	8	1	122
S	0	0	2	4	14	21	34	42	30	18	3	168
SSW	0	0	2	4	13	32	26	15	16	10	3	121
SW	0	0	3	5	16	21	21	21	19	9	9	124
WSW	0	1	3	4	19	28	28	14	24	3	3	127
W	0	1	2	7	25	33	25	22	16	1	2	134
WNW	0	2	5	4	21	19	22	25	37	17	5	157
NW	0	1	4	9	15	25	18	24	27	21	8	152
NNW	0	1	2	4	17	23	16	9	21	13	1	107
Tot	0	11	47	95	324	442	461	337	314	116	37	2184

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

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	4	2	2	0	0	0	8
NNE	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	1	3	1	0	0	5
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	1	0	1	3	2	0	0	7
SE	0	0	0	0	2	0	1	2	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	0	0	0	0	0	0	2	2
SW	0	0	0	0	0	0	0	1	0	0	2	3
WSW	0	0	0	0	0	0	1	1	0	0	0	2
W	0	0	0	0	0	0	0	0	1	0	0	1
WNW	0	0	0	0	0	1	0	1	1	2	1	6
NW	0	0	0	0	0	1	0	1	0	0	0	2
NNW	0	0	0	0	0	1	0	0	2	2	0	5
Tot	0	0	0	0	4	7	6	14	7	4	5	47

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 47
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	1	0	1	2	1	0	0	0	5
NNE	0	0	0	0	0	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	3	2	1	0	0	6
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	1	0	0	0	1
ESE	0	0	0	1	1	1	2	1	0	0	0	6
SE	0	0	0	0	0	1	3	3	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	0	0	0	0	0	0	0
SW	0	0	0	0	0	1	1	0	0	0	0	2
WSW	0	0	0	0	3	2	4	1	3	0	0	13
W	0	0	0	0	1	0	1	1	2	0	0	5
WNW	0	0	0	0	0	0	0	2	1	2	2	7
NW	0	0	0	0	0	2	3	2	0	0	0	7
NNW	0	0	0	0	0	0	0	0	1	1	0	2
Tot	0	0	0	2	5	9	19	14	8	3	2	62

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 62
Hours of Missing Data . . . 0
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	1	1	3	0	1	0	0	6
NNE	0	0	0	0	0	1	4	2	0	0	0	7
NE	0	0	0	0	0	0	5	3	0	0	0	8
ENE	0	0	0	0	0	1	0	0	0	0	0	1
E	0	0	0	0	1	2	0	0	0	0	0	3
ESE	0	0	0	0	1	1	3	2	0	0	0	7
SE	0	0	0	0	6	1	5	0	0	0	0	12
SSE	0	0	0	0	1	0	1	0	0	0	0	2
S	0	0	0	0	0	0	0	0	1	1	0	2
SSW	0	0	0	0	1	1	1	0	0	0	0	3
SW	0	0	0	1	1	0	2	0	1	0	0	5
WSW	0	0	0	0	2	1	1	3	2	0	0	9
W	0	0	0	0	1	0	1	0	1	0	0	3
WNW	0	0	0	0	0	1	2	0	2	1	1	7
NW	0	0	0	0	0	0	0	0	0	1	0	1
NNW	0	0	0	0	1	0	0	0	1	1	0	3
Tot	0	0	0	1	16	10	28	10	9	4	1	79

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 79
Hours of Missing Data . . . 0
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	1	8	6	9	6	12	0	0	43
NNE	0	0	0	4	10	5	9	8	7	0	0	43
NE	0	0	1	3	8	14	21	18	11	0	0	76
ENE	0	0	0	0	6	5	7	5	3	0	0	26
E	0	1	0	2	8	7	4	2	7	1	0	32
ESE	0	0	0	7	9	6	9	3	3	3	0	40
SE	0	0	1	3	10	12	10	6	2	1	0	45
SSE	0	0	0	1	4	6	7	6	3	2	0	29
S	0	0	1	4	3	4	9	6	10	6	1	44
SSW	0	0	1	2	2	12	8	3	9	4	0	41
SW	0	0	2	1	3	4	4	2	8	3	4	31
WSW	0	0	0	1	4	9	4	3	7	2	0	30
W	0	0	1	2	4	7	6	8	7	1	1	37
WNW	0	0	1	1	6	8	9	8	16	10	1	60
NW	0	0	1	7	1	2	4	8	6	11	7	47
NNW	0	0	1	3	6	3	1	2	13	5	0	34
Tot	0	1	11	42	92	110	121	94	124	49	14	658

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 658
Hours of Missing Data . . . 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	3	12	13	8	6	7	0	0	49
NNE	0	0	1	2	6	14	11	12	3	0	0	49
NE	0	0	0	5	12	27	23	10	6	0	0	83
ENE	0	1	1	3	22	35	21	0	1	0	0	84
E	0	0	1	3	11	22	31	18	13	0	0	99
ESE	0	0	1	2	3	11	15	16	19	4	0	71
SE	0	0	1	0	3	6	10	3	5	7	2	37
SSE	0	0	0	2	8	9	15	12	16	6	1	69
S	0	0	0	0	4	9	18	29	18	11	2	91
SSW	0	0	0	0	3	8	11	7	6	6	1	42
SW	0	0	1	2	6	4	8	7	5	5	3	41
WSW	0	0	0	1	1	3	5	3	7	1	3	24
W	0	0	0	2	4	9	12	13	5	0	1	46
WNW	0	0	2	0	4	6	10	13	17	2	0	54
NW	0	0	1	1	8	11	6	12	21	9	1	70
NNW	0	0	1	1	9	8	7	7	4	4	1	42
Tot	0	1	10	27	116	195	211	168	153	55	15	951

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 951
Hours of Missing Data . . . 0
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	0	0	7	4	3	1	0	0	0	16
NNE	0	0	0	0	1	0	0	0	0	0	0	1
NE	0	0	1	1	3	1	0	0	0	0	0	6
ENE	0	0	3	1	4	0	0	0	0	0	0	8
E	0	0	1	1	2	3	4	2	0	0	0	13
ESE	0	0	0	1	1	4	7	2	1	0	0	16
SE	0	0	0	1	2	4	6	3	0	0	0	16
SSE	0	0	1	2	3	6	4	0	0	0	0	16
S	0	0	0	0	5	7	5	6	1	0	0	24
SSW	0	0	0	2	4	9	4	5	1	0	0	25
SW	0	0	0	1	6	10	3	7	5	1	0	33
WSW	0	0	0	1	7	4	6	1	3	0	0	22
W	0	0	1	2	6	9	3	0	0	0	0	21
WNW	0	0	1	1	2	2	1	1	0	0	0	8
NW	0	1	1	1	4	6	5	1	0	0	0	19
NNW	0	0	0	0	0	7	6	0	0	0	0	13
Tot	0	2	9	15	57	76	57	29	11	1	0	257

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 257
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	1	0	0	1	0	0	0	0	0	3
NNE	0	0	1	0	0	0	0	0	0	0	0	1
NE	0	0	1	0	1	0	0	0	0	0	0	2
ENE	0	0	2	0	1	0	0	0	0	0	0	3
E	0	0	1	2	1	0	0	0	0	0	0	4
ESE	0	0	1	1	1	2	1	0	0	0	0	6
SE	0	0	3	0	0	1	0	1	0	0	0	5
SSE	0	1	0	1	2	1	0	0	0	0	0	5
S	0	0	1	0	2	1	2	1	0	0	0	7
SSW	0	0	1	0	3	2	2	0	0	0	0	8
SW	0	0	0	0	0	2	3	4	0	0	0	9
WSW	0	1	3	1	2	9	7	2	2	0	0	27
W	0	1	0	1	9	8	2	0	0	0	0	21
WNW	0	2	1	2	9	1	0	0	0	0	0	15
NW	0	0	1	0	2	3	0	0	0	0	0	6
NNW	0	1	0	0	1	4	2	0	0	0	0	8
Tot	0	7	17	8	34	35	19	8	2	0	0	130

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 130
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	0	7	20	18	29	25	1	0	101
NNE	0	0	1	4	11	19	22	23	31	1	0	112
NE	0	0	4	5	13	23	32	53	41	9	0	180
ENE	0	0	1	5	26	26	27	30	14	1	0	130
E	0	0	2	5	13	19	23	18	36	15	1	132
ESE	0	2	0	6	15	14	25	24	39	37	6	168
SE	0	0	2	4	17	18	32	27	25	4	6	135
SSE	0	0	0	3	14	16	15	17	36	10	6	117
S	0	1	2	5	6	11	17	24	49	37	16	168
SSW	0	0	1	1	6	19	21	11	50	10	10	129
SW	0	0	0	4	4	11	19	16	24	19	12	109
WSW	0	1	3	4	14	19	14	17	31	24	5	132
W	0	1	2	6	7	16	22	20	42	11	2	129
WNW	0	0	3	3	14	15	21	26	53	29	10	174
NW	0	2	1	7	10	12	12	23	32	29	20	148
NNW	0	1	1	6	10	10	15	15	41	15	6	120
Tot	0	8	24	68	187	268	335	373	569	252	100	2184

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

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	1	0	0	0	0	0	0	1
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	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	0	1	0	0	0	0	0	0	1

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

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	1	0	0	2	1	0	0	4
SE	0	0	0	0	0	0	0	1	0	0	0	1
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	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	1	2
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	1	0	0	2	1	0	4
Tot	0	0	0	0	1	1	0	4	3	2	1	12

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 12
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	3	4	3	1	0	0	11
NNE	0	0	0	0	1	1	0	3	0	0	0	5
NE	0	0	0	0	0	0	1	6	3	0	0	10
ENE	0	0	0	0	0	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	1	0	0	4	2	4	0	0	11
SE	0	0	0	1	1	2	6	3	1	0	0	14
SSE	0	0	0	0	1	0	0	0	0	0	0	1
S	0	0	0	0	0	0	0	0	0	1	0	1
SSW	0	0	0	0	0	0	0	0	0	0	2	2
SW	0	0	0	0	1	0	2	0	0	0	2	5
WSW	0	0	0	0	3	2	2	5	2	0	0	14
W	0	0	0	0	0	0	0	0	3	0	0	3
WNW	0	0	0	0	0	0	0	2	4	4	3	13
NW	0	0	0	0	0	2	3	3	0	1	0	9
NNW	0	0	0	0	0	0	0	0	1	2	0	3
Tot	0	0	0	2	7	10	23	27	19	8	7	103

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 103
Hours of Missing Data . . . 0
Hours in Period 2184

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	0	6	8	8	16	18	1	0	58
NNE	0	0	0	4	8	7	18	14	21	1	0	73
NE	0	0	0	5	8	17	24	39	33	8	0	134
ENE	0	0	0	2	16	13	17	18	10	1	0	77
E	0	0	0	3	12	8	7	7	10	11	1	59
ESE	0	1	0	5	7	7	10	8	9	12	6	65
SE	0	0	1	2	11	12	12	10	10	4	6	68
SSE	0	0	0	2	8	4	8	9	13	8	6	58
S	0	0	2	3	3	4	5	10	18	15	8	68
SSW	0	0	1	1	2	12	12	4	16	5	5	58
SW	0	0	0	2	2	3	4	6	7	10	4	38
WSW	0	0	1	2	5	9	8	7	10	12	1	55
W	0	1	0	1	2	4	10	5	13	3	1	40
WNW	0	0	0	0	5	5	12	13	32	17	5	89
NW	0	0	1	3	5	5	5	10	16	25	19	89
NNW	0	0	1	5	6	5	3	2	18	11	6	57
Tot	0	2	8	40	106	123	163	178	254	144	68	1086

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1086
Hours of Missing Data . . . 0
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	1	8	6	5	4	0	0	24
NNE	0	0	0	0	2	11	4	4	9	0	0	30
NE	0	0	1	0	4	5	7	8	5	1	0	31
ENE	0	0	1	1	9	13	9	12	4	0	0	49
E	0	0	1	2	1	7	12	11	24	4	0	62
ESE	0	1	0	0	2	6	10	9	22	24	0	74
SE	0	0	0	1	3	4	12	7	6	0	0	33
SSE	0	0	0	0	3	7	5	6	19	2	0	42
S	0	0	0	1	3	5	10	10	29	19	8	85
SSW	0	0	0	0	2	4	5	6	25	2	3	47
SW	0	0	0	0	0	6	7	5	11	4	6	39
WSW	0	0	0	2	5	6	3	4	6	8	4	38
W	0	0	0	2	2	6	9	8	12	7	1	47
WNW	0	0	0	1	6	5	6	2	12	7	1	40
NW	0	1	0	2	4	3	3	7	16	3	1	40
NNW	0	0	0	0	4	3	6	10	14	1	0	38
Tot	0	2	3	12	51	99	114	114	218	82	24	719

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 719
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	1	0	5	2	0	0	8
NNE	0	0	0	0	0	0	0	2	1	0	0	3
NE	0	0	2	0	1	1	0	0	0	0	0	4
ENE	0	0	0	2	1	0	0	0	0	0	0	3
E	0	0	1	0	0	2	3	0	2	0	0	8
ESE	0	0	0	0	2	1	1	3	3	1	0	11
SE	0	0	0	0	1	0	2	5	6	0	0	14
SSE	0	0	0	1	2	5	2	2	4	0	0	16
S	0	1	0	1	0	2	2	4	2	2	0	14
SSW	0	0	0	0	1	2	2	1	9	3	0	18
SW	0	0	0	2	1	2	5	5	6	5	0	26
WSW	0	1	0	0	1	2	0	0	12	4	0	20
W	0	0	1	2	2	5	3	5	9	1	0	28
WNW	0	0	3	1	2	4	0	7	1	0	0	18
NW	0	0	0	2	1	0	1	2	0	0	0	6
NNW	0	0	0	1	0	1	4	3	6	0	0	15
Tot	0	2	7	12	15	28	25	44	63	16	0	212

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 212
Hours of Missing Data . . . 0
Hours in Period 2184

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Apr - Jun for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	1	0	0	0	0	0	0	0	0	1
NE	0	0	1	0	0	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	2	1	0	0	0	0	3
ESE	0	0	0	0	3	0	0	0	0	0	0	3
SE	0	0	1	0	0	0	0	1	2	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	1	1	2	0	0	0	0	4
SW	0	0	0	0	0	0	1	0	0	0	0	1
WSW	0	0	2	0	0	0	1	0	1	0	0	4
W	0	0	1	1	1	1	0	2	5	0	0	11
WNW	0	0	0	1	1	1	3	2	4	0	0	12
NW	0	1	0	0	0	2	0	1	0	0	0	4
NNW	0	1	0	0	0	0	2	0	0	0	0	3
Tot	0	2	6	2	6	7	10	6	12	0	0	51

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 51
Hours of Missing Data . . . 0
Hours in Period 2184

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	7	10	15	19	19	12	12	1	0	0	95
NNE	0	4	6	20	27	18	20	14	2	1	0	112
NE	0	8	12	22	60	35	13	3	0	0	0	153
ENE	1	8	13	17	53	8	1	0	0	0	0	101
E	0	7	10	13	46	16	6	0	0	0	0	98
ESE	1	11	16	13	17	24	11	3	0	0	0	96
SE	0	7	12	14	31	34	8	1	0	0	0	107
SSE	0	8	10	27	73	50	9	1	0	0	0	178
S	0	12	26	35	80	30	32	17	4	0	0	236
SSW	0	14	34	27	42	40	31	24	7	0	0	219
SW	1	15	39	38	45	25	15	5	4	0	0	187
WSW	0	16	19	17	40	30	12	0	0	0	0	134
W	0	13	25	12	46	22	15	12	13	0	0	158
WNW	1	17	16	14	29	21	13	4	0	0	0	115
NW	0	16	31	13	26	14	2	0	0	0	0	102
NNW	1	10	21	18	29	16	9	1	0	0	0	105
Tot	5	173	300	315	663	402	209	97	31	1	0	2196

Hours of Calm 7
Hours of Variable Direction 0
Hours of Valid Data 2203
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	1	0	0	0	1
NE	0	0	0	0	0	1	1	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	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	0	0	0	0
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	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	1	0	0	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	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	1	2	2	1	0	0	0	6

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 6
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	1	0	0	0	1
NE	0	0	0	0	0	1	1	0	0	0	0	2
ENE	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	1	0	2	0	0	0	0	3
ESE	0	0	0	0	0	1	1	0	0	0	0	2
SE	0	0	0	0	0	0	1	0	0	0	0	1
SSE	0	0	0	0	3	0	0	0	0	0	0	3
S	0	0	0	0	1	0	0	0	0	0	0	1
SSW	0	0	0	0	0	0	0	1	0	0	0	1
SW	0	0	0	0	0	3	1	1	0	0	0	5
WSW	0	0	0	0	0	3	0	0	0	0	0	3
W	0	0	0	0	0	1	0	0	0	0	0	1
WNW	0	0	0	0	0	3	0	0	0	0	0	3
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	1	4	0	0	0	0	0	5
Tot	0	0	0	0	6	16	6	3	0	0	0	31

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 31
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	1	0	0	0	0	0	1
NNE	0	0	0	1	0	1	1	0	0	0	0	3
NE	0	0	0	0	5	2	0	0	0	0	0	7
ENE	0	0	0	0	1	2	0	0	0	0	0	3
E	0	0	1	0	3	0	1	0	0	0	0	5
ESE	0	0	0	0	0	0	1	0	0	0	0	1
SE	0	0	0	0	0	2	3	0	0	0	0	5
SSE	0	0	0	0	5	0	0	0	0	0	0	5
S	0	0	0	0	1	1	1	0	0	0	0	3
SSW	0	0	0	0	3	2	1	0	1	0	0	7
SW	0	0	0	0	0	1	1	0	0	0	0	2
WSW	0	0	0	0	2	4	1	0	0	0	0	7
W	0	0	0	0	0	0	1	0	4	0	0	5
WNW	0	0	0	0	0	2	1	1	0	0	0	4
NW	0	0	0	0	0	0	1	0	0	0	0	1
NNW	0	0	0	0	2	2	0	0	0	0	0	4
Tot	0	0	1	1	22	20	13	1	5	0	0	63

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 63
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	3	4	7	4	6	0	0	0	24
NNE	0	1	3	5	5	7	4	4	1	0	0	30
NE	0	0	2	7	13	13	5	2	0	0	0	42
ENE	0	1	2	2	14	3	0	0	0	0	0	22
E	0	1	1	1	13	11	2	0	0	0	0	29
ESE	0	1	4	2	3	2	5	3	0	0	0	20
SE	0	1	5	4	6	10	3	0	0	0	0	29
SSE	0	0	1	9	21	14	8	0	0	0	0	53
S	0	0	5	13	19	19	11	13	3	0	0	83
SSW	0	2	5	11	11	23	17	18	4	0	0	91
SW	0	2	6	8	11	10	9	2	0	0	0	48
WSW	0	1	10	6	20	16	9	0	0	0	0	62
W	0	2	4	7	22	9	6	9	8	0	0	67
WNW	0	1	1	7	8	10	6	1	0	0	0	34
NW	0	0	4	4	10	7	1	0	0	0	0	26
NNW	0	0	2	2	10	4	5	1	0	0	0	24
Tot	0	13	55	91	190	165	95	59	16	0	0	684

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 684
Hours of Missing Data . . . 5
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	4	9	8	10	8	6	1	0	0	47
NNE	0	0	3	12	19	10	15	8	1	1	0	69
NE	0	2	5	12	39	18	6	1	0	0	0	83
ENE	0	3	8	14	38	3	1	0	0	0	0	67
E	0	3	6	12	28	5	0	0	0	0	0	54
ESE	0	2	6	5	10	19	4	0	0	0	0	46
SE	0	0	2	4	10	15	0	1	0	0	0	32
SSE	0	1	2	13	25	35	1	1	0	0	0	78
S	0	4	8	14	44	10	20	4	1	0	0	105
SSW	0	4	12	8	24	14	11	5	2	0	0	80
SW	0	4	8	11	22	10	4	2	3	0	0	64
WSW	0	3	4	5	14	5	2	0	0	0	0	33
W	0	0	7	3	20	11	8	3	1	0	0	53
WNW	0	4	10	6	17	6	6	2	0	0	0	51
NW	0	2	10	3	15	7	0	0	0	0	0	37
NNW	0	2	6	4	10	6	4	0	0	0	0	32
Tot	0	35	101	135	343	184	90	33	9	1	0	931

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 931
Hours of Missing Data . . . 5
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	2	4	2	7	1	0	0	0	0	0	16
NNE	0	2	0	2	3	0	0	0	0	0	0	7
NE	0	5	5	3	3	0	0	0	0	0	0	16
ENE	1	3	3	1	0	0	0	0	0	0	0	8
E	0	3	2	0	1	0	0	0	0	0	0	6
ESE	0	5	5	5	4	2	0	0	0	0	0	21
SE	0	1	3	6	13	6	1	0	0	0	0	30
SSE	0	7	6	4	18	1	0	0	0	0	0	36
S	0	5	12	8	14	0	0	0	0	0	0	39
SSW	0	5	10	8	4	1	2	0	0	0	0	30
SW	1	6	20	14	4	0	0	0	1	0	0	46
WSW	0	6	3	6	1	0	0	0	0	0	0	16
W	0	5	12	2	4	1	0	0	0	0	0	24
WNW	1	9	3	1	4	0	0	0	0	0	0	18
NW	0	9	12	6	1	0	0	0	0	0	0	28
NNW	1	5	10	11	6	0	0	0	0	0	0	33
Tot	4	78	110	79	87	12	3	0	1	0	0	374

Hours of Calm 4
Hours of Variable Direction 0
Hours of Valid Data 378
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	4	2	1	0	0	0	0	0	0	0	7
NNE	0	1	0	0	0	0	0	0	0	0	0	1
NE	0	1	0	0	0	0	0	0	0	0	0	1
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	1	3	1	1	0	0	0	0	0	0	0	6
SE	0	5	2	0	2	1	0	0	0	0	0	10
SSE	0	0	1	1	0	0	0	0	0	0	0	2
S	0	3	1	0	1	0	0	0	0	0	0	5
SSW	0	3	7	0	0	0	0	0	0	0	0	10
SW	0	3	5	5	8	1	0	0	0	0	0	22
WSW	0	6	2	0	3	1	0	0	0	0	0	12
W	0	6	2	0	0	0	0	0	0	0	0	8
WNW	0	3	2	0	0	0	0	0	0	0	0	5
NW	0	5	5	0	0	0	0	0	0	0	0	10
NNW	0	3	3	1	0	0	0	0	0	0	0	7
Tot	1	47	33	9	14	3	0	0	0	0	0	107

Hours of Calm 3
Hours of Variable Direction 0
Hours of Valid Data 110
Hours of Missing Data . . . 5
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	3	7	7	17	18	11	11	23	1	0	98
NNE	0	3	6	4	25	21	10	20	15	1	1	106
NE	0	2	3	10	21	35	34	24	18	0	0	147
ENE	1	9	7	17	37	33	17	0	1	0	0	122
E	1	4	7	5	19	48	26	8	1	0	0	119
ESE	0	3	9	5	22	20	13	16	10	0	0	98
SE	0	4	8	5	11	15	23	17	11	0	0	94
SSE	0	1	8	9	39	47	53	18	0	0	0	175
S	0	1	4	12	51	46	41	39	27	4	0	225
SSW	0	3	5	15	47	56	46	33	38	3	0	246
SW	1	2	10	17	39	34	28	24	11	3	2	171
WSW	0	1	5	16	40	39	32	17	9	1	0	160
W	0	3	9	16	34	16	25	18	18	11	0	150
WNW	0	3	5	2	30	14	29	17	14	4	0	118
NW	0	4	4	4	20	20	22	10	5	0	0	89
NNW	0	5	4	11	23	24	8	9	1	0	0	85
Tot	3	51	101	155	475	486	418	281	202	28	3	2203

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 2203
Hours of Missing Data . . . 5
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	1	0	0	1
NE	0	0	0	0	0	0	1	1	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	1	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	0	0	0	0
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	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	1	0	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	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	1	0	2	2	1	0	0	6

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 6
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0	0	1	0	0	1
NE	0	0	0	0	0	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	2	0	2	0	0	0	4
SE	0	0	0	0	0	0	1	1	0	0	0	2
SSE	0	0	0	0	1	2	0	0	0	0	0	3
S	0	0	0	0	1	0	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	1	1	1	2	0	0	5
WSW	0	0	0	0	0	1	2	0	0	0	0	3
W	0	0	0	0	0	0	1	0	0	0	0	1
WNW	0	0	0	0	0	0	3	1	0	0	0	4
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	1	2	1	0	0	0	0	4
Tot	0	0	0	0	3	8	11	6	3	0	0	31

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 31
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	1	0	2	0	1	0	0	4
NE	0	0	0	0	1	5	1	0	0	0	0	7
ENE	0	0	0	0	0	1	2	0	0	0	0	3
E	0	0	1	0	0	2	0	0	0	0	0	3
ESE	0	0	0	0	0	1	0	2	0	0	0	3
SE	0	0	0	0	0	1	2	1	0	0	0	4
SSE	0	0	0	0	3	2	1	0	0	0	0	6
S	0	0	0	0	0	2	0	0	0	0	0	2
SSW	0	0	0	0	2	3	0	1	0	0	0	6
SW	0	0	0	0	0	1	0	2	0	1	0	4
WSW	0	0	0	0	1	2	3	1	0	0	0	7
W	0	0	0	0	0	0	0	0	0	3	0	3
WNW	0	0	0	0	0	0	2	2	1	1	0	6
NW	0	0	0	0	0	0	0	1	0	0	0	1
NNW	0	0	0	0	0	3	1	0	0	0	0	4
Tot	0	0	1	0	8	23	14	10	2	5	0	63

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 63
Hours of Missing Data . . . 5
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	2	3	3	4	4	11	0	0	27
NNE	0	0	1	1	5	4	4	3	3	0	0	21
NE	0	1	0	3	6	10	8	6	7	0	0	41
ENE	0	2	0	5	4	10	5	0	0	0	0	26
E	0	1	1	0	4	13	7	5	1	0	0	32
ESE	0	0	2	0	6	5	1	5	5	0	0	24
SE	0	0	5	2	4	4	6	2	0	0	0	23
SSE	0	0	4	5	16	15	12	4	0	0	0	56
S	0	0	2	9	20	8	11	11	11	2	0	74
SSW	0	0	3	9	12	18	16	11	24	2	0	95
SW	0	1	6	7	7	7	9	11	3	0	0	51
WSW	0	1	2	9	12	14	9	4	5	0	0	56
W	0	2	5	6	12	8	9	7	9	7	0	65
WNW	0	0	2	2	14	6	6	3	6	2	0	41
NW	0	0	3	2	3	8	10	3	2	0	0	31
NNW	0	0	1	3	8	5	2	2	0	0	0	21
Tot	0	8	37	65	136	138	119	81	87	13	0	684

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 684
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	4	1	7	6	1	6	12	1	0	38
NNE	0	0	0	1	12	13	3	13	9	1	1	53
NE	0	0	0	2	10	18	22	16	11	0	0	79
ENE	0	1	5	6	28	21	9	0	1	0	0	71
E	0	2	2	4	11	32	19	2	0	0	0	72
ESE	0	0	3	3	13	9	9	7	5	0	0	49
SE	0	1	1	3	3	1	10	9	2	0	0	30
SSE	0	1	1	2	9	18	33	13	0	0	0	77
S	0	0	1	2	17	25	19	15	16	2	0	97
SSW	0	2	1	2	18	20	21	17	13	1	0	95
SW	1	0	1	4	14	11	16	7	6	2	2	64
WSW	0	0	0	3	4	13	11	5	3	0	0	39
W	0	0	0	3	4	5	10	10	9	1	0	42
WNW	0	2	1	0	7	5	14	10	7	1	0	47
NW	0	1	1	0	10	10	8	6	3	0	0	39
NNW	0	2	0	6	9	11	3	7	1	0	0	39
Tot	1	12	21	42	176	218	208	143	98	9	3	931

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 931
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	2	3	4	7	9	5	1	0	0	0	31
NNE	0	3	3	2	6	3	1	4	0	0	0	22
NE	0	0	1	1	4	2	2	0	0	0	0	10
ENE	0	4	1	5	5	1	0	0	0	0	0	16
E	1	0	2	1	3	1	0	0	0	0	0	8
ESE	0	0	4	2	3	3	3	0	0	0	0	15
SE	0	2	1	0	3	6	4	4	6	0	0	26
SSE	0	0	2	0	8	10	7	1	0	0	0	28
S	0	1	1	0	5	10	11	13	0	0	0	41
SSW	0	0	1	3	12	14	9	3	1	0	0	43
SW	0	1	3	4	14	11	2	2	0	0	0	37
WSW	0	0	2	4	15	6	3	0	0	1	0	31
W	0	1	2	5	13	3	3	1	0	0	0	28
WNW	0	1	1	0	5	3	4	1	0	0	0	15
NW	0	2	0	1	5	2	4	0	0	0	0	14
NNW	0	2	2	0	5	3	1	0	0	0	0	13
Tot	1	19	29	32	113	87	59	30	7	1	0	378

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 378
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	0	0	0	0	0	0	0	0	0	1
NNE	0	0	2	0	1	1	0	0	0	0	0	4
NE	0	1	2	4	0	0	0	0	0	0	0	7
ENE	1	2	1	1	0	0	0	0	0	0	0	5
E	0	1	1	0	1	0	0	0	0	0	0	3
ESE	0	3	0	0	0	0	0	0	0	0	0	3
SE	0	1	1	0	1	3	0	0	3	0	0	9
SSE	0	0	1	2	1	0	0	0	0	0	0	4
S	0	0	0	1	8	1	0	0	0	0	0	10
SSW	0	1	0	1	3	1	0	1	0	0	0	7
SW	0	0	0	2	4	3	0	1	0	0	0	10
WSW	0	0	1	0	8	3	3	7	1	0	0	23
W	0	0	2	2	5	0	2	0	0	0	0	11
WNW	0	0	1	0	4	0	0	0	0	0	0	5
NW	0	1	0	1	2	0	0	0	0	0	0	4
NNW	0	1	1	2	0	0	0	0	0	0	0	4
Tot	1	12	13	16	38	12	5	9	4	0	0	110

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 110
Hours of Missing Data . . . 5
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	2	8	13	10	12	11	24	12	2	95
NNE	0	2	1	4	14	13	18	12	31	19	2	116
NE	0	3	2	9	12	23	31	28	31	5	0	144
ENE	0	4	8	4	16	28	29	16	1	1	0	107
E	0	5	3	7	8	33	41	20	13	0	0	130
ESE	0	3	8	6	20	14	21	9	19	5	0	105
SE	0	2	9	1	15	15	15	12	26	9	0	104
SSE	0	4	2	10	25	29	22	35	37	1	0	165
S	0	4	7	5	25	25	31	40	67	26	2	232
SSW	0	4	3	11	26	29	36	38	79	20	1	247
SW	0	2	7	8	11	21	32	28	25	4	3	141
WSW	0	1	4	10	39	23	35	31	30	3	1	177
W	0	3	5	8	26	29	14	15	40	17	10	167
WNW	0	0	4	5	11	13	7	17	34	9	1	101
NW	0	1	3	8	11	21	13	18	17	1	0	93
NNW	0	1	2	4	9	17	18	9	14	0	0	74
Tot	0	40	70	108	281	343	375	339	488	132	22	2198

Hours of Calm 5
Hours of Variable Direction 0
Hours of Valid Data 2203
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	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	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	0	0	0	0	0	0	0	0	0

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 0
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	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	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	0	0	0	0	0	0	0	0	0

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 0
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0	0	1	1	0	2
NE	0	0	0	0	1	2	1	2	0	0	0	6
ENE	0	0	0	0	0	0	4	0	0	0	0	4
E	0	0	0	1	0	0	0	2	0	0	0	3
ESE	0	0	0	0	0	2	0	2	2	0	0	6
SE	0	0	0	0	0	0	0	2	0	0	0	2
SSE	0	0	0	0	2	1	0	0	0	0	0	3
S	0	0	0	0	0	1	0	0	0	0	0	1
SSW	0	0	0	0	0	0	1	0	1	1	0	3
SW	0	0	0	0	0	0	0	1	2	0	0	3
WSW	0	0	0	0	0	1	6	3	0	0	0	10
W	0	0	0	0	0	1	1	1	0	1	2	6
WNW	0	0	0	0	0	0	1	2	0	0	0	3
NW	0	0	0	0	0	0	0	1	0	0	0	1
NNW	0	0	0	0	1	4	1	0	0	0	0	6
Tot	0	0	0	1	4	12	16	16	6	3	2	60

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 60
Hours of Missing Data . . . 5
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	3	5	4	6	4	11	5	0	39
NNE	0	0	0	2	6	5	9	6	21	6	1	56
NE	0	2	0	5	7	11	16	20	17	4	0	82
ENE	0	1	1	3	10	12	15	2	0	0	0	44
E	0	0	0	0	4	21	21	7	6	0	0	59
ESE	0	0	1	2	6	4	9	3	9	0	0	34
SE	0	1	6	1	8	6	8	6	2	1	0	39
SSE	0	0	1	5	19	20	6	18	4	0	0	73
S	0	0	5	4	20	13	16	17	27	7	0	109
SSW	0	2	1	8	16	17	23	10	35	11	0	123
SW	0	1	5	6	7	4	14	12	13	0	1	63
WSW	0	0	1	7	19	7	13	8	14	1	0	70
W	0	3	3	3	14	12	4	7	20	8	7	81
WNW	0	0	4	3	7	10	0	11	8	7	1	51
NW	0	1	2	4	5	9	6	9	2	0	0	38
NNW	0	1	1	2	3	7	5	2	6	0	0	27
Tot	0	12	32	58	156	162	171	142	195	50	10	988

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 988
Hours of Missing Data . . . 5
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	4	4	4	3	3	6	7	2	33
NNE	0	0	0	1	4	3	7	2	7	10	1	35
NE	0	0	0	2	2	9	13	6	13	1	0	46
ENE	0	2	3	0	5	15	9	13	1	1	0	49
E	0	1	2	5	2	10	18	11	7	0	0	56
ESE	0	1	4	3	14	8	11	4	6	4	0	55
SE	0	0	1	0	5	4	4	3	15	4	0	36
SSE	0	1	1	3	4	6	10	16	27	1	0	69
S	0	1	0	0	4	8	10	18	24	11	2	78
SSW	0	0	1	1	5	9	10	22	32	6	1	87
SW	0	0	2	0	1	10	12	7	8	4	2	46
WSW	0	0	1	2	14	6	11	13	7	1	0	55
W	0	0	1	2	7	8	6	6	17	7	1	55
WNW	0	0	0	1	1	2	4	4	25	2	0	39
NW	0	0	1	1	1	8	4	7	10	1	0	33
NNW	0	0	1	2	2	3	10	4	7	0	0	29
Tot	0	6	18	27	75	113	142	139	212	60	9	801

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 801
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	1	1	3	2	2	4	7	0	0	21
NNE	0	2	1	1	4	3	2	4	2	2	0	21
NE	0	1	0	2	2	0	1	0	1	0	0	7
ENE	0	1	4	1	1	1	1	1	0	0	0	10
E	0	4	1	1	2	2	2	0	0	0	0	12
ESE	0	2	3	1	0	0	1	0	2	1	0	10
SE	0	1	2	0	2	4	2	1	9	4	0	25
SSE	0	3	0	2	0	2	4	1	6	0	0	18
S	0	3	2	1	1	3	4	4	16	8	0	42
SSW	0	2	1	2	5	3	2	4	11	2	0	32
SW	0	1	0	2	3	5	6	8	1	0	0	26
WSW	0	1	2	1	6	8	5	7	9	1	1	41
W	0	0	1	3	5	8	3	1	3	1	0	25
WNW	0	0	0	1	2	1	2	0	1	0	0	7
NW	0	0	0	3	5	4	3	1	5	0	0	21
NNW	0	0	0	0	3	3	2	3	1	0	0	12
Tot	0	22	18	22	44	49	42	39	74	19	1	330

Hours of Calm 2
Hours of Variable Direction 0
Hours of Valid Data 332
Hours of Missing Data . . . 5
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Jul - Sep for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	1	0	0	0	0	0	0	1
NNE	0	0	0	0	0	2	0	0	0	0	0	2
NE	0	0	2	0	0	1	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	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	1	1	0	0	0	0	2
SSE	0	0	0	0	0	0	2	0	0	0	0	2
S	0	0	0	0	0	0	1	1	0	0	0	2
SSW	0	0	0	0	0	0	0	2	0	0	0	2
SW	0	0	0	0	0	2	0	0	1	0	0	3
WSW	0	0	0	0	0	1	0	0	0	0	0	1
W	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	1	0	0	0	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	0	2	0	2	7	4	3	1	0	0	19

Hours of Calm 3
Hours of Variable Direction 0
Hours of Valid Data 22
Hours of Missing Data . . . 5
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

All Stabilities

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	6	7	16	10	9	3	0	0	0	52
NNE	1	2	10	9	15	9	6	6	7	0	0	65
NE	1	4	5	6	20	7	1	0	0	0	0	44
ENE	0	4	5	12	19	1	0	0	0	0	0	41
E	0	3	3	9	31	18	8	3	2	0	0	77
ESE	0	5	5	7	26	36	13	8	10	0	0	110
SE	1	5	10	12	22	21	30	19	3	2	0	125
SSE	0	7	24	20	49	36	32	16	13	4	0	201
S	0	12	15	23	35	38	55	37	37	12	0	264
SSW	0	9	19	19	29	25	15	20	16	10	0	162
SW	0	5	9	26	37	18	20	19	12	0	0	146
WSW	2	8	10	12	25	13	15	9	15	0	0	109
W	0	10	10	25	61	50	68	38	28	5	0	295
WNW	0	10	12	9	41	43	38	21	40	3	0	217
NW	0	6	22	17	34	22	26	9	8	1	0	145
NNW	1	6	21	18	36	31	23	3	1	0	0	140
Tot	6	97	186	231	496	378	359	211	192	37	0	2193

Hours of Calm	12
Hours of Variable Direction	0
Hours of Valid Data	2205
Hours of Missing Data	3
Hours in Period	2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	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	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	1	0	0	0	0	0	0	0	1
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	1	3	0	0	0	0	4
Tot	0	0	0	1	0	1	3	0	0	0	0	5

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 5
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	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	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	1	1	0	0	0	0	2
WSW	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	1	1	0	0	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	1	1	0	0	0	0	2
Tot	0	0	0	0	2	2	3	1	0	0	0	8

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 8
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	2	1	0	0	0	0	3
NNE	0	0	0	0	1	0	0	0	0	0	0	1
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	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	1	0	0	0	1
S	0	0	0	0	0	0	0	1	0	0	0	1
SSW	0	0	0	0	0	1	1	0	0	0	0	2
SW	0	0	0	0	0	1	1	2	0	0	0	4
WSW	0	0	0	0	0	1	0	2	2	0	0	5
W	0	0	0	0	1	1	0	0	1	0	0	3
WNW	0	0	0	0	1	1	0	0	0	0	0	2
NW	0	0	0	0	2	0	1	0	0	0	0	3
NNW	0	0	0	0	0	1	0	0	0	0	0	1
Tot	0	0	0	0	6	8	4	6	3	0	0	27

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 27
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	1	1	1	4	2	0	0	0	10
NNE	0	0	5	4	0	0	2	2	6	0	0	19
NE	0	0	0	1	1	6	1	0	0	0	0	9
ENE	0	0	3	3	0	0	0	0	0	0	0	6
E	0	0	2	1	1	2	0	1	0	0	0	7
ESE	0	0	0	0	3	4	3	4	1	0	0	15
SE	0	1	3	3	3	3	6	1	0	1	0	21
SSE	0	0	1	2	4	2	5	1	1	0	0	16
S	0	1	0	2	8	1	9	13	10	2	0	46
SSW	0	1	1	0	6	7	4	6	5	3	0	33
SW	0	0	1	0	4	6	2	6	4	0	0	23
WSW	0	0	1	6	12	10	9	4	4	0	0	46
W	0	0	2	7	8	10	23	9	9	1	0	69
WNW	0	0	2	2	9	15	7	7	10	2	0	54
NW	0	1	2	4	10	7	11	0	0	0	0	35
NNW	0	0	0	1	5	10	4	1	0	0	0	21
Tot	0	4	24	37	75	84	90	57	50	9	0	430

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 430
Hours of Missing Data . . . 3
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	5	12	5	4	1	0	0	0	28
NNE	0	0	4	5	13	9	4	4	1	0	0	40
NE	0	0	4	3	16	1	0	0	0	0	0	24
ENE	0	2	0	7	17	1	0	0	0	0	0	27
E	0	0	0	7	29	16	8	2	2	0	0	64
ESE	0	0	3	3	15	26	9	4	9	0	0	69
SE	0	0	1	4	5	13	21	18	3	1	0	66
SSE	0	1	8	5	32	26	25	14	12	4	0	127
S	0	5	2	11	15	30	43	23	27	10	0	166
SSW	0	1	6	1	9	13	9	14	11	7	0	71
SW	0	1	3	4	8	9	14	11	8	0	0	58
WSW	0	4	1	4	9	2	6	3	9	0	0	38
W	0	4	4	12	51	38	44	28	18	4	0	203
WNW	0	4	5	5	22	27	31	14	30	1	0	139
NW	0	2	8	6	14	14	14	9	8	1	0	76
NNW	1	2	10	8	19	14	14	2	1	0	0	71
Tot	1	26	60	90	286	244	246	147	139	28	0	1267

Hours of Calm 6
Hours of Variable Direction 0
Hours of Valid Data 1273
Hours of Missing Data . . . 3
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	3	1	2	2	0	0	0	0	0	8
NNE	1	1	1	0	1	0	0	0	0	0	0	4
NE	0	1	1	1	1	0	0	0	0	0	0	4
ENE	0	1	1	2	1	0	0	0	0	0	0	5
E	0	1	1	1	1	0	0	0	0	0	0	4
ESE	0	1	2	2	5	6	1	0	0	0	0	17
SE	0	2	4	5	8	4	3	0	0	0	0	26
SSE	0	5	10	11	12	8	2	0	0	0	0	48
S	0	4	9	7	9	6	3	0	0	0	0	38
SSW	0	4	7	14	12	4	1	0	0	0	0	42
SW	0	4	4	13	13	1	2	0	0	0	0	37
WSW	1	1	6	1	4	0	0	0	0	0	0	13
W	0	4	2	6	1	1	0	0	0	0	0	14
WNW	0	4	4	1	9	0	0	0	0	0	0	18
NW	0	2	6	5	8	1	0	0	0	0	0	22
NNW	0	2	8	8	12	4	1	0	0	0	0	35
Tot	2	37	69	78	99	37	13	0	0	0	0	335

Hours of Calm 2
Hours of Variable Direction 0
Hours of Valid Data 337
Hours of Missing Data . . . 3
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 35ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	1	0	0	0	0	0	0	0	0	2
NNE	0	1	0	0	0	0	0	0	0	0	0	1
NE	1	3	0	1	0	0	0	0	0	0	0	5
ENE	0	1	1	0	1	0	0	0	0	0	0	3
E	0	2	0	0	0	0	0	0	0	0	0	2
ESE	0	4	0	2	3	0	0	0	0	0	0	9
SE	1	2	2	0	6	1	0	0	0	0	0	12
SSE	0	1	5	2	1	0	0	0	0	0	0	9
S	0	2	4	3	3	1	0	0	0	0	0	13
SSW	0	3	5	4	2	0	0	0	0	0	0	14
SW	0	0	1	9	12	0	0	0	0	0	0	22
WSW	1	3	2	1	0	0	0	0	0	0	0	7
W	0	2	2	0	0	0	0	0	0	0	0	4
WNW	0	2	1	0	0	0	0	0	0	0	0	3
NW	0	1	6	2	0	0	0	0	0	0	0	9
NNW	0	2	3	1	0	0	0	0	0	0	0	6
Tot	3	30	33	25	28	2	0	0	0	0	0	121

Hours of Calm 4
Hours of Variable Direction 0
Hours of Valid Data 125
Hours of Missing Data . . . 3
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

All Stabilities

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	6	2	4	24	17	17	9	14	0	0	93
NNE	0	0	4	7	13	14	2	10	8	2	0	60
NE	1	0	5	4	12	13	12	2	4	4	0	57
ENE	0	1	4	2	10	11	3	0	0	0	0	31
E	0	0	4	2	13	22	25	8	7	1	0	82
ESE	0	0	2	4	11	17	19	25	13	8	1	100
SE	0	1	2	5	9	11	17	25	35	4	1	110
SSE	0	1	3	5	11	17	29	37	33	5	8	149
S	1	3	3	6	20	27	34	52	67	31	15	259
SSW	0	2	6	5	24	26	34	33	49	11	15	205
SW	0	2	2	5	27	30	33	22	26	17	5	169
WSW	0	0	3	3	18	24	29	10	28	15	5	135
W	0	2	3	4	22	43	42	33	54	17	8	228
WNW	0	2	6	4	14	27	53	47	68	29	16	266
NW	0	3	2	8	14	22	23	28	21	10	4	135
NNW	0	1	3	7	18	31	22	26	15	3	0	126
Tot	2	24	54	75	260	352	394	367	442	157	78	2205

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 2205
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	1	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	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	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	1	0	0	0	0	0	0	1
NW	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	1	2	0	0	0	3
Tot	0	0	0	0	1	0	1	3	0	0	0	5

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 5
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	1	0	0	0	0	0	1
NE	0	0	0	0	0	1	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	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	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	1	0	1	0	0	2
WSW	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	2	0	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	1	1	0	0	0	2
Tot	0	0	0	0	0	2	2	1	3	0	0	8

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 8
Hours of Missing Data . . . 3
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	1	1	0	1	0	0	3
NNE	0	0	0	0	0	1	0	0	0	0	0	1
NE	0	0	0	0	0	1	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	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	0	0	0	0	2	0	0	2
SSW	0	0	0	0	0	1	0	0	0	0	0	1
SW	0	0	0	0	0	0	2	1	1	0	0	4
WSW	0	0	0	0	0	0	0	0	2	2	0	4
W	0	0	0	0	0	1	1	0	1	0	0	3
WNW	0	0	0	0	0	1	1	0	1	0	0	3
NW	0	0	0	0	0	3	0	1	0	0	0	4
NNW	0	0	0	0	0	1	0	0	0	0	0	1
Tot	0	0	0	0	0	10	5	2	8	2	0	27

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 27
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	1	2	2	0	5	0	0	10
NNE	0	0	2	4	1	0	0	1	3	2	0	13
NE	0	0	2	2	2	0	6	0	2	3	0	17
ENE	0	0	2	2	3	0	0	0	0	0	0	7
E	0	0	1	0	1	0	2	0	1	0	0	5
ESE	0	0	0	1	0	1	2	5	4	1	0	14
SE	0	1	1	3	2	4	3	3	2	0	0	19
SSE	0	0	0	1	5	1	2	3	0	1	1	14
S	0	1	0	2	4	2	0	8	15	6	2	40
SSW	0	1	1	0	3	7	5	5	13	2	3	40
SW	0	0	1	1	1	5	2	3	7	4	0	24
WSW	0	0	1	1	12	4	10	4	9	5	1	47
W	0	0	0	2	6	6	9	14	12	5	0	54
WNW	0	0	2	0	6	6	11	14	10	7	7	63
NW	0	1	2	4	6	9	5	10	2	0	2	41
NNW	0	0	0	0	2	8	6	2	4	0	0	22
Tot	0	4	15	23	55	55	65	72	89	36	16	430

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 430
Hours of Missing Data . . . 3
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	4	1	1	12	11	7	5	6	0	0	47
NNE	0	0	1	1	8	10	1	9	5	0	0	35
NE	0	0	1	2	6	9	6	2	2	1	0	29
ENE	0	0	2	0	5	11	3	0	0	0	0	21
E	0	0	0	1	11	18	21	8	6	1	0	66
ESE	0	0	0	1	6	12	14	16	9	7	1	66
SE	0	0	1	1	3	5	9	12	30	4	1	66
SSE	0	1	3	3	2	11	17	23	31	4	7	102
S	0	1	1	2	10	16	25	40	42	25	13	175
SSW	0	0	4	2	7	5	14	14	31	9	12	98
SW	0	0	0	1	5	4	6	7	16	12	5	56
WSW	0	0	2	2	0	4	6	2	14	8	4	42
W	0	2	1	1	10	27	27	19	38	12	8	145
WNW	0	2	2	3	6	17	35	32	57	22	9	185
NW	0	2	0	2	6	7	12	15	19	10	2	75
NNW	0	0	3	5	12	11	7	15	9	3	0	65
Tot	0	12	22	28	109	178	210	219	315	118	62	1273

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1273
Hours of Missing Data . . . 3
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	0	2	6	3	7	3	2	0	0	24
NNE	0	0	1	1	3	2	1	0	0	0	0	8
NE	1	0	0	0	3	2	0	0	0	0	0	6
ENE	0	0	0	0	2	0	0	0	0	0	0	2
E	0	0	0	1	1	4	1	0	0	0	0	7
ESE	0	0	1	1	3	3	2	4	0	0	0	14
SE	0	0	0	0	3	2	5	6	2	0	0	18
SSE	0	0	0	1	2	3	3	8	2	0	0	19
S	0	1	0	2	3	7	8	4	8	0	0	33
SSW	0	1	1	1	12	10	9	13	3	0	0	50
SW	0	0	0	1	20	17	15	9	1	1	0	64
WSW	0	0	0	0	3	10	4	4	1	0	0	22
W	0	0	2	1	4	5	4	0	1	0	0	17
WNW	0	0	1	0	1	3	6	1	0	0	0	12
NW	0	0	0	1	2	3	5	2	0	0	0	13
NNW	0	0	0	1	4	9	6	6	2	0	0	28
Tot	1	3	6	13	72	83	76	60	22	1	0	337

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 337
Hours of Missing Data . . . 3
Hours in Period 2208

METEOROLOGICAL DATA

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 150ft Stability 150ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	1	1	5	0	0	0	0	0	0	8
NNE	0	0	0	1	1	0	0	0	0	0	0	2
NE	0	0	2	0	1	0	0	0	0	0	0	3
ENE	0	1	0	0	0	0	0	0	0	0	0	1
E	0	0	3	0	0	0	1	0	0	0	0	4
ESE	0	0	1	1	2	1	1	0	0	0	0	6
SE	0	0	0	1	1	0	0	4	1	0	0	7
SSE	0	0	0	0	2	2	7	3	0	0	0	14
S	1	0	2	0	3	2	1	0	0	0	0	9
SSW	0	0	0	2	2	3	6	1	2	0	0	16
SW	0	2	1	2	1	4	7	2	0	0	0	19
WSW	0	0	0	0	3	6	9	0	2	0	0	20
W	0	0	0	0	2	4	1	0	0	0	0	7
WNW	0	0	1	1	0	0	0	0	0	0	0	2
NW	0	0	0	1	0	0	1	0	0	0	0	2
NNW	0	1	0	1	0	2	1	0	0	0	0	5
Tot	1	5	11	11	23	24	35	10	5	0	0	125

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 125
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

All Stabilities

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	3	1	12	13	10	9	31	8	2	90
NNE	0	2	2	4	5	12	11	6	17	10	1	70
NE	0	1	2	4	9	7	11	12	9	0	0	55
ENE	0	1	3	3	6	8	9	6	0	0	0	36
E	0	1	1	1	6	9	16	20	20	5	1	80
ESE	0	1	2	0	8	6	9	18	34	5	8	91
SE	0	2	2	6	6	9	10	20	51	16	4	126
SSE	0	1	1	1	6	10	12	14	53	28	12	138
S	0	0	2	3	12	13	9	33	74	51	50	247
SSW	0	1	5	3	6	8	14	26	56	35	27	181
SW	0	1	1	5	10	7	17	28	62	27	19	177
WSW	0	1	5	4	17	15	23	24	39	25	13	166
W	0	2	2	2	13	27	38	33	64	51	23	255
WNW	0	2	0	5	13	14	28	36	71	41	38	248
NW	0	0	5	3	7	19	13	18	37	17	5	124
NNW	0	0	0	2	6	25	23	16	35	14	0	121
Tot	0	17	36	47	142	202	253	319	653	333	203	2205

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 2205
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class A Extremely Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	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	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	1	0	0	0	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	0	0	0	1	0	0	0	0	0	0	1

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1
Hours of Missing Data . . . 3
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class B Moderately Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
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	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	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	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	0	0	0	0	0	0	0	0	0

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

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class C Slightly Unstable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	1	0	0	0	1
NNE	0	0	0	0	0	1	0	0	0	0	0	1
NE	0	0	0	0	0	1	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	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	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	1	1	1	0	3
WSW	0	0	0	0	0	0	0	0	0	0	2	2
W	0	0	0	0	0	0	3	2	2	1	0	8
WNW	0	0	0	1	0	0	0	2	1	1	0	5
NW	0	0	0	0	0	1	0	1	1	0	0	3
NNW	0	0	0	0	0	0	3	2	1	0	0	6
Tot	0	0	0	1	0	3	6	9	6	3	2	30

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 30
Hours of Missing Data . . . 3
Hours in Period 2208

DRESDEN NUCLEAR POWER STATION
2016 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
January through December 2016

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class D Neutral based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	1	4	7	5	2	9	0	0	29
NNE	0	1	2	4	1	6	2	1	8	7	1	33
NE	0	0	2	4	7	1	6	4	1	0	0	25
ENE	0	0	3	1	5	4	1	2	0	0	0	16
E	0	0	1	0	4	5	11	10	14	5	1	51
ESE	0	0	2	0	3	3	5	8	14	2	8	45
SE	0	1	1	3	2	5	5	10	25	12	2	66
SSE	0	0	1	1	4	6	4	7	22	8	9	62
S	0	0	1	2	3	6	2	19	39	14	28	114
SSW	0	1	1	1	5	7	7	8	18	10	8	66
SW	0	1	0	3	3	2	5	5	11	8	5	43
WSW	0	0	4	3	11	5	6	5	17	19	7	77
W	0	1	0	0	7	24	23	21	46	30	22	174
WNW	0	0	0	2	10	10	19	26	46	34	37	184
NW	0	0	4	2	5	15	8	15	21	13	5	88
NNW	0	0	0	2	3	16	9	6	17	5	0	58
Tot	0	5	23	29	77	122	118	149	308	167	133	1131

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 1131
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class E Slightly Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	1	1	0	5	3	3	2	10	1	0	26
NNE	0	1	0	0	0	2	6	2	7	3	0	21
NE	0	0	0	0	1	4	3	7	8	0	0	23
ENE	0	1	0	1	0	3	7	4	0	0	0	16
E	0	1	0	0	1	4	4	9	6	0	0	25
ESE	0	0	0	0	2	3	4	6	18	2	0	35
SE	0	1	0	2	3	3	3	6	19	3	2	42
SSE	0	1	0	0	1	4	5	3	20	19	3	56
S	0	0	0	0	6	5	5	10	34	33	22	115
SSW	0	0	2	1	1	0	6	12	25	20	19	86
SW	0	0	0	0	6	2	4	6	19	12	13	62
WSW	0	0	0	1	2	5	6	5	5	2	4	30
W	0	1	1	2	4	1	4	5	11	20	1	50
WNW	0	2	0	1	0	3	9	5	20	5	1	46
NW	0	0	1	0	0	2	4	2	11	4	0	24
NNW	0	0	0	0	2	6	5	4	9	5	0	31
Tot	0	9	5	8	34	50	78	88	222	129	65	688

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 688
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class F Moderately Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	1	0	3	3	2	3	12	7	2	33
NNE	0	0	0	0	4	3	3	0	2	0	0	12
NE	0	0	0	0	1	1	2	1	0	0	0	5
ENE	0	0	0	0	1	1	1	0	0	0	0	3
E	0	0	0	0	1	0	1	1	0	0	0	3
ESE	0	1	0	0	1	0	0	4	2	1	0	9
SE	0	0	0	0	0	1	2	4	6	1	0	14
SSE	0	0	0	0	1	0	3	0	6	1	0	11
S	0	0	0	0	1	2	1	4	1	4	0	13
SSW	0	0	1	1	0	1	0	5	12	5	0	25
SW	0	0	1	2	1	3	5	11	24	3	0	50
WSW	0	1	1	0	4	5	11	13	13	3	0	51
W	0	0	1	0	2	1	8	5	3	0	0	20
WNW	0	0	0	1	2	1	0	3	3	1	0	11
NW	0	0	0	0	2	1	1	0	4	0	0	8
NNW	0	0	0	0	0	2	3	3	5	4	0	17
Tot	0	2	5	4	24	25	43	57	93	30	2	285

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 285
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Joint Frequency Distribution

Site:: Dresden Generating Station

Period:: Months Oct - Dec for years 2016 - 2016

Stability Class G Extremely Stable based on Lapse Rate

Elevations:: Winds 300ft Stability 300ft

Wind Direction Sector	Wind Speed Range (m/s) <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	Total
N	0	0	0	0	0	0	0	1	0	0	0	1
NNE	0	0	0	0	0	0	0	3	0	0	0	3
NE	0	1	0	0	0	0	0	0	0	0	0	1
ENE	0	0	0	1	0	0	0	0	0	0	0	1
E	0	0	0	1	0	0	0	0	0	0	0	1
ESE	0	0	0	0	2	0	0	0	0	0	0	2
SE	0	0	1	1	1	0	0	0	1	0	0	4
SSE	0	0	0	0	0	0	0	4	5	0	0	9
S	0	0	1	1	2	0	1	0	0	0	0	5
SSW	0	0	1	0	0	0	1	1	1	0	0	4
SW	0	0	0	0	0	0	3	5	7	3	1	19
WSW	0	0	0	0	0	0	0	1	4	1	0	6
W	0	0	0	0	0	1	0	0	2	0	0	3
WNW	0	0	0	0	0	0	0	0	1	0	0	1
NW	0	0	0	1	0	0	0	0	0	0	0	1
NNW	0	0	0	0	1	1	3	1	3	0	0	9
Tot	0	1	3	5	6	2	8	16	24	4	1	70

Hours of Calm 0
Hours of Variable Direction 0
Hours of Valid Data 70
Hours of Missing Data . . . 3
Hours in Period 2208

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

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

Errata

Document Site Approval Form
Page 1 of 2

97650

AD-AA-101-F-01
Revision 5

See AD-AA-101 for the procedural requirements associated with this Form.
Desktop Instruction available on Intranet or through AD functional area.

Facility: Dresden

Document Number: RW-AA-100 **Revision:** 11

Title: PROCESS CONTROL PROGRAM FOR RADIOACTIVE WASTES

Superseded Documents: N/A ☒ or List:

☐ Check this box if superseding a document containing commitments, notify the Commitment Tracking Coordinator per LS-AA-110 so the CTD can be updated as appropriate.

Environmental Review Applicability – Is an Environmental Review applicable per EN-AA-103? No ☒ or Yes ☐
If Yes, then attach Environmental Review documentation required per EN-AA-103.

Is this a Fleet Standard Document being processed with form AD-AA-101-F-09? No ☐ or Yes ☒ *If yes, then attach the completed form AD-AA-101-F-09, skip the following section, and go to Continuation A.*

N/A

Batch – Are multiple document creations/revisions/cancelations being issued to add/revise/cancel them for similar requirements? **No ☒ or Yes ☐** If Yes, then identify the highest level Document and Issue Type below.

Check only one Document Type:	**Check only one Issue Type:**	**Incorporated Site Items (EC, AR, PCR, etc):** N/A
Level 1 - Continuous Use Procedure ☐	New ☐	
Level 2 - Reference Use Procedure ☐	Revision ☐	
Level 3 - Information Use Procedure ☐	Cancel Document ☐	
T&RM ☐	Cancel Revision ☐	
Form ☐	Non-Permanent ☐	
	Cancel Non-Permanent ☐	
	Editorial Revision ☐	

N/A

Revision Summary:
(Attach additional description if required)

N/A

CONFIRM that **no** commitments (i.e., those steps annotated with CM-X) have been changed or deleted unless evaluated via completion of LS-AA-110 commitment change/deletion form and **INITIAL** [Preparer]:

Preparer _____ (Print) _____ (Date) _____ (Extension)

Validation – Is substantiating this document's usability via mockup, simulated performance, field walk down, or bench top review required? **No ☐ or Yes ☐** *If Yes, then attach validation documentation.*
If Yes, then print name & sign for completed validation: _____

NOS Review – Excluding NDE, ISI, Peer Inspection or Independent Verification, is this document used to perform independent inspection for acceptance (including field installation inspections, fabrication inspections, receipt inspections, new fuel inspection, etc.), or for certification of Inspection personnel? **No ☐ or Yes ☐**
If Yes, then NOS Reviewer to print name & sign for acceptance: _____

N/A

Continuation A *- Is this a T&RM, Form, or Editorial Revision?* ***No ☒ or Yes ☐*** *If yes, then skip the following section and go Continuation B.*

Impact on Operating and Design Margins – N/A ☒ or explain: _____
(Attach additional description if required)

Tracking Number: Exempt per LS-AA-104-1002 (See attached)

☐ **No** ☒ **Yes** **10CFR50.59 Applicable?**
☒ **No** ☐ **Yes** **10CFR72.48 Applicable?**
☒ **No** ☐ **Yes** **Other Regulatory Process Applicable?** **Other Regulatory Process Number:** N/A
☒ **No** ☐ **Yes** **Potential security impact per SY-AA-500-127?** **If Yes, then Security Reviewer acceptance documented by cross discipline review below**
☒ **No** ☐ **Yes** **Surveillance Coordinator Review Required?** **If Yes, then Surveillance Coordinator Review documented by cross discipline review below**

Cross Discipline Reviews: (list below) NPPT, CH

Print	Signature	Date	Discipline or Org.
Louis E. Magers	Louis E Magers	5/26/15	NPPT,CH

Attach additional if req'd

SQR Approval indicates that all required Cross-Disciplinary reviews have been performed and the reviewers have signed this form. This procedure is technically and functionally accurate for all functional areas. (See AD-AA-102)

SQR Approval: Dan Malavskas / Dan Malavskas (Print and Sign) 5-26-15 (Date) _____ (Discipline)

6-17-15

***Continuation B** - Is this a T&RM, or Form? **No** ☒ **or Yes** ☐ If yes, then skip the following section and go Continuation C.*

PORC Required: ☐ No ☒ Yes	If yes, then enter **PORC Number** (after PORC Approved): 06/115
	Tom Wasilko / 6-15-15
	Plant Manager Print and Sign (when required by procedure) — Date

***Continuation C** - Is this an Editorial Revision? **No** ☒ **or Yes** ☐ If yes, then skip the following section and go to Continuation D.*

Applicable Site Contact/Site Change Agents (SME): JAJ
- Responsible for Change Management information in ☒ this form or ☐ HU-AA-1101 Checklist (attached)
- Responsible to shepherd the document through site review, approval/authorization, and implementation.

Affected Functional Area(s) or Individuals:

Print	Signature	Date	Affected FA
Hany, Gabal		5-21-15	**RP**

Attach additional if req'd

N/A

N/A

Resources needed to Implement Change: LOE (Only list, if other than Level of Effort.)
For ongoing impacts, estimate number of Full Time Equivalents (FTE). If additional resources are needed go to HU-AA-1101.

Communication Plan: E-mail (e.g., e-mail, Site Paper, **Supervisor Briefing**, Voice Mail, etc.)

Training Required / Qualifications affected: ☒ **No** ☐ **Yes** If yes, list: _____
(e.g., Supervisory Briefing, Tailgate Briefing, Required Reading, Formal Training, recertification etc.)

Update to information infrastructure (e.g. PassPort, PIMS, EDMS workflows, etc.) required to support implementation (including updated forms loaded into PassPort): Per Admin Assistant N/A

Controlled Document distribution (ref. RM-AA-102) or Records Retention Schedule (ref. RM-AA-101-1004) impacted: ☒ **No** ☐ **Yes** If yes, describe change and list Records Management Person contacted: N/A

***Continuation D** - If all procedurally required activities associated with this document revision have been completed and the document is ready for implementation, then SFAM to print name, sign & date for authorization to implement. Provide implementation date or, if the Implementation Date is blank or N/A then implementation will be upon the issuance by Records Management per RM requirements. Authorization below indicates the SFAM or a designee of the SFAM has verified the document does not alter or negatively impact compliance with regulatory requirements or station commitments.*

*Is this a non-permanent site specific revision to a fleet standard procedure or T&RM or Form? **No** ☒ **or Yes** ☐*
If yes, then CFAM approval must been obtained.

*Is this a site specific revision that deviates from fleet standard procedure or T&RM requirements? **No** ☒ **or Yes** ☐*
If yes, then CFAM approval must been obtained.

CFAM Authorization when required:	N/A	N/A	Interim Chg #:	**N/A**
	CFAM Print and Sign	Date		
Site Authorization:	Tom J. Wasilko /	6-15-16		**N/A**
	SFAM Print and Sign	Date	Impl. Date	Exp. Date

Randy Schmidt / 6/17/15

SRRS Number 1B.100

50.59 REVIEW COVERSHEET FORM

Station/Unit(s): Dresden Unit 2(3)

Activity/Document Number: RW-AA-100 **Revision Number:** 11

Title: Process Control Program for Radioactive Wastes

NOTE: For 50.59 Evaluations, information on this form will provide the basis for preparing the biennial summary report submitted to the NRC in accordance with the requirements of 10 CFR 50.59(d)(2).

Description of Activity:
(Provide a brief, concise description of what the proposed activity involves.)
This activity is for a procedure rev, Process Control Program for Radioactive Wastes, RW-AA-100, rev 11.

Reason for Activity:
(Discuss why the proposed activity is being performed.)
This procedure provides Company guidance. This procedure, revision 11 of RW-AA-100, clarifies the definitions of Blending, Classification Controlling Nuclides, Concentration Averaging, Homogeneous Waste, Mixable waste, and Nuclides of Concern, updates the references to NRC-2011-0022 and adds Station specific USFAR references.

Effect of Activity:
(Discuss how the activity impacts plant operations, design bases, or safety analyses described in the UFSAR.)

This activity, procedure revision, has no impact on plant operations, design bases or safety analyses described in the UFSAR. This procedure is a managerial or administrative procedure governing the conduct of facility operations. This procedure is designed to ensure a process control procedure is in place for radwaste to comply with local, state and federal requirements, compliance to NRC guidance documents, as well as assurance for on site storage.

Summary of Conclusion for the Activity's 50.59 Review:
(Provide justification for the conclusion, including sufficient detail to recognize and understand the essential arguments leading to the conclusion. Provide more than a simple statement that a 50.59 Screening, 50.59 Evaluation, or a License Amendment Request, as applicable, is not required.)

The 50.59 review determined that a 50.59 screening is not required as the procedure involves a a managerial or administrative procedure governing the conduct of facility operations. . Completed 50.59 Applicability Review Form, LS-AA-104-1002 is attached.

Attachments:
Attach all 50.59 Review forms completed, as appropriate.

Forms Attached: (Check all that apply.)

☒	**Applicability Review**				
☐	**50.59 Screening**	**50.59 Screening No.**	_____	**Rev.**	_____
☐	**50.59 Evaluation**	**50.59 Evaluation No.**	_____	**Rev.**	_____

See LS-AA-104, Section 5, Documentation, for record retention requirements for this and all other 50.59 forms associated with the Activity.

50.59 APPLICABILITY REVIEW FORM

Activity/Document Number: RW-AA-100 **Revision Number:** 11

Title: Process Control Program for Radioactive Wastes

Address the questions below for all aspects of the Activity. If the answer is yes for any portion of the Activity, apply the identified process(es) to that portion of the Activity. Note that it is not unusual to have more than one process apply to a given Activity. See Section 4 of the Resource Manual (RM) for additional guidance.

I.	Does the proposed Activity involve a change:		
	1. Technical Specifications or Facility Operating License (10CFR50.90)?	☒ NO ☐ YES	See Section 4.2.1.1 of the RM
	2. Conditions of License		
	Quality Assurance program (10CFR50.54(a))?	☒ NO ☐ YES	See Section 4.2.1.2 of the RM
	Security Plan (10CFR50.54(p))?	☒ NO ☐ YES	
	Emergency Plan (10CFR50.54(q))?	☒ NO ☐ YES	
	3. Codes and Standards		
	IST Program Plan (10CFR50.55a(f))?	☒ NO ☐ YES	See Section 4.2.1.3 of the RM
	ISI Program Plan (10CFR50.55a(g))?	☒ NO ☐ YES	
	4. ECCS Acceptance Criteria (10CFR50.46)?	☒ NO ☐ YES	See Section 4.2.1.4 of the RM
	5. Specific Exemptions (10CFR50.12)?	☒ NO ☐ YES	See Section 4.2.1.5 of the RM
	6. Radiation Protection Program (10CFR20)?	☒ NO ☐ YES	See Section 4.2.1.6 of the RM
	7. Fire Protection Program (applicable UFSAR or operating license condition)?	☒ NO ☐ YES	See Section 4.2.1.7 of the RM
	8. Programs controlled by the Operating License or the Technical Specifications (such as the ODCM).	☒ NO ☐ YES	See Section 4.2.1.7 of the RM
	9. Environmental Protection Program	☒ NO ☐ YES	See Section 4.2.1.7 of the RM
	10. Other programs controlled by other regulations.	☒ NO ☐ YES	See Section 4.2.1 of the RM
II.	Does the proposed Activity involve maintenance which restores SSCs to their original condition or involve a temporary alteration supporting maintenance that will be in effect during at-power operations for 90 days or less?	☒ NO ☐ YES	See Section 4.2.2 of the RM
III.	Does the proposed Activity involve a change to the:		
	1. UFSAR (including documents incorporated by reference) that is limited to reformatting, simplification, removing excessive detail, or minor editorial changes as discussed in NEI 96-07 or NEI 98-03?	☒ NO ☐ YES	See Section 4.2.3 of the RM
	2. Managerial or administrative procedures governing the conduct of facility operations (subject to the control of 10CFR50, Appendix B)	☐ NO ☒ YES	See Section 4.2.4 of the RM
	3. Procedures for performing maintenance activities (subject to 10CFR50, Appendix B)?	☒ NO ☐ YES	See Section 4.2.4 of the RM
	4. Regulatory commitment as defined by NEI 99-04 that is outside the scope of 10 CFR 50.59, i.e., the commitment does not involve the facility or a procedure as described in the UFSAR pursuant to 10 CFR 50.59, the commitment change does not meet the criteria for a change pursuant to 10 CFR 50.59, and the commitment is not otherwise mandated by the NRC to require a 50.59 review?	☒ NO ☐ YES	See Section 4.2.3/4.2.4 of the RM
IV.	Does the proposed Activity involve a change to the Independent Spent Fuel Storage Installation (ISFSI) (subject to control by 10 CFR 72.48)	☒ NO ☐ YES	See Section 4.2.6 of the RM

50.59 APPLICABILITY REVIEW FORM

Activity/Document Number: RW-AA-100 **Revision Number:** 11

Title: Process Control Program for Radioactive Wastes

Check one of the following:

☒ **If** all aspects of the Activity are controlled by one or more of the above processes, **then** a 50.59 Screening is not required and the Activity may be implemented in accordance with its governing procedure.

☐ **If** any portion of the Activity is **not** controlled by one or more of the above processes, then process a 50.59 Screening for the portion not covered by any of the above processes. The remaining portion of the activity should be implemented in accordance with its governing procedure.

Signoff:

50.59 Screener/
50.59 Evaluator: Louis E. Magers (Print name) (Circle One)

Sign: Louis E Magers (Signature)

Date: 5/26/15

See LS-AA-104, Section 5, Documentation, for record retention requirements for this and all other 50.59 forms associated with the Activity.

See AD-AA-101 for the procedural requirements associated with this Form.
Desktop Instruction available on Intranet or through AD functional area.

Document Number: RW-AA-100 **Revision:** 11

Title: PROCESS CONTROL PROGRAM FOR RADIOACTIVE WASTES

Superseded Fleet Standard Documents: N/A ☒ or List:

☐ Check this box if superseding a document containing corporate commitments, notify the corporate Commitment Tracking Coordinator per LS-AA-110 so the CTD can be updated as appropriate.

Batch – Are multiple document creations/revisions/cancelations being issued to add/revise/cancel them for similar requirements? No ☒ or Yes ☐ *If Yes, then identify the highest level Document and Issue Type below.*

Check only one Document Type:	**Check only one Issue Type:**	**Incorporated Fleet Items:**
Level 1 - Continuous Use Procedure ☐	New ☐	
Level 2 - Reference Use Procedure ☐	Revision ☒	
Level 3 - Information Use Procedure ☒	Editorial Revision ☐	
T&RM ☐	Cancel/Supersede Document ☐	
Form ☐	Cancel Revision ☐	

Revision Summary: Clarifies the definitions of Blending, Classification Controlling Nuclides, Concentration Averaging, Homogeneous Waste, Mixable Waste, and Nuclides of Concern, updates the references to NRC-2011-0022 and adds station specific UFSAR references.

(Attach additional description if required)

CONFIRM that no commitments (i.e., those steps annotated with CM-X) have been changed or deleted unless evaluated via completion of LS-AA-110 commitment change/deletion form and **INITIAL** [Preparer]: RMC

Preparer **Robert M. Claes** (Print) **04/21/2015** (Date)

Site Applicability and Contacts - Check box and provide name:

BRW ☒	Greg Smith	DRE ☒	Sandy Livecchi	LIM ☒	Linda Knapp	QDC ☒	Rachael Varner
BYR ☒	Nathan Grobe	FCS ☒	Alan Beebe	NMP ☒	Erin Vosbury	TMI ☒	Tammy Hanlon
CAL ☒	Tami Gary	GIN ☒	Phil Gardner	OYS ☒	Tramanh Michalak	ZIN ☐	
CPS ☒	Briana Marchese	LAS ☒	Lynn Kofoid-Durdan	PEA ☒	Wilson Tharpe	☐	

Cognizant Functional Area (FA) - Check box & provide Corporate contact name if FA is affected by this revision:

AD ☐		ER ☐		NO ☐		RW ☐	
BO ☐		HR ☐		OP ☐		SA ☐	
CC ☐		HU ☐		OU ☐		SM ☐	
CY ☐		IT ☐		PC ☐		SP ☐	
EI ☐		LR ☐		PI ☐		SY ☐	
EN ☐		LS ☐		PL ☐		TQ ☐	
EP ☐		MA ☐		RM ☐		WC ☐	
		NF ☐		RP ☐		☐	

Changes affecting the selected FAs have been communicated No ☐ or Yes ☐

Validation – Is substantiating this document's usability via mockup, simulated performance, field walkdown, or bench top review required? No ☒ or Yes ☐ *If Yes, then attach validation documentation.*
If Yes, then print name & sign for completed validation: _____

NOS Review – Excluding NOS, NDE, ISI, Peer Inspection or Independent Verification, is this document used to perform independent inspection for acceptance (including field installation inspections, fabrication inspections, receipt inspections, new fuel inspection, etc.), or for certification of Inspection personnel? No ☒ or Yes ☐
If Yes, then NOS Reviewer to print name & sign for acceptance: _____

Training
Is common training material being provided? (Document in the change management how the common training material will be developed and provided to the sites or attach.) No ☒ or Yes ☐
Does **CURRENT** common training material require revision? No ☒ or Yes ☐ If Yes, then include Training in the Cognizant Functional Area review above, and notify Training of changes via Training request. TRAC # _____
Change Management provided in: HU-AA-1101 Change Checklist Attached ☐ or: As directed by SFAM ☒
CFAM Approval **Miguel Azar** Print and Sign _____ 4/27/2015 Date

SRRS Number 1B.100

Document Site Approval Form
Page 1 of 2

TRANSMITTAL #91075

AD-AA-101-F-01
Revision 5

See AD-AA-101 for the procedural requirements associated with this Form.
Desktop Instruction available on Intranet or through AD functional area.

Facility: Dresden

Document Number: RW-AA-100 **Revision:** 10

Title: Process Control Program for Radioactive Wastes

Superseded Documents: N/A ☒ or List:

☐ Check this box if superseding a document containing commitments, notify the Commitment Tracking Coordinator per LS-AA-110 so the CTD can be updated as appropriate.

Environmental Review Applicability – Is an Environmental Review applicable per EN-AA-103? No ☒ or Yes ☒ 8/26/14
If Yes, then attach Environmental Review documentation required per EN-AA-103. 8/26/14

Is this a Fleet Standard Document being processed with form AD-AA-101-F-09? No ☒ or Yes ☒ *If yes, then attach the completed form AD-AA-101-F-09, skip the following section, and go to Continuation A.*

Batch – Are multiple document creations/revisions/cancelations being issued to add/revise/cancel them for similar requirements? **No ☒ or Yes ☐** If Yes, then identify the highest level Document and Issue Type below.

Check only one Document Type:	**Check only one Issue Type:**	**Incorporated Site Items (EC, AR, PCR, etc):** N/A
Level 1 - Continuous Use Procedure ☐	New ☐	
Level 2 - Reference Use Procedure ☐	Revision ☒	
Level 3 - Information Use Procedure ☒	Cancel Document ☐	
T&RM ☐	Cancel Revision ☐	
Form ☐	Non-Permanent ☐	
	Cancel Non-Permanent ☐	
	Editorial Revision ☐	

Revision Summary: Refer to 50.59 coversheet form (page 1 of 1) and document traveler
(Attach additional description if required)

CONFIRM that no commitments (i.e., those steps annotated with CM-X) have been changed or deleted unless evaluated via completion of LS-AA-110 commitment change/deletion form and **INITIAL** [Preparer]: JAJ

Preparer	Jerry A. Jones Sr (Print)	8/06/14 (Date)	3819 (Extension)

Validation – Is substantiating this document's usability via mockup, simulated performance, field walk down, or bench top review required? **No ☒ or Yes ☐** *If Yes, then attach validation documentation.*
If Yes, then print name & sign for completed validation: N/A

NOS Review – Excluding NDE, ISI, Peer Inspection or Independent Verification, is this document used to perform independent inspection for acceptance (including field installation inspections, fabrication inspections, receipt inspections, new fuel inspection, etc.), or for certification of Inspection personnel? **No ☒ or Yes ☐**
If Yes, then NOS Reviewer to print name & sign for acceptance: N/A

Continuation A *- Is this a T&RM, Form, or Editorial Revision?* ***No ☒ or Yes ☐*** *If yes, then skip the following section and go Continuation B.*

Impact on Operating and Design Margins – N/A ☒ or explain: _____
(Attach additional description if required)

☐ **No** ☒ **Yes** **10CFR50.59 Applicable?** 2014-0077 **Tracking Number:** screens out

☒ **No** ☐ **Yes** **10CFR72.48 Applicable?**

☒ **No** ☐ **Yes** **Other Regulatory Process Applicable?** **Other Regulatory Process Number:** N/A

☒ **No** ☐ **Yes** **Potential security impact per SY-AA-500-127?** **If Yes, then Security Reviewer acceptance documented by cross discipline review below**

☒ **No** ☐ **Yes** **Surveillance Coordinator Review Required?** **If Yes, then Surveillance Coordinator Review documented by cross discipline review below**

Cross Discipline Reviews: (list below)

Print	Signature	Date	Discipline or Org.
Louis E. Magers	L. E. M	8/6/14	NPPT,CH

Attach additional if req'd

SQR Approval indicates that all required Cross-Disciplinary reviews have been performed and the reviewers have signed this form. This procedure is technically and functionally accurate for all functional areas. (See AD-AA-102)

SQR Approval:	Brian Guertin (Print and Sign)	8/26/14 (Date)	Chem (Discipline)

9-08-14

***Continuation B** - Is this a T&RM, or Form? **No** ☒ **or Yes** ☐ If yes, then skip the following section and go Continuation C.*

PORC Required: ☐ No ☒ Yes	If yes, then enter **PORC** Number (after PORC Approved): 082614	
	Plant Manager Print and Sign (when required by procedure)	Date 8-28-14

***Continuation C** - Is this an Editorial Revision? **No** ☒ **or Yes** ☐ If yes, then skip the following section and go to Continuation D.*

Applicable Site Contact/Site Change Agents (SME): JAJ
- Responsible for Change Management information in ☒ this form or ☐ HU-AA-1101 Checklist (attached)
- Responsible to shepherd the document through site review, approval/authorization, and implementation.

Affected Functional Area(s) or Individuals:

Print	Signature	Date	Affected FA
Hany Gabal		8/06/14	CHEM

Attach additional if req'd

Resources needed to Implement Change: LOE (Only list, if other than Level of Effort.)
For ongoing impacts, estimate number of Full Time Equivalents (FTE). If additional resources are needed go to HU-AA-1101.

Communication Plan: E-mail (e.g., e-mail, Site Paper, **Supervisor Briefing**, Voice Mail, etc.)

Training Required / Qualifications affected: ☒ **No** ☐ **Yes** If yes, list: _____
(e.g., Supervisory Briefing, Tailgate Briefing, Required Reading, Formal Training, recertification etc.)

Update to information infrastructure (e.g. PassPort, PIMS, EDMS workflows, etc.) required to support implementation (including updated forms loaded into PassPort): AS Normal

Controlled Document distribution (ref. RM-AA-102) or Records Retention Schedule (ref. RM-AA-101-1004) impacted: ☒ **No** ☐ **Yes** If yes, describe change and list Records Management Person contacted: _____

***Continuation D** - If all procedurally required activities associated with this document revision have been completed and the document is ready for implementation, then SFAM to print name, sign & date for authorization to implement. Provide implementation date or, if the Implementation Date is blank or N/A then implementation will be upon the issuance by Records Management per RM requirements. Authorization below indicates the SFAM or a designee of the SFAM has verified the document does not alter or negatively impact compliance with regulatory requirements or station commitments.*

*Is this a non-permanent site specific revision to a fleet standard procedure or T&RM or Form? **No** ☒ **or Yes** ☐*
If yes, then CFAM approval must been obtained.

*Is this a site specific revision that deviates from fleet standard procedure or T&RM requirements? **No** ☒ **or Yes** ☐*
If yes, then CFAM approval must been obtained.

CFAM Authorization when required:	N/A (CFAM Print and Sign)	N/A (Date)	Interim Chg #:	N/A
Site Authorization:	Dan Malaukas / Dan Malaukas (SFAM Print and Sign)	8-25-14 pm 8-26-14 (Date)	(Impl. Date)	N/A (Exp. Date)

SRRS Number 1B.100

Rev #9 Cancelled at NCS and was Never Issued at DCE 8/26/14

See AD-AA-101 for the procedural requirements associated with this Form.
Desktop Instruction available on Intranet or through AD functional area.

Document Number: RW-AA-100 **Revision:** ~~X~~ 10 [initials] 12/18/13

Title: Process Control Program for Radioactive Wastes

Superseded Fleet Standard Documents: N/A ☒ or List:

☐ Check this box if superseding a document containing corporate commitments, notify the corporate Commitment Tracking Coordinator per LS-AA-110 so the CTD can be updated as appropriate.

Batch – Are multiple document creations/revisions/cancelations being issued to add/revise/cancel them for similar requirements? No ☒ or Yes ☐ *If Yes, then identify the highest level Document and Issue Type below.*

Check only one Document Type:	Check only one Issue Type:	Incorporated Fleet Items:
Level 1 - Continuous Use Procedure ☐	New ☐	
Level 2 - Reference Use Procedure ☐	Revision ☒	
Level 3 - Information Use Procedure ☒	Editorial Revision ☐	
T&RM ☐	Cancel Document ☐	
Form ☐	Cancel Revision ☐	

Revision Summary: Added definitions (2.11, 2.12, 2.13) and context (4.2.13, 4.2.14, 4.2.15) for concentration ave, blending and encapsulation. Updated requirements at 4.6. Added WCS. Updated references.
(Attach additional description if required)

CONFIRM that no commitments (i.e., those steps annotated with CM-X) have been changed or deleted unless evaluated via completion of LS-AA-110 commitment change/deletion form and **INITIAL** [Preparer]: RMC

Preparer RM Claes (Print) 12/10/2013 (Date) (CAN) 6303372629 (Location and Ext) [initials] 12/17/13

Site Applicability and Contacts - Check box and provide name:

BRW ☒	Shawn Daniel	DRE ☒	Sandy Livecchi	LIM ☒	Linda Knapp	QDC ☒	Rachael Varner
BYR ☒	Nathan Grobe	FCS ☐		NMP ☐		TMI ☒	Tammy Hanlon
CAL ☐		GIN ☐		OYS ☒	Gonzalo Iamella	ZIN ☐	
CPS ☒	Kelly Gresch	LAS ☒	Lynn Kofoid-Durdan	PEA ☒	Wilson Tharpe	___ ☐	

Cognizant Functional Area (FA) - Check box & provide Corporate contact name if FA is affected by this revision:

AD ☐		ER ☐		NO ☐		RW ☐	
AR ☐		HR ☐		OP ☐		SA ☐	
BO ☐		HU ☐		OU ☐		SM ☐	
CC ☐		IT ☐		PC ☐		SY ☐	
CY ☐		LR ☐		PI ☐		TQ ☐	
EI ☐		LS ☐		PL ☐		WC ☐	
EN ☐		MA ☐		RM ☐		___ ☐	
EP ☐		NF ☐		RP ☐		___ ☐	

Validation – Is substantiating this document's usability via mockup, simulated performance, field walkdown, or bench top review required? No ☒ or Yes ☐ *If Yes, then attach validation documentation.*
If Yes, then print name & sign for completed validation: ____________

NOS Review – Excluding NOS, NDE, ISI, Peer Inspection or Independent Verification, is this document used to perform independent inspection for acceptance (including field installation inspections, fabrication inspections, receipt inspections, new fuel inspection, etc.), or for certification of inspection personnel? No ☒ or Yes ☐
If Yes, then NOS Reviewer to print name & sign for acceptance: ____________

Common Training – Is common training material being provided? (Document in the change management how the common training material will be developed and provided to the sites or attach.) No ☒ or Yes ☐

Change Management provided in: HU-AA-1101 Change Checklist Attached ☐ or: As directed by SFAM ☒

CFAM Approval Miguel Azar / [signature] (Print and Sign) 12/13/13 (Date) Cantera / 3204 (Location and Ext)

50.59 REVIEW COVERSHEET FORM

Station/Unit(s): Dresden Unit 2(3)

Activity/Document Number: RW-AA-100 **Revision Number:** 10

Title: Process Control Program for Radioactive Wastes

NOTE: For 50.59 Evaluations, information on this form will provide the basis for preparing the biennial summary report submitted to the NRC in accordance with the requirements of 10 CFR 50.59(d)(2).

Description of Activity:
(Provide a brief, concise description of what the proposed activity involves.)
This activity is a procedure revision to RW-AA-100, Process Control Program for Radioactive Wastes, with revision 8 going to revision 10 (rev 9 was fatal flawed prior to implementation on site). For revision 10 of RW-AA-100, this revision includes the following:

1.added definitions(2.11, 2.12, 2.13) and
2. context changes at(4.2.13, 4.2.14, 4.2.15) for concentration average, blending and encapsulation.
3. updated requirements at 4.6,
4. an added disposal vendor WCS(Waste Control Specialists, a new disposal site in Texas),
5.updated references.

Reason for Activity:
(Discuss why the proposed activity is being performed.)
The technical reason for this procedure revision 10 is to provide consistency between this procedure, RW-AA-100, Process Control Program for Radioactive Wastes, and the NRC's Branch Technical Position on Concentration Averaging and Encapsulation. Additonal changes include adding vendor information and edits .

Effect of Activity:
(Discuss how the activity impacts plant operations, design bases, or safety analyses described in the UFSAR.)

The activity, implements an administrative control and has no impact on plant operations, design basis, or safety analysis described in the UFSAR and does not implement changes on how SSCs are operated or controlled.

Summary of Conclusion for the Activity's 50.59 Review:
(Provide justification for the conclusion, including sufficient detail to recognize and understand the essential arguments leading to the conclusion. Provide more than a simple statement that a 50.59 Screening, 50.59 Evaluation, or a License Amendment Request, as applicable, is not required.)

It was determined that the activity, RW-AA-100, Process Control Program for Radioactive Wastes, with revision 8 going to revision 10, does not in itself change or modify any SSCs, their design, or methods of control. Evaluation methodologies are not impacted and no tests or experiments are performed. There is no impact on the Tech Specs or operating license. The 10CFR50.59 Applicability Review determined that this is a managerial or administrative procedure and does not require further 50.59 review. This activity may be implemented without prior NRC approval.

Attachments:
Attach all 50.59 Review forms completed, as appropriate.

50.59 REVIEW COVERSHEET FORM

Station/Unit(s): Dresden Unit 2(3)

Activity/Document Number: RW-AA-100 **Revision Number:** 10

Title: Process Control Program for Radioactive Wastes

Forms Attached: (Check all that apply.)

☐	**Applicability Review**				
☒	**50.59 Screening**	**50.59 Screening No.**	**2014-0077**	**Rev.**	**0**
☐	**50.59 Evaluation**	**50.59 Evaluation No.**		**Rev.**	

See LS-AA-104, Section 5, Documentation, for record retention requirements for this and all other 50.59 forms associated with the Activity.

50.59 SCREENING FORM

50.59 Screening No. 2014-0077 **Rev. No.** 0

Activity/Document Number: RW-AA-100 **Revision Number:** 10

Title: Process Control Program for Radioactive Wastes

I. 50.59 Screening Questions (Check correct response and provide separate written response providing the basis for the answer to each question)(See Section 5 of the Resource Manual (RM) for additional guidance):

1. Does the proposed Activity involve a change to an SSC that adversely affects an UFSAR described design function? (See Section 5.2.2.1 of the RM) ☐ YES ☒ NO

   The activity provides consistency between this procedure and the NRC's Branch Technical Position on Concentration Averaging and Encapsulation. Additional changes include adding vendor information and edits. The activity has no impact on design basis or safety analysis described in the UFSAR and does not implement changes on how UFSAR described SSCs are operated or controlled. There is no conflict with the descriptions in the UFSAR. The activity does not involve a change to an SSC that adversely affects an UFSAR described design function.

2. Does the proposed Activity involve a change to a procedure that adversely affects how UFSAR described SSC design functions are performed or controlled? (See Section 5.2.2.2 of the RM) ☐ YES ☒ NO

   The proposed activity provides consistency between this procedure and the NRC's Branch Technical Position on Concentration Averaging and Encapsulation and does not involve a change to a procedure that adversely affects how UFSAR described design functions are performed or controlled.

3. Does the proposed Activity involve an adverse change to an element of a UFSAR described evaluation methodology, or use of an alternative evaluation methodology, that is used in establishing the design bases or used in the safety analyses? (See Section 5.2.2.3 of the RM) ☐ YES ☒ NO

   The proposed activity provides consistency between this procedure and the NRC's Branch Technical Position on Concentration Averaging and Encapsulation and does not impact, revise or replace a UFSAR described evaluation methodology used in establishing design bases or used in the safety analyses for any System.

4. Does the proposed Activity involve a test or experiment not described in the UFSAR, where an SSC is utilized or controlled in a manner that is outside the reference bounds of the design for that SSC or is inconsistent with analyses or descriptions in the UFSAR? (See Section 5.2.2.4 of the RM) ☐ YES ☒ NO

   The proposed activity provides consistency between this procedure and the NRC's Branch Technical Position on Concentration Averaging and Encapsulation and does not utilize or control an SSC in a manner that is outside the reference bounds of UFSAR design bases. The activity is not inconsistent with the analyses or descriptions in the UFSAR, and it is not a test or experiment.

5. Does the proposed Activity require a change to the Technical Specifications or Facility Operating License? (See Section 5.2.2.5 of the RM) ☐ YES ☒ NO

   The proposed activity, procedure revision to RW-AA-100, Process Control Program for Radioactive Wastes, with revision 8 going to revision 10, does not require a change to Technical Specifications because the activity does not alter or modify any existing Technical Specification, Operating License, or Technical Requirements Manual requirements.

II. List the documents (e.g., UFSAR, Technical Specifications, other licensing basis, technical, commitments, etc.) reviewed, including sections numbers where relevant information was found (if not identified in the response to each question).

Technical Specifications:

1. Tech Spec 5.5.1: "Offsite Dose Calculation Manual"
2. Tech Spec 5.6.2: "Annual Radiological Environmental Operating Report"
3. Tech Spec 5.7: "High Radiation Areas"

50.59 SCREENING FORM

50.59 Screening No. 2014-0077 **Rev. No.** 0

Activity/Document Number: RW-AA-100 **Revision Number:** 10

Title: Process Control Program for Radioactive Wastes

Technical Requirements Manual (TRM) Sections:
1. TRM 3.7.d: "Liquid Holdup Tanks"
2. TRM 3.7.g: "Sealed source Contamination"

UFSAR Sections

1. UFSAR Section 1.2.1.6: "Radioactive Waste Disposal"
2. UFSAR Section 1.2.2.11: "Shielding Access Control, and Radiation Protection Procedures"
3. UFSAR Section 11.0: "Radioactive Waste Management"
4. UFSAR Section 11.4: "Solid Waste Management System"
5. UFSAR Section 13.7.5: "Radiological and Chemical Records"

III. Select the appropriate conditions:

☒ **If** all questions are answered NO, **then** a 50.59 Evaluation is not required.

☐ **If** question 1, 2, 3, or 4 is answered YES for any portion of an Activity and question 5 is answered NO, **then** a 50.59 Evaluation shall be performed for the affected portion of the Activity.

☐ **If** question 5 is answered YES for any portion of an Activity and questions 1 through 4 are answered NO for the remaining portions of the Activity, **then** a License Amendment is required prior to implementation of the portion of the Activity that requires the amendment; however, a 50.59 Evaluation is **not** required for the remaining portions of the Activity.

☐ **If** question 5 is answered YES for any portion of an Activity and question 1, 2, 3, or 4 is answered YES for any of the remaining portions of the Activity, **then** a License Amendment is required prior to implementation of the portion of the Activity that requires the amendment **and** a 50.59 Evaluation is required for the remaining affected portions of the Activity.

IV. Screening Signoffs:

50.59 Screener: Louis E. Magers (Print name) Sign: _____ (Signature) Date: 08/04/14

50.59 Reviewer: Michael W. Walls (Print name) Sign: _____ (Signature) Date: 8/6/14

See LS-AA-104, Section 5, Documentation, for record retention requirements for this and all other 50.59 forms associated with the Activity.

PROCESS CONTROL PROGRAM FOR RADIOACTIVE WASTES

1. PURPOSE

1.1. The purpose of the Process Control Program (PCP) is to:

1.1.1. Establish the process and boundary conditions for the preparation of specific procedures for processing, sampling, analysis, packaging, storage, and shipment of solid radwaste in accordance with local, state, and federal requirements. **(CM-1)**

1.1.2. Establish parameters which will provide reasonable assurance that all Low Level Radioactive Wastes (LLRW), processed by the in-plant waste process systems on-site OR by on-site vendor supplied waste processing systems, meet the acceptance criteria to a Licensed Burial Facility, as required by 10CFR Part 20, 10CFR Part 61, 10CFR Part 71, 49CFR Parts 171-172, "Technical Position on Waste Form (Revision 1)" [1/91], "Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification" [5/83], and the Station Technical Specifications, as applicable.

1.1.3. Provide reasonable assurance that waste placed in "on-site storage" meets the requirements as addressed within the Safety Analysis Reports for the low level radwaste storage facilities for dry and/or processed wet waste.

2. TERMS AND DEFINITIONS

2.1. **Process Control Program (PCP):** The program which contains the current formulas, sampling, analysis, tests, and determinations to be made to ensure that processing and packaging of solid radioactive waste based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure the waste meets the stabilization criteria specified in 10CFR Parts 20, 61 and 71, state regulations, and burial site requirements.

2.2. **Solidification:** Liquid waste processed to either an unstable or stable form per 10CFR61 requirements. Waste solidified does not have to meet the 300-year free standing monolith criteria. Approved formulas, samples and tests do not have to meet NRC approval for wastes solidified in a container meeting stability criteria (e.g. High Integrity Container).

2.3. **Stabilization:** Liquid waste processed to a "stable state" per 10CFR61 Requirements. Established formulas, samples, and tests shall be approved by the NRC in order to meet solidification "stabilization" criteria. This processing method is currently not available, because the NRC recognizes that waste packed in a High Integrity Container meets the 300-year stabilization criteria. In the event that this processing method becomes an acceptable method, then the NRC shall approve the stabilization formulas, samples, tests, etc.

2.4. **Solidification Media:** An approved media (e.g. Barnwell - vinyl ester styrene, cement, bitumen) when waste containing nuclides with greater than 5-year half lives is solidified in a container with activity greater than 1 micro curie/cc. Waste solidified in a HIC is approved by the commission meeting the 10CFR61 stabilization criteria, including 1% free standing liquids by volume when the waste is packaged to a "stable" form and ≤ 0.5% when waste is packaged to an "unstable" form. The formulas, sampling, analysis, and test do not require NRC approval, because the HIC meets the stability criteria.

2.4.1. Solidification to an unstable or stable state is performed by vendors, when applicable. Liquid waste solidified to meet stabilization criteria (10CFR61 and 01-91 Branch Technical Requirements) shall have documentation available that demonstrates that the process is approved by the NRC or disposal facility.

2.5. **Dewatering:** The process of removing fluids from liquid waste streams to produce a waste form that meets the requirements of 10CFR Part 61 and applicable burial site criteria, ≤0.5% by volume when the waste is packaged to an "unstable" state, or ≤1% by volume when the waste is packaged to a "stable" form.

2.6. **High Integrity Container (HIC):** A disposable container that is approved to the Requirements of 10CFR61. The use of HIC's is an alternative to solidification or encapsulation in a steel container to meet burial stability. HIC's are used to package dewatered liquid wastes, (e.g. filter cartridges, filter media, resin, sludges, etc), or dry active waste.

2.7. **Liquid Waste Processing Systems:** In-plant or vendor supplied processing systems consisting of equipment utilized for evaporation, filtration, demineralization, dewatering, compression dewatering, solidification, or reverse osmosis (RO) for the treatment of liquid wastes (such as Floor Drains, Chemical Drains and Equipment Drain inputs).

2.8. **Incineration, RVR, and/or Glass Vitrification of Liquid or Solid:** Dry or wet waste processed via incineration and/or thermal processing where the volume is reduced by thermal means meets 10CFR61 requirements.

2.9. **Compaction:** When dry wastes such as paper, wood, plastic, cardboard, incinerator ash, and etc. are volume reduced through the use of a compactor.

2.10. **Waste Streams:** Consist of but are not limited to

- Filter media (powdered, bead resin and fiber),
- Filter cartridges,
- Pre-coat body feed material,
- Contaminated charcoal,
- Fuel pool activated hardware,
- Oil Dry absorbent material added to a container to absorb liquids
- Fuel Pool Crud
- Sump and tank sludges,
- High activity filter cartridges,
- Concentrated liquids,
- Contaminated waste oil,
- Dried sewage or wastewater plant waste,
- Dry Active Waste (DAW): Waste such as filters, air filters, low activity cartridge filters, paper, wood, glass, plastic, cardboard, hoses, cloth, and metals, etc, which have become contaminated as a consequence of normal operating, housekeeping and maintenance activities.
- Other radioactive waste generated from cleanup of inadvertent contamination.

2.11. **Concentration Averaging**: Concentration averaging is either: a) the mathematical averaging of waste concentrations, based on the size, geometry, type of radioactive emission, and observed dose rates, or b) the combining of radioactive components in a single container and how their radioactivity may be averaged over the volume of the container. Concentration averaging is subject to constraints identified in the NRC's Branch Technical Position on Concentration Averaging and Encapsulation and may also be constrained by Agreement States or Disposal Facilities.

2.12. **Encapsulation**: Encapsulation is the surrounding of a radioactive source or component with a nonradioactive material. Encapsulation involves a radioactive core surrounded by a non-radioactive matrix.

2.13. **Blending:** The intentional mixing of different, but miscible waste streams (such as resins, filter media, etc.) from different batches or systems for the purpose of operational efficiency or ALARA. Blending applies to LLRW streams only. The addition of non-radioactive materials or fillers is not considered blending.

3. RESPONSIBILITIES

3.1. Implementation of this Process Control Program (PCP) is described in procedures at each station and is the responsibility of the each site to implement.

4. MAIN BODY

4.1. Process Control Program Requirements

4.1.1. A change to this PCP (Radioactive Waste Treatment Systems) may be made provided that the change is reported as part of the annual radioactive effluent release report, Regulatory Guide 1.21, and is approved by the Plant Operations Review Committee (PORC).

4.1.2. Changes become effective upon acceptance per station requirements.

4.1.3. A solidification media, approved by the burial site, may be **REQUIRED when** liquid radwaste is solidified to a stable/unstable state.

4.1.4. **When** processing liquid radwaste to meet solidification stability using a vendor supplied solidification system:

1. **If** the vendor has its own Quality Assurance (QA) Program, **then** the vendor shall **ADHERE** to its own QA Program and shall have **SUBMITTED** its process system topical report to the NRC or agreement state.

2. **If** the vendor does **not HAVE** its own Quality Assurance Program, **then** the vendor shall **ADHERE** to an approved Quality Assurance Topical Report standard belonging to the Station or to another approved vendor.

4.1.5. The vendor processing system(s) is/are controlled per the following:

1. A commercial vendor supplied processing system(s) may be **USED** for the processing of LLRW streams.

2. Vendors that process liquid LLRW at the sites shall **MEET** applicable Quality Assurance Topical Report and Augmented Quality Requirements.

4.1.6. Vendor processing system(s) operated at the site shall be **OPERATED and CONTROLLED** in accordance with vendor approved procedures or station procedures based upon vendor approved documents.

4.1.7. All waste streams processed for burial or long term on-site storage shall **MEET** the waste classification and characteristics specified in 10CFR Part 61.55, Part 61.56, the 5-83 Branch Technical Position for waste classification, and the applicable burial site acceptance criteria (for any burial site operating at the time the waste was processed).

4.1.8. An Exelon Nuclear plant may store waste at another Exelon Nuclear plant, provided formal NRC approval has been **RECEIVED** for the transfer of waste.

4.2. General Waste Processing Requirements

NOTE: On-site resin processing involves tank mixing and settling, transferring to the station or vendor processing system via resin water slurry or vacuuming into approved waste containers, and, when applicable, dewatering for burial.

4.2.1. Vendor resin beds may be **USED** for decontamination of plant systems, such as, SFP (Spent Fuel Pool), RWCU (reactor water cleanup), and SDC (Shut Down Cooling). These resins are **then PROCESSED** via the station or vendor processing system.

4.2.2. Various drains and sump discharges will be **COLLECTED** in tanks or suitable containers for processing treatment. Water from these tanks may be **SENT** through a filter, demineralizer, concentrator or vendor supplied processing systems.

4.2.3. Process waste (e.g. filter media, sludges, resin, etc) will be periodically **DISCHARGED** to the station or vendor processing system for onsite waste treatment **or PACKAGED** in containers for shipment to offsite vendor for volume reduction processing.

4.2.4. Process water (e.g. chemical, floor drain, equipment drain, etc.) may be **SENT** to either the site waste processing systems or vendor waste processing systems for further filtration, demineralization for plant re-use, or discharge.

4.2.5. All dewatering and solidification/stabilization will be **PERFORMED** by either utility site personnel or by on-site vendors **or** will be **PACKAGED and SHIPPED** to an off-site vendor low-level radwaste processing facility.

4.2.6. Dry Active Waste (DAW) will be **HANDLED and PROCESSED** per the following:

1. DAW will be **COLLECTED and SURVEYED and** may be **SORTED** for compactable and non-compactable wastes.

2. DAW may be packaged in containers to facilitate on-site pre-compaction and/or off-site vendor contract requirements.

3. DAW items may be **SURVEYED** for release onsite or offsite when applicable.

4. Contaminated filter cartridges will be **PLACED** into a HIC **or** will be **ENCAPSULATED** in an in-situ liner for disposal **or SHIPPED** to an offsite waste processor in drums, boxes or steel liners per the vendor site criteria for processing and disposal.

4.2.7. Filtering devices using pre-coat media may be **USED** for the removal of suspended solids from liquid waste streams. The pre-coat material or cartridges from these devices may be routinely **REMOVED** from the filter vessel and discharged to a Filter Sludge Tank or Liner/HIC. Periodically, the filter sludge may be **DISCHARGED** to the vendor processing system for waste treatment onsite **or PACKAGED** in containers for shipment to offsite vendor for volume reduction processing.

4.2.8. Activated hardware stored in the Spent Fuel Pools will be **PROCESSED** periodically using remote handling equipment **and** may then be **PUT** into a container for shipment or storage in the pool or loading the processed activated hardware into the Dry Cask storage system.

4.2.9. High Integrity Containers (HIC):

1. For disposal at Barnwell, vendors supplying HIC's to the station shall **PROVIDE** a copy of the HIC Certificate of Compliance, which details specific limitations on use of the HIC.

2. For disposal at Clive or WCS, vendors supplying HIC's to the station shall **PROVIDE** a copy of the HIC Certificate of Conformance, which details specific limitations on use of the HIC.

3. Vendors supplying HIC's to the station shall **PROVIDE** a handling procedure which establishes guidelines for the utilization of the HIC. These guidelines serve to protect the integrity of the HIC and ensure the HIC is handled in accordance with the requirements of the Certificate of Compliance or Certificate of Conformance.

4.2.10. Lubricants and oils contaminated as a consequence of normal operating and maintenance activities may be PROCESSED on-site (by incineration, for oils meeting 10CFR20.2004 and applicable state requirements, or by an approved vendor process) **or SHIPPED** offsite (for incineration or other acceptable processing method).

4.2.11. Former in-plant systems GE or Stock Drum Transfer Cart and Drum Storage Areas may be **USED** for higher dose DAW storage at Clinton, Dresden, Quad Cities, Braidwood and Byron.

4.2.12. Certain waste, including flowable solids from holding pond, oily waste separator, cooling tower basin and emergency spray pond, may be disposed of onsite under the provisions of a 10CFR20.2002 permit. Specific requirements associated with the disposal shall be incorporated into station implementing procedures. **(CM-2)**

4.2.13. Concentration averaging may be **PERFORMED** to combine LLRW having different concentrations of radionuclides to form a homogeneous mixture in accordance with the guidance in the NRC's Branch Technical Position on Concentration Averaging and Encapsulation-1995:

- For homogeneous waste types such as resins and filter media, the concentration of the mixture for classification purposes may be based on either the highest radionuclide concentration in any of the individual waste types contributing to the mixture or the volumetric or weight-averaged nuclide concentrations in the mixture provided that the concentrations of the individual waste type contributors to the mixture are within a factor of 10 of the average concentration of the resulting mixture. (NOTE: a designed collection of homogeneous waste types (from different sources within a facility) is not considered 'mixing' and the concentration for classification purposes may be the average concentration of the combination).
- For non-homogeneous waste types such as activated metals, cartridge filters or components incorporating radioactivity in their design, the concentration should be determined from the total weight or displaced volume (excluding major void spaces) of the component. Mixtures of components in a disposal container is permissible. Concentration averaging of a mixture of components of similar types can be performed in accordance with the NRC's Branch Technical Position on Concentration Averaging and Encapsulation and any State or Disposal Site specific requirements.

4.2.14. Blending may be **PERFORMED** for routine LLRW such as resins and filter media in accordance with the guidance in the NRC's Branch Technical Position on Concentration Averaging and Encapsulation as further clarified in SECY 2010-0043. The concentration of the mixture may be determined based on the total activity of all components in the mixture divided by the total volume or mass of the mixture. Reasonable effort should be made to mix blended LLRW so that activity is evenly distributed.

4.2.15. Encapsulation may be **PERFORMED** for routine wastes such as filters, filter cartridges, or sealed sources centered in an encapsulated mass, in accordance with the guidance in the NRC's Branch Technical Position on Concentration Averaging and Encapsulation. Classification may be based on the overall volume of the final solidified mass provided that;

- The minimum solidified volume or mass should be reasonably difficult to move by hand.
- The maximum solidified volume or mass used for determining concentration for any single discrete source should be no more than 0.2 m^3 or 500Kg (typically 55-gallon drum).
- The maximum amount of gamma-emitting radioactivity or radioactive material is <0.02 mrem/hr on the surface of the encapsulation over a 500-year decay period.

- The maximum amount of any radionuclide in a single encapsulation, when averaged over the waste and encapsulating media, does not exceed the maximum concentration limits for Class C waste.
- Written procedures should be established to ensure that the radiation source(s) is reasonably centered (or distributed) within the encapsulating media.
- All other disposal facility requirements for encapsulated material are met.

4.3. Burial Site Requirements

4.3.1. Waste sent directly to burial shall **COMPLY** with the applicable parts of 49CFR171-172, 10CFR61, 10CFR71, and the acceptance criteria for the applicable burial site.

4.4. Shipping and Inspection Requirements

4.4.1. All shipping/storage containers shall be **INSPECTED**, as required by station procedures, for compliance with applicable requirements (Department of Transportation (DOT), Nuclear Regulatory Commission (NRC), station, on-site storage, and/or burial site requirements) prior to use.

4.4.2. Containers of solidified liquid waste shall be **INSPECTED** for solidification quality and/or dewatering requirements per the burial site, offsite vendor acceptance, or station acceptance criteria, as applicable.

4.4.3. Shipments sent to an off site processor shall be **INSPECTED** to ensure that the applicable processor's waste acceptance criteria are being met.

4.4.4. Shipments sent for off site storage shall **MEET** the storage site's waste acceptance criteria.

4.5. Inspection and Corrective Action

4.5.1. Inspection results that indicate non-compliance with applicable NRC, State, vendor, or site requirements shall be IDENTIFIED and TRACKED through the Corrective Action Program.

4.5.2. Administrative controls for preventing unsatisfactory waste forms from being released for shipment are described in applicable station procedures. **If** the provisions of the Process Control Program are not satisfied, **then SUSPEND** shipments of defectively packaged radioactive waste from the site. **(CM-1)**

4.5.3. **If** freestanding water or solidification **not** meeting program requirements is observed, **then** samples of the particular series of batches shall be **TAKEN** to determine the cause. Additional samples shall be **TAKEN**, as warranted, to ensure that **no** freestanding water is present and solidification requirements are maintained.

4.6. Procedure and Process Reviews

4.6.1. The Exelon Nuclear Process Control Program and subsequent changes (other than editorial/minor changes) shall be **REVIEWED and APPROVED** in accordance with the station procedures, plant-specific Technical Specifications (Tech Spec), Technical Requirements Manual (T&RM), Operation Requirements Manual (ORM), as applicable, for the respective station and LS-AA-106. Changes to the Licensees Controlled Documents, UFSAR, ORM, or TRM are controlled by the provisions of 10CFR 50.59.

4.6.2. Any changes to the PCP shall be reviewed to determine if reportability is required in the Annual Radiological Effluent Release Report (ARERR). The Radwaste Specialist shall ensure correct information is **SUBMITTED** to the ODCM program owner prior to submittal of the ARERR.

4.6.3. Procedures shall be **IMPLEMENTED** as follows:

- Station processes or other vendor waste processing/operating procedures shall be technically reviewed and approved per RM-AA-102-1006.
- Procedures related to waste manifests, shipment inspections, and container activity determinations are **CONTROLLED** by Radiation Protection Standard Procedures (RP-AA-600 Series).
- Site waste processing **IS CONTROLLED** by site operating procedures.
- Liquid processed by vendor equipment shall be **PERFORMED** in accordance with vendor procedures.
- The dewatering procedures implemented by Vendor for the purpose of compliance to the Process Control Program **SHALL BE REVIEWED and APPROVED** in accordance with the plant specific TRM or ORM (either Current Technical Specifications (CTS) or Improved Technical Specifications (ITS), as applicable for the respective stations).

4.7. Waste Types, Point of Generation, and Processing Method

Methods of processing and individual vendors may **CHANGE** due to changing financial and regulatory options. The table below is a representative sample. It is **not** intended be all encompassing.

WASTE STREAM	POINTS OF GENERATION	AVAILABLE WASTE PROCESSING METHODS
Bead Resin	Systems - Fuel Pool, Condensate, Reactor Water Cleanup, Blowdown, Equipment Drain, Chemical and Volume Control Systems, Floor Drain, Maximum Recycle, Blowdown, Boric Acid Recycling System, Vendor Supplied Processing Systems, and Portable Demin System	Dewatering, solidification to an unstable/stable state Thermal Processing Free Release to a Land Fill
Powdered Resin	Systems - (Condensate System, Floor Drain/Equipment Drain filtration, Fuel Pool)	Dewatering, solidification to an unstable/stable state Thermal Processing
Concentrated Waste	Waste generated from Site Evaporators resulting typically from the Floor Drain and Equipment Drain Systems	Solidification to an unstable/stable state Thermal Processing
Sludge	Sedimentation resulting from various sumps, condensers, tanks, cooling tower, emergency spray pond, holding pond, and oily waste separators	Dewatering, solidification to an unstable/stable state Thermal Processing Evaporation on-site or at an offsite processor On-site disposal per 10CFR20.2002 permit
Filter cartridges	Systems - Floor/Equipment Drains, Fuel Pool; cartridge filters are typically generated from clean up activities within the fuel pool, torus, etc	Dewatering, solidification to an unstable/stable state Processed by a vendor for volume reduction
Dry Active Waste	Paper, wood, plastic, rubber, glass, metal, and etc. resulting from daily plant activities	Decon/Sorting for Free Release Compaction/Super-compaction Thermal Processing by Incineration or glass vitrification Sorting for Free Release Metal melting to an ingot
Contaminated Oil	Oil contaminated with radioactive materials from any in-plant system.	Solidification unstable state Thermal Processing by Incineration Free Release for recycling
Drying Bed Sludge	Sewage Treatment and Waste Water Treatment Facilities	Free release to a landfill or burial
Metals	See DAW	See DAW
Irradiated Hardware	Fuel Pool, Reactor Components	Volume Reduction for packaging efficiencies

5. DOCUMENTATION

5.1. Records of reviews performed shall be retained for the duration of the unit operating license. This documentation shall contain:

1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change, and

2. A determination which documents that the change will maintain the overall conformance of waste products to Federal (10CFR61 and the Branch Technical Position), State, or other applicable requirements, including applicable burial site criteria.

6. REFERENCES

6.1. Technical Specifications:

6.1.1. The details contained in Current Tech Specs (CTS) or Improved Technical Specifications (ITS), as applicable, in regard to the Process Control Program (PCP), are to be relocated to the Licensee Controlled Documents. Some facilities have elected to relocate these details into the Operational Requirements Manual (ORM). Relocation of the description of the PCP from the CTS or ITS does **not** affect the safe operation of the facility. Therefore, the relocation details are **not** required to be in the CTS or the ITS to provide adequate protection of the public health and safety.

6.2. Writers' References:

6.2.1. Code of Federal Regulations: 10 CFR Part 20, Part 61, Part 71, 49 CFR Parts 171-172

6.2.2. Low Level Waste Licensing Branch Technical Position on Radioactive Waste Classification, May 1983

6.2.3. Technical Position on Waste Form (Revision 1), January 1991

6.2.4. USNRC Branch Technical Position on Concentration Averaging and Encapsulation, January 1995

6.2.5. 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

6.2.6. I.E. Circular 80.18, 10CFR 50.59 Safety Evaluation for Changes to Radioactive Waste Treatment Systems

6.2.7. Amendment No. 202 to Facility Operating License No. NPF-11 and Amendment No. 189 to Facility Operating License (FOL) No. NPF-18 for the LaSalle County Station (LSCS), Units 1 and 2

6.2.8. NRC Branch Technical Position on Blending of Low-Level Radioactive Waste, SECY-10-0043

6.3. Users' References:

6.3.1. Quality Assurance Program (QATR)

6.3.2. LS-AA-106, Plant Operations Review Committee

6.3.3. RM-AA-102-1006, Processing Vendor Documents

6.3.4. RP-AA-600 Series, Radioactive Material/Waste Shipments

6.3.5. CY-AA-170-2000, Annual Radioactive Effluent Release Report

6.4. Station Commitments:

6.4.1. Peach Bottom

CM-1, T03819, Letter from G.A. Hunger, Jr., dated Sept. 29 1994, transmitting TSCR 93-16 (Improved Technical Specifications). (Step 1.1.1, 4.5.2)

6.4.2. Limerick

CM-2, T03896, 10CFR20.2002 permit granted to Limerick via letter dated July 10, 1996. (Step 4.2.12)

7. **ATTACHMENTS** - None