Exelon Generation®

SVP-16-030 10 CFR 50.36a

April 28, 2016

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Radioactive Effluent Release Report for 2015

Pursuant to Technical Specifications Section 5.6.3 and 10 CFR 50.36a, enclosed is the Quad Cities Nuclear Power Station Radioactive Effluent Release Report for January through December 2015.

In addition, pursuant to Section 12.7.3.4 of the Off-Site Dose Calculation Manual (ODCM), enclosed (Attachment 2) is a copy of the Process Control Program for Radioactive Wastes (RW-AA-100, Revision 11) which was revised in 2015.

Should you have any questions concerning this letter, please contact Mr. Wally J. Beck at (309) 227-2800.

Respectfully,

Scott Darin
Site Vice President
Quad Cities Nuclear Power Station

Attachments:

1. 2015 Annual Radioactive Effluent Release Report
2. RW-AA-100, Revision 11, Process Control Program for Radioactive Wastes

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

IE48
NRR

Attachment 1

2015 Annual Radioactive Effluent Release Report

Effluent & Waste Disposable Summary

Gaseous Effluents – Summation of all Releases

Period: January – December 2015 Unit: 1 & 2

A. Fission & Activation Gases	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total	Est. Total Error %
1. Total Release	Ci	2.74E+01	2.99E+01	3.19E+01	3.59E+01	1.24E+02	12.7
2. Average release rate for the period	µCi/sec	3.54E+00	3.80E+00	4.01E+00	4.52E+00		
3. Percent of ODCM limit[1]	%γ	1.22E-02	1.28E-02	1.42E-02	1.60E-02		
	%β	6.91E-04	8.75E-04	7.98E-04	9.02E-04		

B. Iodine							
1. Total Iodine – 131	Ci	8.23E-04	1.89E-04	5.61E-04	3.35E-04	1.91E-03	41.7
2. Average release rate for the period	µCi/sec	1.06E-04	2.40E-05	7.06E-05	4.21E-05		
3. Percent of ODCM limit	%	N/A[2]	N/A[2]	N/A[2]	N/A[2]		

C. Particulates[3]							
1. Particulates with half-lives >8 days	Ci	8.66E-04	4.38E-04	4.22E-04	4.53E-04	1.82E-03	32.2
2. Average release rate for the period	µCi/sec	1.11E-04	5.57E-05	5.31E-05	5.70E-05		
3. Percent of ODCM limit	%	N/A[2]	N/A[2]	N/A[2]	N/A[2]		
4. Gross alpha radioactivity	Ci	<LLD[4]	<LLD[4]	<LLD[4]	<LLD[4]		

D. Tritium							
1. Total Release	Ci	2.04E+01	2.05E+01	2.44E+01	1.96E+01	8.49E+01	6.3
2. Average release rate for the period	µCi/sec	2.62E+00	2.61E+00	3.07E+00	2.47E+00		
3. Percent of ODCM limit	%	N/A[2]	N/A[2]	N/A[2]	N/A[2]		

E. Carbon - 14						
1. Total Release	Ci	6.46E+00	7.35E+00	7.49E+00	7.55E+00	2.89E+01
2. Average release rate for the period	µCi/sec	8.31E-01	9.35E-01	9.42E-01	9.50E-01	
3. Percent of ODCM limit	%	N/A[2]	N/A[2]	N/A[2]	N/A[2]	

F. Iodine 131 & 133, Tritium, Particulate, and C-14					
1. Percent of ODCM Organ Dose limit	%	1.86E+00	6.88E-01	1.31E+00	8.55E-01

(1) % Noble gas gamma/noble gas beta dose limits

(2) Percent of ODCM Limit is captured in aggregate in section F

(3) Nuclides with less than 8-day half-lives are not included per the ODCM, with the exception of La-140 and Mo-99

(4) Gaseous Effluent LLDs reported on page 9 of 77

Effluent & Waste Disposable Summary

Gaseous Effluents Release Point: Main Chimney (Elevated) Continuous Mode
Period: January – December 2015 Unit: 1 & 2

Continuous Mode					
Nuclides Released	**Jan – Mar 2015**	**Apr – Jun 2015**	**Jul – Sep 2015**	**Oct – Dec 2015**	**Total**
1. FISSION AND ACTIVATION GASES: Curies					
Kr-85	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	1.22E-01	1.25E-01	1.54E-01	1.63E-01	5.64E-01
Kr-87	8.00E-01	8.11E-01	8.98E-01	1.03E+00	3.54E+00
Kr-88	4.78E-01	4.89E-01	5.39E-01	6.13E-01	2.12E+00
Xe-133	1.20E-01	1.62E-01	2.79E-01	2.42E-01	8.03E-01
Xe-135	6.94E-01	7.00E-01	7.80E-01	8.66E-01	3.04E+00
Xe-135m	5.26E+00	5.43E+00	6.08E+00	6.86E+00	2.36E+01
Xe-138	1.98E+01	2.05E+01	2.28E+01	2.59E+01	8.90E+01
Ar-41	1.47E-01	2.75E-01	4.00E-01	2.25E-01	1.05E+00
Total for Period	2.74E+01	2.85E+01	3.19E+01	3.59E+01	1.24E+02
2. IODINES: Curies					
I-131	8.23E-04	1.89E-04	5.61E-04	3.35E-04	1.91E-03
I-133	2.84E-03	1.34E-03	1.77E-03	2.06E-03	8.01E-03
I-135	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	3.66E-03	1.53E-03	2.33E-03	2.40E-03	9.92E-03
3. PARTICULATES WITH HALF-LIVES > 8 DAYS[2]: Curies					
Cr-51	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	1.73E-06	1.82E-05	0.00E+00	0.00E+00	1.99E-05
Fe-55	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	1.60E-04	1.07E-04	1.45E-05	3.55E-05	3.17E-04
Ni-63	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	1.56E-04	1.62E-04	2.11E-04	2.50E-04	7.79E-04
Sr-90	<LLD	<LLD	<LLD	<LLD	<LLD
Zr/Nb-95	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	<LLD	7.59E-06	<LLD	<LLD	7.59E-06
Ba/La[3] -140	2.82E-04	1.26E-04	1.56E-04	1.43E-04	7.07E-04
Ce-141	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	6.00E-04	4.21E-04	3.82E-04	4.29E-04	1.83E-03
4. Carbon-14: Curies					
C-14	6.26E+00	7.13E+00	7.27E+00	7.32E+00	2.80E+01
5. Tritium: Curies					
H-3	1.70E+01	1.66E+01	2.20E+01	1.61E+01	7.17E+01
6. Gross Alpha: Curies					
Gross Alpha	<LLD[1]	<LLD[1]	<LLD[1]	<LLD[1]	<LLD[1]

(1) Gaseous LLD's reported on page 9 of 77 (2) Includes La-140 and Mo-99 per the ODCM (3) Equilibrium assumed, i.e., value for each nuclide is ½ of total

Effluent & Waste Disposable Summary

Gaseous Effluents Release Point: Main Chimney (Elevated) Batch Mode (1)
Period: January – December 2015 Unit: 1 & 2

Batch Mode [1]					
Nuclides Released	**Jan – Mar 2015**	**Apr – Jun 2015**	**Jul – Sep 2015**	**Oct – Dec 2015**	**Total**
1. FISSION AND ACTIVATION GASES: Curies					
Kr-85	N/A	N/A	N/A	N/A	N/A
Kr-85m	N/A	N/A	N/A	N/A	N/A
Kr-87	N/A	N/A	N/A	N/A	N/A
Kr-88	N/A	N/A	N/A	N/A	N/A
Xe-133	N/A	N/A	N/A	N/A	N/A
Xe-135	N/A	N/A	N/A	N/A	N/A
Xe-135m	N/A	N/A	N/A	N/A	N/A
Xe-138	N/A	N/A	N/A	N/A	N/A
Ar-41	N/A	N/A	N/A	N/A	N/A
Total for Period	N/A	N/A	N/A	N/A	N/A
2. IODINES: Curies					
I-131	N/A	N/A	N/A	N/A	N/A
I-133	N/A	N/A	N/A	N/A	N/A
I-135	N/A	N/A	N/A	N/A	N/A
Total for Period	N/A	N/A	N/A	N/A	N/A
3. PARTICULATES WITH HALF-LIVES > 8 DAYS[2]: Curies					
Cr-51	N/A	N/A	N/A	N/A	N/A
Mn-54	N/A	N/A	N/A	N/A	N/A
Fe-55	N/A	N/A	N/A	N/A	N/A
Fe-59	N/A	N/A	N/A	N/A	N/A
Co-58	N/A	N/A	N/A	N/A	N/A
Co-60	N/A	N/A	N/A	N/A	N/A
Ni-63	N/A	N/A	N/A	N/A	N/A
Zn-65	N/A	N/A	N/A	N/A	N/A
Sr-89	N/A	N/A	N/A	N/A	N/A
Sr-90	N/A	N/A	N/A	N/A	N/A
Zr/Nb-95	N/A	N/A	N/A	N/A	N/A
Mo-99	N/A	N/A	N/A	N/A	N/A
Ag-110m	N/A	N/A	N/A	N/A	N/A
Cs-134	N/A	N/A	N/A	N/A	N/A
Cs-137	N/A	N/A	N/A	N/A	N/A
Ba/La -140	N/A	N/A	N/A	N/A	N/A
Ce-141	N/A	N/A	N/A	N/A	N/A
Ce-144	N/A	N/A	N/A	N/A	N/A
Total for Period	N/A	N/A	N/A	N/A	N/A
4. Carbon-14: Curies					
C-14	N/A	N/A	N/A	N/A	N/A
5. Tritium: Curies					
H-3	N/A	N/A	N/A	N/A	N/A
6. Gross Alpha: Curies					
Gross Alpha	N/A	N/A	N/A	N/A	N/A

(1) Quad Cities Station performed no batch gaseous releases in 2015.

(2) Includes La-140 and Mo-99 per the ODCM

Effluent & Waste Disposable Summary

Gaseous Effluents Release Point Reactor Vent (Mixed Mode) Continuous Mode
Period: January – December 2015 Unit: 1 & 2

Continuous Mode					
Nuclides Released	**Jan – Mar 2015**	**Apr – Jun 2015**	**Jul – Sep 2015**	**Oct – Dec 2015**	**Total**
1. FISSION AND ACTIVATION GASES: Curies					
Kr-85	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	<LLD	1.39E+00	<LLD	<LLD	1.39E+00
Xe-135	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	<LLD	<LLD	<LLD	<LLD	<LLD
Ar-41	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	<LLD	1.39E+00	<LLD	<LLD	1.39E+00
2. IODINES: Curies					
I-131	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	<LLD	<LLD	<LLD	<LLD	<LLD
3. PARTICULATES WITH HALF-LIVES > 8 DAYS[2]: Curies					
Cr-51	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	2.55E-04	1.65E-05	3.56E-05	1.67E-05	3.24E-04
Ni-63	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	<LLD	<LLD	<LLD	<LLD	<LLD
Zr/Nb-95	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	1.17E-05	<LLD	3.39E-06	7.10E-06	2.27E-05
Ba/La -140	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	2.67E-04	1.65E-05	3.95E-05	2.38E-05	3.47E-04
4. Carbon-14: Curies					
C-14	1.94E-01	2.20E-01	2.25E-01	2.27E-01	8.66E-01
5. Tritium: Curies					
H-3	3.45E+00	3.84E+00	2.38E+00	3.49E+00	1.32E+01
6. Gross Alpha: Curies					
Gross Alpha	<LLD[1]	<LLD[1]	<LLD[1]	<LLD[1]	<LLD[1]

(1) Gaseous LLD's reported on page 9 of 77 **(2)** Includes La-140 and Mo-99 per the ODCM

Effluent & Waste Disposable Summary

Gaseous Effluents Release Point Reactor Vent (Mixed Mode) Batch Mode
Period: January – December 2015 Unit: 1 & 2

Batch Mode [1]					
Nuclides Released	**Jan – Mar 2015**	**Apr – Jun 2015**	**Jul – Sep 2015**	**Oct – Dec 2015**	**Total**
1. FISSION AND ACTIVATION GASES: Curies					
Kr-85	N/A	N/A	N/A	N/A	N/A
Kr-85m	N/A	N/A	N/A	N/A	N/A
Kr-87	N/A	N/A	N/A	N/A	N/A
Kr-88	N/A	N/A	N/A	N/A	N/A
Xe-133	N/A	N/A	N/A	N/A	N/A
Xe-135	N/A	N/A	N/A	N/A	N/A
Xe-135m	N/A	N/A	N/A	N/A	N/A
Xe-138	N/A	N/A	N/A	N/A	N/A
Ar-41	N/A	N/A	N/A	N/A	N/A
Total for Period	N/A	N/A	N/A	N/A	N/A
2. IODINES: Curies					
I-131	N/A	N/A	N/A	N/A	N/A
I-133	N/A	N/A	N/A	N/A	N/A
I-135	N/A	N/A	N/A	N/A	N/A
Total for Period	N/A	N/A	N/A	N/A	N/A
3. PARTICULATES WITH HALF-LIVES > 8 DAYS[2]: Curies					
Cr-51	N/A	N/A	N/A	N/A	N/A
Mn-54	N/A	N/A	N/A	N/A	N/A
Fe-55	N/A	N/A	N/A	N/A	N/A
Co-58	N/A	N/A	N/A	N/A	N/A
Co-60	N/A	N/A	N/A	N/A	N/A
Ni-63	N/A	N/A	N/A	N/A	N/A
Zn-65	N/A	N/A	N/A	N/A	N/A
Sr-89	N/A	N/A	N/A	N/A	N/A
Sr-90	N/A	N/A	N/A	N/A	N/A
Zr/Nb-95	N/A	N/A	N/A	N/A	N/A
Mo-99	N/A	N/A	N/A	N/A	N/A
Ag-110m	N/A	N/A	N/A	N/A	N/A
Cs-134	N/A	N/A	N/A	N/A	N/A
Cs-137	N/A	N/A	N/A	N/A	N/A
Ba/La -140	N/A	N/A	N/A	N/A	N/A
Ce-141	N/A	N/A	N/A	N/A	N/A
Ce-144	N/A	N/A	N/A	N/A	N/A
Total for Period	N/A	N/A	N/A	N/A	N/A
4. Carbon-14: Curies					
C-14	N/A	N/A	N/A	N/A	N/A
5. Tritium: Curies					
H-3	N/A	N/A	N/A	N/A	N/A
6. Gross Alpha: Curies					
Gross Alpha	N/A	N/A	N/A	N/A	N/A

(1) Quad Cities Station performed no batch gaseous releases. (2) Includes La-140 and Mo-99 per the ODCM

Effluent & Waste Disposal Summary

Liquid Effluents – Summation of all Releases

Period: January – December 2015 Unit: 1 & 2

A. Fission & Activation Products	Unit	Jan – Mar 2015	Apr – Jun 2015	Jul – Sep 2015	Oct – Dec 2015	Total	Est. Total Error %
1. Total Release (not including tritium, gases & alpha)	Ci	3.75E-03	0.00E+00	0.00E+00	0.00E+00	3.75E-03	4.8
2 Average diluted concentration during period	µCi/mL	1.59E-11	N/A	N/A	N/A		
3. Percent of applicable limit [1]	WB	5.81E-04	N/A	N/A	N/A		
	Organ	2.60E-04	N/A	N/A	N/A		
4. Maximum diluted concentration during batch discharges	µCi/mL	1.55E-09	N/A	N/A	N/A		
B. Tritium							
1. Total Release	Ci	5.25E-01	0.00E+00	0.00E+00	0.00E+00	5.25E-01	4.1
2. Average diluted concentration during period	µCi/mL	2.23E-09	N/A	N/A	N/A		
3. Percent of applicable limit	%	7.43E-05	N/A	N/A	N/A		
C. Dissolved & Entrained Gases							
1. Total Release	Ci	1.40E-04	0.00E+00	0.00E+00	0.00E+00	1.40E-04	4.8
2. Average diluted concentration during period	µCi/mL	5.93E-13	N/A	N/A	N/A		
3. Percent of applicable limit	%	2.97E-07	N/A	N/A	N/A		
D. Gross Alpha Activity							
1. Total Release	Ci	<LLD[2]	<LLD[2]	<LLD[2]	<LLD[2]	<LLD[2]	14.8
E. Volume Of Waste Released (prior to dilution)	Liters	2.09E+05	0.00E+00	0.00E+00	0.00E+00	2.09E+05	
F. Volume Of Dilution Water Used During Period	Liters	2.36E+11	4.57E+11	4.94E+11	3.57E+11	1.54E+12	

(1) Whole body/organ (ODCM)

(2) Liquid LLD's reported on page 10 of 77

Effluent & Waste Disposal Summary

Liquid Effluents Release Point Mississippi River Continuous Mode
Period: January – December 2015 Unit: 1 & 2

Continuous Mode					
Nuclides Released	**Jan – Mar 2015**	**Apr – Jun 2015**	**Jul – Sep 2015**	**Oct – Dec 2015**	**Total**
1. FISSION AND ACTIVATION PRODUCTS: Curies					
Cr-51	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Mn-54	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Fe-55	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Co-58	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Co-60	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Ni-63	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Zn-65	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Sr-89	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Sr-90	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Zr/Nb-95	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Mo-99	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Ag-110m	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Cs-134	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Cs-137	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Ba/La -140	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Ce-141	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Ce-144	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Total for Period	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
2. DISSOLVED AND ENTRAINED NOBLE GASES: Curies					
Xe-133	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Xe-135	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)
Total for Period	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)	<LLD(1)

(1) Liquid LLD's reported on page 10 of 77

Effluent & Waste Disposal Summary

Liquid Effluents Release Point Mississippi River Batch Mode (River Discharge Tank)
Period: January – December 2015 Unit: 1 & 2

Batch Mode					
Nuclides Released	**Jan – Mar 2015**	**Apr – Jun 2015**	**Jul – Sep 2015**	**Oct – Dec 2015**	**Total**
1. FISSION AND ACTIVATION PRODUCTS: Curies					
Cr-51	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	8.51E-05	<LLD	<LLD	<LLD	8.51E-05
Fe-55	8.80E-04	<LLD	<LLD	<LLD	8.80E-04
Co-58	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	2.74E-03	<LLD	<LLD	<LLD	2.74E-03
Ni-63	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	<LLD	<LLD	<LLD	<LLD	<LLD
Zr/Nb-95	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	4.35E-05	<LLD	<LLD	<LLD	4.35E-05
Ba/La -140	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	3.75E-03	<LLD	<LLD	<LLD	3.75E-03
2. DISSOLVED AND ENTRAINED NOBLE GASES: Curies					
Xe-133	1.40E-04	<LLD	<LLD	<LLD	1.40E-04
Xe-135	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	1.40E-04	<LLD	<LLD	<LLD	1.40E-04

(1) Liquid LLD's reported on page 10 of 77

Effluent & Waste Disposable Summary

GASEOUS EFFLUENT LLD's (Most Restrictive)

CONTINUOUS MODE

NUCLIDE LOWER LIMITS OF DETECTION (LLD's) **1. Fission gases**	**UNIT**	**LLD Value**	**ODCM Required LLD**
Ar-41	uCi/cc	2.42E-08	None
Kr-85	uCi/cc	3.34E-06	None
Kr-85m	uCi/cc	1.33E-08	None
Kr-87	uCi/cc	6.28E-08	1E-04
Kr-88	uCi/cc	4.21E-08	1E-04
Xe-133	uCi/cc	2.49E-08	1E-04
Xe-133m	uCi/cc	9.83E-08	1E-04
Xe-135	uCi/cc	1.04E-08	1E-04
Xe-135m	uCi/cc	1.02E-06	None
Xe-138	uCi/cc	3.02E-06	1E-04
NUCLIDE LOWER LIMITS OF DETECTION (LLD's) **2. Iodines**	**UNIT**	**LLD Value**	**ODCM Required LLD***
I-131	uCi/cc	6.29E-13	1E-12
I-133	uCi/cc	7.65E-12	1E-10
I-135	uCi/cc	4.03E-09	None
NUCLIDE LOWER LIMITS OF DETECTION (LLD's) **3. Particulates, Tritium, Gross Alpha**	**UNIT**	**LLD Value**	**ODCM Required LLD***
H-3	uCi/cc	9.62E-12	1E-06
Cr-51	uCi/cc	3.83E-12	None
Mn-54	uCi/cc	4.86E-13	None
Fe-55	uCi/cc	2.64E-12	1E-11
Co-58	uCi/cc	4.45E-13	1E-11
Fe-59	uCi/cc	7.00E-13	1E-11
Co-60	uCi/cc	9.80E-13	1E-11
Zn-65	uCi/cc	1.17E-12	None
Ni-63	uCi/cc	9.58E-14	None
Sr-89	uCi/cc	1.61E-13	None
Sr-90	uCi/cc	1.21E-13	1E-11
Nb-95	uCi/cc	5.23E-13	1E-11
Zr-95	uCi/cc	9.11E-13	1E-11
Mo-99	uCi/cc	8.02E-12	1E-11
Ag-110m	uCi/cc	4.09E-13	1E-11
Cs-134	uCi/cc	3.65E-13	1E-11
Cs-137	uCi/cc	6.45E-13	1E-11
Ba-140	uCi/cc	1.97E-12	1E-11
La-140	uCi/cc	2.18E-12	None
Ce-141	uCi/cc	6.12E-13	None
Ce-144	uCi/cc	2.19E-12	1E-11
Gross Alpha	uCi/cc	4.05E-14	1E-11

* ODCM REC LLD's for weekly samples. These may be increased by a factor of 10 for daily samples

Effluent & Waste Disposable Summary

LIQUID EFFLUENT LLD's (Most Restrictive)

NUCLIDE LOWER LIMITS OF DETECTION (LLD's) **3. Liquids**	**UNIT**	**LLD Value**	**ODCM Required LLD**
H-3	uCi/cc	1.06E-06	1.00E-05
Ar-41	uCi/cc	1.28E-07	None
Kr-85	uCi/cc	1.53E-05	None
Kr-85m	uCi/cc	6.09E-08	None
Kr-87	uCi/cc	1.74E-07	1.00E-05
Kr-88	uCi/cc	2.18E-07	1.00E-05
Xe-133	uCi/cc	1.40E-07	1.00E-05
Xe-133m	uCi/cc	3.85E-07	1.00E-05
Xe-135	uCi/cc	5.18E-08	1.00E-05
Xe-135m	uCi/cc	1.92E-06	None
Xe-138	uCi/cc	6.85E-06	1.00E-05
Cr-51	uCi/cc	4.49E-07	None
Mn-54	uCi/cc	6.41E-08	5.00E-07
Fe-55	uCi/cc	6.80E-07	1.00E-06
Fe-59	uCi/cc	1.35E-07	5.00E-07
Ni-63	uCi/cc	5.12E-07	None
Co-58	uCi/cc	6.88E-08	5.00E-07
Co-60	uCi/cc	1.29E-07	5.00E-07
Zn-65	uCi/cc	1.52E-07	5.00E-07
Sr-89	uCi/cc	3.64E-08	5.00E-08
Sr-90	uCi/cc	2.26E-08	5.00E-08
Mo-99	uCi/cc	4.79E-07	5.00E-07
Ag-110m	uCi/cc	4.87E-08	None
I-131	uCi/cc	5.12E-08	1.00E-06
Cs-134	uCi/cc	5.55E-08	5.00E-07
Cs-137	uCi/cc	7.77E-08	5.00E-07
Ce-141	uCi/cc	7.32E-08	5.00E-07
Ce-144	uCi/cc	3.39E-07	5.00E-06
Gross Alpha	uCi/cc	9.81E-08	1.00E-07

Discussion of Radiation and Radioactivity [1]

Radiation and Radioactivity

All matter is made of atoms. An atom is the smallest part into which matter can be broken down and still maintain all its chemical properties. Nuclear radiation is energy, in the form of waves or particles that is given off by unstable, radioactive atoms. Radioactive material exists naturally and has always been a part of our environment. The earth's crust, for example, contains radioactive uranium, radium, thorium, and potassium. Some radioactivity is a result of nuclear weapons testing. Examples of radioactive fallout that is normally present in environmental samples are cesium-137 and strontium-90. Some examples of radioactive materials released from a nuclear power plant are cesium-137, iodine-131, strontium-90, and cobalt-60. Radiation dose is measured in units of millirem; much like temperature is measured in degrees. A millirem is a measure of the biological effect of the energy deposited in tissue. The natural and man-made radiation dose received in one year by the average American is 300 to 400 mrem (References 2, 3, 4 in Table - 1 below). Radioactivity is measured in curies. A curie is that amount of radioactive material needed to produce 37,000,000,000 nuclear disintegrations per second.

Sources of Radiation

As mentioned previously, naturally occurring radioactivity has always been a part of our environment. Table - 1 shows the sources and doses of radiation from natural and man-made sources.

Table – 1

Radiation Sources and Corresponding Doses [1]

NATURAL		MAN-MADE	
Source	Radiation Dose (millirem/year)	Source	Radiation Dose (millirem/year)
Internal, inhalation [2]	228	Medical [3]	300
External, space	33	Consumer [4]	13
Internal, ingestion	29	Industrial[5]	0.3
External, terrestrial	21	Occupational	0.5
		Weapons Fallout	<1
		Nuclear Power Plants	<1
Approximate Total	311	Approximate Total	314

(1) Information from NCRP Reports 160 and 94
(2) Primarily from airborne radon and its radioactive progeny
(3) Includes CT (147 mrem), nuclear medicine (77 mrem), interventional fluoroscopy (43 mrem) and conventional radiography and fluoroscopy (33 mrem)
(4) Primarily from cigarette smoking (4.6 mrem), commercial air travel (3.4 mrem), building materials (3.5 mrem), and mining and agriculture (0.8 mrem)
(5) Industrial, security, medical, educational, and research

(1) This section adapted with permission of Ken Sejkora, Pilgrim Nuclear Power Station

Supplemental Information

Cosmic radiation from the sun and outer space penetrates the earth's atmosphere and continuously interacts with us via rays and charged particles. Some of this cosmic radiation interacts with gases and particles in the atmosphere, making them radioactive in turn. These radioactive byproducts from cosmic ray interaction are referred to as cosmogenic radionuclides. Isotopes such as beryllium-7 and carbon-14 are formed in this way. Exposure to cosmic and cosmogenic sources of radioactivity results in about 33 mrem of radiation dose per year.

Additionally, natural radioactivity is in our body and in the food we eat (about 29 millirem/yr), the ground we walk on (about 21 millirem/yr) and the air we breathe (about 228 millirem/yr). The majority of a person's annual dose results from exposure to radon and thoron in the air we breathe. These gases and their radioactive decay products arise from the decay of naturally occurring uranium, thorium and radium in the soil and building products such as brick, stone, and concrete. Radon and thoron levels vary greatly with location, primarily due to changes in the concentration of uranium and thorium in the soil. Residents at some locations in Colorado, New York, Pennsylvania, and New Jersey have a higher annual dose as a result of higher levels of radon/thoron gases in these areas. In total, these various sources of naturally-occurring radiation and radioactivity contribute to a total dose of about 311 mrem per year.

In addition to natural radiation, we are normally exposed to radiation from a number of man-made sources. The single largest doses from man-made sources result from therapeutic and diagnostic applications of x-rays and radiopharmaceuticals. The annual dose to an individual in the U.S. from medical and dental exposure is about 300 mrem. Consumer products, such as televisions and smoke detectors, contribute about 13 mrem/yr. Much smaller doses result from weapons fallout (less than 1 mrem/yr) and nuclear power plants. Typically, the average person in the United States receives about 314 mrem per year from man-made sources.

Facility: Quad Cities Nuclear Power Station (QCNPS) January – December 2015
Licensee: Exelon Generation Company

1. Regulatory Limits

a. For Noble Gases:

Dose rate (per site)
1. Less than 500 mrem/year to the whole body
2. Less than 3000 mrem/year to the skin.

Dose Gamma Radiation (per unit)
1. Less than or equal to 5 mrad/quarter.
2. Less than or equal to 10 mrad/year.

Beta Radiation (per unit)
1. Less than or equal to 10 mrad/quarter.
2. Less than or equal to 20 mrad/year.

b,c. For Iodine-131, Iodine-133, Carbon-14, and for all radionuclides in particulate form with half-lives greater than 8 days.

Dose Rate
1. Less than 1500 mrem/year. (per site)

Dose (per unit)
1. Less than or equal to 7.5 mrem/quarter.
2. Less than or equal to 15 mrem/year.

d. For Liquid: (per unit)
Less than or equal to 1.5 mrem to the whole body during any calendar quarter.
Less than or equal to 5 mrem to any organ during any calendar quarter.
Less than or equal to 3 mrem to the whole body during any calendar year.
Less than or equal to 10 mrem to any organ during any calendar year.

2. Maximum Permissible Concentration

a,b,c. For fission and activation gases, iodines, and particulates with half-lives greater than 8 days, allowable release limits are calculated by solving equations 2.0-5 and 2.0-6 from the Offsite Dose Calculation Manual Part II Chapter 2. The alarm setpoint is conservatively set at approximately 10% of the 10CFR20 limit.

d. For liquid effluents, with the exception of tritium and dissolved & entrained noble gasses, allowable release limits are calculated by solving equations 2.0-1 and 2.0-2 from the Offsite Dose Calculation Manual Part II Chapter 2. The MPC values used for the monitors were as follows:

Radwaste discharge 3.07E-06 µCi/ml
Service water 1.00E-05 µCi/ml

The allowable release limits for tritium and dissolved & entrained noble gases are as follows :

Tritium : 3.00E-03 uCi/mL taken from Reg Guide 1.21

Dissolved & Entrained noble gases: 2.00E-04 uCi/mL taken from NUREG 1302

3. Average Energy

The average gamma energy used to calculate the alarm setpoints for the noble gas monitors are as follows:

9.66E-01 MeV for Quarter 1
9.67E-01 MeV for Quarter 2
9.67E-01 MeV for Quarter 3
9.65E-01 MeV for Quarter 4

4. Measurements and Approximations of Total Radioactivity

a. Fission and Activation Gases
b. Iodines
c. Particulates

a,b,c. The main chimney and reactor building ventilation exhaust systems are continually monitored for iodines and particulates. These samples are pulled every 7 days and analyzed by gamma isotopic. The particulate papers are composited every 31 days and sent to a vendor for Sr-89/90 and gross alpha analysis. Noble gas grab samples are pulled and analyzed by gamma isotopic weekly. Tritium samples are pulled and analyzed every month.

Supplemental Information

The Sr-89/90 and gross alpha curies released values reported are actual. On a real time basis, the portion of the "percent of applicable limit" for these contributors is reported based on projections using the previous available data. The actual results are obtained by editing the ODCM software inputs when the vendor results become available. Therefore, the "percent of applicable limits" in this report are actual.

The continuous strip chart recorders for the monitors on the release points are reviewed for spikes and the activity released is calculated. An additional calculated activity for noble gases is added to the main chimney or reactor building release each month if applicable. This calculation is done because most of the grab samples show less than the lower limit of detection due to the low amount of activity and the large dilution flow at the sample point. The calculation takes into account the normal offgas train and the gland steam contribution to the release.

The average flow at the release points is used to calculate the curies released. There are no ground level releases from QCNPS. All monitored releases are considered either elevated or mixed mode.

d. Carbon-14

Quad Cities has estimated its Carbon-14 generation and release in accordance with EPRI Technical Report 1021106, "Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents". The Quad Cities estimate of 2.84E+01 Ci of Carbon-14 and the resultant 2.84E+01 Ci $^{14}CO2$ released is based upon a normalized Carbon-14 production rate of 5.10E+00 Ci/GWTh-yr, a gaseous release fraction of 1.00, a Carbon-14 CO2 fraction of 1.00, a reactor power rating of 2957 MWTh/unit for 2 units, and a calculated Effective Full Power days based upon Total Core Therms data. The maximum expected annual dose contribution from Carbon-14 has been calculated to be 2.08E-01 mrem/yr organ dose and 4.15E-02 mrem/yr total body dose. This was obtained using maximum gross thermal capacity maintained for 365 days for both units.

e. Liquid Effluents

River Discharge Tanks, when performed, are analyzed prior to discharge by gamma isotopic. A composite representative portion of this sample is saved. This is composited with other discharges that occurred every 31 days and is analyzed for tritium and gross alpha. The monthly composites are composited quarterly and sent to a vendor for Sr-89/90, Fe-55, and Ni-63 analyses. The discharge bay is sampled every 31 days and analyzed for gamma by isotopic, for tritium and for gross alpha. It is sampled quarterly and sent to a vendor for Sr-89/90, Fe-55, and Ni-63 analysis. On a real time basis, the portion of the "percent of applicable limit" for these contributors is based on projections using scaling factors.

Supplemental Information

The actual results are obtained by editing the ODCM software inputs when the vendor results become available. Therefore, the "percent of applicable limits" in this report are actual. The tank volumes and activities are used to calculate the curies released for the River Discharge Tank. The total water released during the quarter and the activity is used to calculate the diluted activity released at the discharge bay, from batch discharges.

f. Estimated Total Error Percent

The estimated total error percents were calculated by taking the square root of the sum of the squares of errors for sampling and measurement parameters.

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

Samples are analyzed such that the Technical Specification LLD requirements are met. When a nuclide is not detected during the quarter, then <LLD is reported. The most conservative LLD's used for counting effluent samples are included in this report.

5. Batch Releases

a. Liquid

1.	Number of releases:	1
2.	Total time:	9.07E+02 minutes
3.	Maximum time:	9.07E+02 minutes
4.	Average time:	9.07E+02 minutes
5.	Minimum time:	9.07E+02 minutes
6.	Average stream flow:	6.09E+01 GPM

b. Gaseous

1. NONE

Supplemental Information

6. Abnormal Releases

   a. Liquid
      1. NONE

   b. Gaseous
      1. NONE

7. Radiological Impact on Man

   a. Liquid Dose to a Member of the Public for 2015

      Total Body: 8.71E-06 mrem (Adult)

      Organ: 1.30E-05 mrem (Teen/Liver)

   b. Gaseous Dose to a Member of the Public for 2015

      Total Body: 4.29E-02 mrem

      Noble Gas Skin Dose Rate: 5.89E-05 mrem/year

      Organ (Particulate/Iodine/C-14/Tritium): 3.42E-01 mrem (Infant/Thyroid)

      The Quad Cities calculated annual doses from Carbon-14 releases have been calculated using the methodologies outlined in the ODCM. The resultant estimated releases of Carbon-14 resulted in a dose contribution of 3.74E-02 mrem/yr to organ dose (9.14%) and 3.74E-02 mrem/yr to total body dose (92.7%).

Supplemental Information

c. 40 CFR 190 Direct Radiation Dose to a Member of the Public for 2015

Total Body: 7.76E+00 mrem
3.10E+01% of 40 CFR 190 Limit of 25 mrem/year (Total Body)

Organ Dose: 3.42E-01 mrem Infant/Thyroid
1.37E+00 % of 40CFR190 limit of 25 mrem/year (Organ Dose)

Thyroid Dose: 3.42E-01 mrem Infant/Thyroid
4.56E-01% of 40 CFR 190 Limit 75 mrem/yr (Thyroid Dose).

d. Total Body Doses to the Population and Average Doses to Individuals in the Population from All Receiving-Water-Related-Pathways:

Not applicable for QCNPS

e. Total Body Doses to the Population and Average Doses to Individuals in the Population from Gaseous Effluents to a Distance of 50 Miles:

Not applicable for QCNPS

f. Doses From Liquid and Gaseous Effluent to Members of the Public Due to Their Activities Inside the Site Boundary for the Report Period:

Not applicable for QCNPS. Any member of the public that is onsite for a significant period will be issued a dosimeter.

g. Liquid and Gaseous Effluent Radiation Monitors and Instrumentation Unavailability for the Period Beyond the Requirements of the ODCM, Including Sampling Deviation:

No ODCM monitors were unavailable for greater than 30 days in 2015.

10CFR20.1301(a)(1) Compliance Assessment

Quad Cities Station Unit One and Unit Two
Assessment Period 01/01/2015 – 01/01/2016
10CFR20.1301(a)(1) Limit 100.0 mrem/year

Quad Cities Unit 1

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Total	% of Limit
TEDE (mrem)	7.51E-01	9.68E-01	1.00E+00	1.01E+00	3.73E+00	**3.73E+00**

Quad Cities Unit 2

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Total	% of Limit
TEDE (mrem)	1.01E+00	1.01E+00	9.84E-01	1.03E+00	4.03E+00	**4.03E+00**

Submitted by: BASHAM, DAVID C. Date: 27APR2016
David C. Basham

Reviewed by: James Wooldridge Date: 27 APR 2016
James G. Wooldridge

Maximum Doses Resulting From Airborne Releases/Compliance Status

Quad Cities Station - *Unit One/Unit Two*

Type of Dose	Unit One Annual	Unit Two Annual	10 CFR 50 APP. I Yearly Objective	Unit One % of APP. I	Unit Two % of APP. I
Gamma Air (mrad)	2.54E-04	2.54E-04	10.0	2.54E-03	2.54E-03
Beta Air (mrad)	1.37E-04	1.37E-04	20.0	6.85E-04	6.85E-04
Organ (mrem)	1.72E-01	1.72E-01	15.0	1.14E+00	1.14E+00
Critical Person	Child				
Critical Organ	Bone				

The calculation of the above doses was done by an independent contractor utilizing GASPAR, an NRC approved program. The calculation was done with current year meteorological data and equation multipliers outlined in Reg Guide 1.109 and NUREG 0133.

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	6	0	0	0	6
NNE	0	0	4	0	0	0	4
NE	0	0	1	1	0	0	2
ENE	0	2	3	0	0	0	5
E	1	5	4	0	0	0	10
ESE	2	2	1	2	0	0	7
SE	0	6	4	0	0	0	10
SSE	0	10	4	0	0	0	14
S	0	1	0	0	0	0	1
SSW	0	2	0	0	0	0	2
SW	0	9	8	0	0	0	17
WSW	0	0	6	0	0	0	6
W	0	1	6	1	0	0	8
WNW	0	1	1	0	0	0	2
NW	0	1	14	0	0	0	15
NNW	0	1	6	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	3	41	68	4	0	0	116

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	0	0	0	2
NNE	0	0	0	1	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	2	0	0	0	0	2
E	0	0	3	0	0	0	3
ESE	1	0	1	1	0	0	3
SE	0	1	2	0	0	0	3
SSE	1	2	0	0	0	0	3
S	0	3	0	0	0	0	3
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	1	0	0	0	0	1
W	0	0	2	0	0	0	2
WNW	0	0	2	0	0	0	2
NW	0	0	5	0	0	0	5
NNW	0	1	2	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	2	10	19	2	0	0	33

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	2	4	0	0	7
NNE	0	1	2	0	0	0	3
NE	0	1	0	0	0	0	1
ENE	0	1	1	0	0	0	2
E	1	0	1	0	0	0	2
ESE	1	2	4	3	0	0	10
SE	1	1	4	0	0	0	6
SSE	0	3	1	0	0	0	4
S	0	3	0	0	0	0	3
SSW	0	2	0	0	0	0	2
SW	0	7	0	0	0	0	7
WSW	0	3	7	0	0	0	10
W	0	3	8	0	0	0	11
WNW	0	0	2	1	0	0	3
NW	0	8	10	5	0	0	23
NNW	0	0	5	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	3	36	47	13	0	0	99

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Neutral - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	21	41	5	0	0	69
NNE	1	12	38	8	0	0	59
NE	5	8	5	4	0	0	22
ENE	7	19	11	2	0	0	39
E	4	27	25	3	0	0	59
ESE	5	45	9	0	0	0	59
SE	15	32	6	0	0	0	53
SSE	8	23	0	0	0	0	31
S	5	16	1	0	0	0	22
SSW	2	8	3	0	0	0	13
SW	7	26	14	0	0	0	47
WSW	6	61	33	1	0	0	101
W	4	57	40	7	0	0	108
WNW	1	20	70	17	0	0	108
NW	2	58	96	15	0	0	171
NNW	2	25	11	3	0	0	41
Variable	0	0	0	0	0	0	0
Total	76	458	403	65	0	0	1002

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	8	12	5	0	0	0	25
NNE	3	3	1	0	0	0	7
NE	4	5	3	0	0	0	12
ENE	11	10	6	0	0	0	27
E	9	13	0	0	0	0	22
ESE	17	22	1	0	0	0	40
SE	12	12	5	0	0	0	29
SSE	16	13	0	0	0	0	29
S	7	7	2	0	0	0	16
SSW	7	20	1	0	0	0	28
SW	6	40	5	0	0	0	51
WSW	8	40	4	0	0	0	52
W	8	58	16	0	0	0	82
WNW	8	48	13	0	0	0	69
NW	8	37	9	0	0	0	54
NNW	9	20	2	0	0	0	31
Variable	2	0	0	0	0	0	2
Total	143	360	73	0	0	0	576

Hours of calm in this stability class: 6
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	5	0	0	0	0	6
NNE	2	2	0	0	0	0	4
NE	3	1	0	0	0	0	4
ENE	8	2	0	0	0	0	10
E	12	4	0	0	0	0	16
ESE	23	11	0	0	0	0	34
SE	15	2	0	0	0	0	17
SSE	13	2	0	0	0	0	15
S	7	3	0	0	0	0	10
SSW	5	3	0	0	0	0	8
SW	2	0	0	0	0	0	2
WSW	9	0	0	0	0	0	9
W	9	4	0	0	0	0	13
WNW	10	1	0	0	0	0	11
NW	2	7	0	0	0	0	9
NNW	2	1	0	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	123	48	0	0	0	0	171

Hours of calm in this stability class: 9
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	2	0	0	0	0	0	2
NE	5	0	0	0	0	0	5
ENE	5	1	0	0	0	0	6
E	8	0	0	0	0	0	8
ESE	20	8	0	0	0	0	28
SE	21	3	0	0	0	0	24
SSE	12	0	0	0	0	0	12
S	6	0	0	0	0	0	6
SSW	1	0	0	0	0	0	1
SW	6	0	0	0	0	0	6
WSW	2	0	0	0	0	0	2
W	2	1	0	0	0	0	3
WNW	2	1	0	0	0	0	3
NW	1	0	0	0	0	0	1
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	93	14	0	0	0	0	107

Hours of calm in this stability class: 38
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	2	0	0	2
E	0	0	1	4	0	0	5
ESE	0	0	0	1	0	0	1
SE	0	0	0	2	0	0	2
SSE	1	0	2	2	2	0	7
S	0	1	0	0	0	0	1
SSW	0	0	0	1	0	0	1
SW	0	0	0	1	0	0	1
WSW	0	0	1	2	0	0	3
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	2	3	0	5
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	1	1	4	17	5	0	28

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	1	0	0	2
NNE	0	0	0	2	1	0	3
NE	0	0	0	0	0	0	0
ENE	0	0	0	1	1	0	2
E	0	0	0	2	1	0	3
ESE	0	0	1	1	2	0	4
SE	0	0	5	3	1	0	9
SSE	1	1	3	0	2	0	7
S	0	1	0	0	0	0	1
SSW	0	0	1	3	0	1	5
SW	0	0	0	1	2	0	3
WSW	0	0	0	4	0	0	4
W	0	0	1	1	2	0	4
WNW	0	0	2	0	0	0	2
NW	0	0	0	6	1	0	7
NNW	0	0	7	3	0	0	10
Variable	0	0	0	0	0	0	0
Total	1	2	21	28	13	1	66

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	5	2	0	0	7
NNE	0	1	0	2	0	0	3
NE	0	0	1	1	0	0	2
ENE	0	3	1	2	1	0	7
E	0	0	0	1	0	0	1
ESE	0	0	0	2	2	0	4
SE	0	1	2	0	1	0	4
SSE	0	1	2	0	3	0	6
S	0	1	0	1	0	0	2
SSW	0	4	0	1	1	0	6
SW	0	0	5	6	2	0	13
WSW	0	1	1	3	2	0	7
W	0	0	1	1	0	1	3
WNW	0	0	0	4	0	2	6
NW	0	0	5	8	3	0	16
NNW	0	0	5	0	1	0	6
Variable	0	0	0	0	0	0	0
Total	0	12	28	34	16	3	93

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Neutral - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	8	14	30	14	0	66
NNE	0	5	12	27	9	1	54
NE	3	4	12	3	4	5	31
ENE	1	0	9	15	4	0	29
E	1	6	16	14	8	2	47
ESE	0	16	22	8	4	0	50
SE	2	7	14	15	6	0	44
SSE	2	6	21	18	2	0	49
S	1	4	15	9	5	3	37
SSW	0	7	6	15	6	2	36
SW	1	9	27	14	11	2	64
WSW	0	10	34	40	19	0	103
W	2	13	26	31	25	2	99
WNW	0	3	12	44	55	15	129
NW	1	13	24	71	67	11	187
NNW	0	10	15	29	4	3	61
Variable	0	0	0	0	0	0	0
Total	14	121	279	383	243	46	1086

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	6	15	15	3	0	42
NNE	2	2	2	6	0	0	12
NE	0	3	7	3	2	0	15
ENE	0	1	7	5	2	0	15
E	0	4	8	4	0	0	16
ESE	1	2	19	6	0	0	28
SE	0	4	22	11	10	0	47
SSE	0	2	9	13	2	0	26
S	0	9	11	8	5	1	34
SSW	1	3	10	20	22	2	58
SW	3	5	10	24	6	2	50
WSW	2	2	5	16	9	1	35
W	1	4	4	25	17	0	51
WNW	3	3	16	37	5	0	64
NW	1	5	17	23	11	0	57
NNW	5	2	5	11	2	0	25
Variable	0	0	0	0	0	0	0
Total	22	57	167	227	96	6	575

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	4	2	4	0	0	12
NNE	0	2	4	8	0	0	14
NE	0	1	3	1	0	0	5
ENE	0	3	1	1	0	0	5
E	0	4	7	1	0	0	12
ESE	0	4	6	4	0	0	14
SE	1	5	14	9	3	0	32
SSE	0	4	4	5	2	0	15
S	0	2	2	12	1	0	17
SSW	0	5	14	15	0	0	34
SW	0	3	1	2	0	0	6
WSW	2	2	1	0	0	0	5
W	1	0	1	12	1	0	15
WNW	0	1	4	4	0	0	9
NW	0	1	6	2	0	0	9
NNW	0	2	7	0	0	0	9
Variable	0	0	0	0	0	0	0
Total	6	43	77	80	7	0	213

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: January - March 2015
Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	2	1	0	3
SE	0	2	3	7	0	0	12
SSE	0	4	0	4	1	0	9
S	2	1	0	8	0	0	11
SSW	1	4	7	3	0	0	15
SW	1	2	2	10	0	0	15
WSW	0	2	6	2	0	0	10
W	0	2	2	0	0	0	4
WNW	1	1	4	1	0	0	7
NW	0	2	3	1	0	0	6
NNW	0	0	1	1	0	0	2
Variable	0	0	0	0	0	0	0
Total	5	21	29	39	2	0	96

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	3	0	0	0	5
NNE	1	3	8	0	0	0	12
NE	0	6	12	0	0	0	18
ENE	1	5	22	0	0	0	28
E	1	9	8	1	0	0	19
ESE	4	20	10	7	0	0	41
SE	3	9	10	0	0	0	22
SSE	2	15	4	0	0	0	21
S	0	7	4	0	0	0	11
SSW	0	14	13	0	0	0	27
SW	0	38	13	0	0	0	51
WSW	0	6	4	0	0	0	10
W	0	8	18	2	1	0	29
WNW	0	6	11	10	0	0	27
NW	2	6	11	6	0	0	25
NNW	2	6	3	0	0	0	11
Variable	0	0	0	0	0	0	0
Total	16	160	154	26	1	0	357

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	3	0	0	0	4
NNE	0	1	1	0	0	0	2
NE	0	4	1	0	0	0	5
ENE	0	6	3	0	0	0	9
E	0	4	2	0	0	0	6
ESE	0	4	1	0	0	0	5
SE	0	3	0	0	0	0	3
SSE	0	2	0	0	0	0	2
S	0	0	1	0	0	0	1
SSW	0	3	1	0	0	0	4
SW	0	0	2	0	0	0	2
WSW	0	2	3	0	0	0	5
W	0	4	1	3	0	0	8
WNW	0	2	2	3	1	0	8
NW	0	7	1	2	0	0	10
NNW	0	1	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	0	44	22	8	1	0	75

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	0	0	0	0	1
NNE	0	4	3	0	0	0	7
NE	3	10	1	0	0	0	14
ENE	1	4	4	1	0	0	10
E	0	14	1	0	0	0	15
ESE	0	5	2	0	0	0	7
SE	1	8	1	0	0	0	10
SSE	0	1	0	0	0	0	1
S	0	2	0	0	0	0	2
SSW	1	7	0	0	0	0	8
SW	3	6	3	0	0	0	12
WSW	2	7	4	1	0	0	14
W	1	7	5	1	1	0	15
WNW	1	6	2	5	0	0	14
NW	1	7	3	0	0	0	11
NNW	0	7	2	0	0	0	9
Variable	0	0	0	0	0	0	0
Total	14	96	31	8	1	0	150

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Neutral - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	6	17	1	0	0	0	24
NNE	1	16	9	1	0	0	27
NE	2	37	20	0	0	0	59
ENE	6	34	24	2	0	0	66
E	6	58	29	0	0	0	93
ESE	0	33	20	3	0	0	56
SE	1	20	6	0	0	0	27
SSE	8	11	0	0	0	0	19
S	7	6	0	0	0	0	13
SSW	13	14	0	0	0	0	27
SW	18	25	7	0	0	0	50
WSW	7	20	13	1	0	0	41
W	7	22	19	9	0	0	57
WNW	2	11	25	21	1	0	60
NW	6	18	22	1	0	0	47
NNW	3	9	5	0	0	0	17
Variable	1	0	0	0	0	0	1
Total	94	351	200	38	1	0	684

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	8	0	0	0	0	10
NNE	6	10	1	0	0	0	17
NE	9	20	4	0	0	0	33
ENE	16	34	3	0	0	0	53
E	12	20	15	0	0	0	47
ESE	10	33	6	0	0	0	49
SE	23	28	0	0	0	0	51
SSE	7	7	0	0	0	0	14
S	9	9	1	0	0	0	19
SSW	12	16	2	0	0	0	30
SW	22	45	8	0	0	0	75
WSW	12	25	1	0	0	0	38
W	8	15	5	0	0	0	28
WNW	11	24	0	0	0	0	35
NW	6	24	2	0	0	0	32
NNW	7	12	2	0	0	0	21
Variable	1	0	0	0	0	0	1
Total	173	330	50	0	0	0	553

Hours of calm in this stability class: 10
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	1	0	0	0	0	4
NNE	3	2	0	0	0	0	5
NE	11	2	0	0	0	0	13
ENE	8	7	0	0	0	0	15
E	13	1	0	0	0	0	14
ESE	20	7	0	0	0	0	27
SE	22	4	0	0	0	0	26
SSE	12	4	0	0	0	0	16
S	4	3	0	0	0	0	7
SSW	0	1	0	0	0	0	1
SW	4	0	0	0	0	0	4
WSW	5	2	0	0	0	0	7
W	7	2	0	0	0	0	9
WNW	6	0	0	0	0	0	6
NW	1	0	0	0	0	0	1
NNW	3	1	0	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	122	37	0	0	0	0	159

Hours of calm in this stability class: 14
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	4	0	0	0	0	0	4
NNE	1	1	0	0	0	0	2
NE	2	0	0	0	0	0	2
ENE	6	0	0	0	0	0	6
E	12	1	0	0	0	0	13
ESE	18	8	0	0	0	0	26
SE	12	0	0	0	0	0	12
SSE	11	0	0	0	0	0	11
S	7	0	0	0	0	0	7
SSW	1	1	0	0	0	0	2
SW	4	0	0	0	0	0	4
WSW	2	0	0	0	0	0	2
W	8	1	0	0	0	0	9
WNW	9	0	0	0	0	0	9
NW	2	1	0	0	0	0	3
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	100	13	0	0	0	0	113

Hours of calm in this stability class: 66
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	0	0	0	0	1
NNE	0	0	2	1	0	0	3
NE	0	0	3	7	0	0	10
ENE	0	0	10	5	0	0	15
E	0	2	4	1	1	0	8
ESE	0	0	8	6	8	0	22
SE	0	2	8	1	0	0	11
SSE	0	1	5	5	9	0	20
S	0	0	2	3	9	6	20
SSW	0	1	10	22	3	1	37
SW	0	0	5	0	2	0	7
WSW	0	0	1	0	1	0	2
W	0	1	5	3	1	1	11
WNW	0	1	0	7	2	7	17
NW	0	0	0	4	2	1	7
NNW	2	0	0	0	1	0	3
Variable	0	0	0	0	0	0	0
Total	3	8	63	65	39	16	194

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	4	0	0	0	4
NNE	0	0	10	2	0	0	12
NE	0	0	6	5	0	0	11
ENE	0	0	7	5	0	1	13
E	1	2	8	2	1	0	14
ESE	0	1	5	4	0	0	10
SE	0	3	6	2	2	0	13
SSE	0	1	3	1	3	0	8
S	1	1	2	1	1	0	6
SSW	0	5	6	3	1	3	18
SW	0	1	4	3	0	0	8
WSW	0	0	1	2	4	0	7
W	0	2	0	3	4	4	13
WNW	0	1	7	5	6	4	23
NW	0	1	3	5	3	0	12
NNW	1	0	6	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	3	18	78	43	25	12	179

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	4	1	0	0	6
NNE	0	4	7	1	0	0	12
NE	1	3	12	1	0	0	17
ENE	0	2	13	6	0	2	23
E	0	3	15	2	0	0	20
ESE	0	2	0	1	1	1	5
SE	0	3	6	3	2	0	14
SSE	0	1	3	0	4	0	8
S	0	0	3	2	2	1	8
SSW	0	3	1	3	1	2	10
SW	0	2	1	5	0	0	8
WSW	0	2	3	4	0	0	9
W	0	4	6	4	2	3	19
WNW	0	7	4	3	5	6	25
NW	0	2	6	2	2	2	14
NNW	0	3	9	0	0	0	12
Variable	0	0	0	0	0	0	0
Total	2	41	93	38	19	17	210

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Neutral - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	11	12	3	0	0	27
NNE	1	3	12	10	3	0	29
NE	3	5	23	16	20	0	67
ENE	0	5	28	43	5	0	81
E	1	13	38	26	6	1	85
ESE	0	5	13	32	8	2	60
SE	0	3	11	16	9	0	39
SSE	2	3	6	12	5	0	28
S	1	3	10	9	4	1	28
SSW	2	24	16	13	11	4	70
SW	1	20	11	12	3	0	47
WSW	3	12	8	21	6	7	57
W	1	9	10	7	17	10	54
WNW	2	10	16	12	25	16	81
NW	3	4	8	22	10	1	48
NNW	0	9	6	4	3	0	22
Variable	0	0	0	0	0	0	0
Total	21	139	228	258	135	42	823

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	9	4	0	0	15
NNE	0	1	12	8	0	0	21
NE	1	1	12	18	0	0	32
ENE	0	2	15	15	2	0	34
E	0	3	20	18	0	1	42
ESE	0	4	5	18	3	1	31
SE	0	0	7	8	2	0	17
SSE	1	5	10	16	4	3	39
S	1	2	17	20	7	3	50
SSW	1	4	16	16	8	0	45
SW	2	4	7	25	14	0	52
WSW	1	1	7	7	1	1	18
W	0	3	10	8	0	0	21
WNW	0	3	6	18	0	0	27
NW	1	1	9	18	1	0	30
NNW	0	1	1	6	1	0	9
Variable	0	0	0	0	0	0	0
Total	8	37	163	223	43	9	483

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	2	0	0	0	3
NNE	0	2	2	1	0	0	5
NE	0	0	6	2	0	0	8
ENE	0	1	6	0	0	0	7
E	1	3	9	2	0	0	15
ESE	1	2	2	7	2	0	14
SE	0	2	0	5	0	0	7
SSE	0	2	9	19	3	0	33
S	1	6	8	12	10	0	37
SSW	0	2	4	5	2	0	13
SW	1	3	2	1	0	0	7
WSW	0	2	2	0	0	0	4
W	0	0	3	2	0	0	5
WNW	0	0	3	1	0	0	4
NW	0	2	7	3	0	0	12
NNW	0	1	4	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	4	29	69	60	17	0	179

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: April - June 2015
Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	1	3	0	0	0	6
NNE	1	3	1	0	0	0	5
NE	1	0	0	0	0	0	1
ENE	0	0	2	1	0	0	3
E	0	1	1	1	0	0	3
ESE	1	2	1	0	1	0	5
SE	1	1	3	2	0	0	7
SSE	0	2	4	3	0	0	9
S	0	3	7	10	0	0	20
SSW	2	1	4	7	0	0	14
SW	0	1	1	1	0	0	3
WSW	0	4	2	0	0	0	6
W	0	2	5	0	0	0	7
WNW	2	2	5	0	0	0	9
NW	0	6	4	0	0	0	10
NNW	1	2	2	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	11	31	45	25	1	0	113

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 2

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	9	14	0	0	0	23
NNE	1	1	2	0	0	0	4
NE	0	0	7	0	0	0	7
ENE	6	5	4	0	0	0	15
E	0	6	3	0	0	0	9
ESE	2	14	3	0	0	0	19
SE	0	9	1	0	0	0	10
SSE	0	13	5	0	0	0	18
S	1	13	1	0	0	0	15
SSW	0	24	1	0	0	0	25
SW	0	24	2	0	0	0	26
WSW	0	15	1	0	0	0	16
W	0	9	10	2	0	0	21
WNW	0	5	12	0	0	0	17
NW	0	10	3	0	0	0	13
NNW	0	13	2	0	0	0	15
Variable	0	0	0	0	0	0	0
Total	10	170	71	2	0	0	253

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	5	6	0	0	0	11
NNE	0	1	1	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	7	1	0	0	0	8
E	0	5	0	0	0	0	5
ESE	1	9	0	0	0	0	10
SE	1	1	0	0	0	0	2
SSE	0	3	0	0	0	0	3
S	1	3	0	0	0	0	4
SSW	0	5	0	0	0	0	5
SW	1	9	0	0	0	0	10
WSW	0	6	1	0	0	0	7
W	0	7	1	0	0	0	8
WNW	0	2	0	0	0	0	2
NW	0	1	1	0	0	0	2
NNW	0	2	1	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	4	66	12	0	0	0	82

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	7	8	0	0	0	16
NNE	2	2	3	0	0	0	7
NE	0	5	3	0	0	0	8
ENE	1	7	0	0	0	0	8
E	1	11	0	0	0	0	12
ESE	1	8	2	0	0	0	11
SE	0	8	0	0	0	0	8
SSE	0	8	0	0	0	0	8
S	1	5	0	0	0	0	6
SSW	0	11	0	0	0	0	11
SW	3	21	2	0	0	0	26
WSW	3	17	2	0	0	0	22
W	0	12	3	0	0	0	15
WNW	0	5	4	0	0	0	9
NW	0	6	1	0	0	0	7
NNW	0	7	0	0	0	0	7
Variable	1	0	0	0	0	0	1
Total	14	140	28	0	0	0	182

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Neutral - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	21	9	0	0	0	31
NNE	1	8	5	0	0	0	14
NE	5	21	11	1	0	0	38
ENE	8	23	0	0	0	0	31
E	6	21	0	0	0	0	27
ESE	5	34	2	0	0	0	41
SE	9	31	2	0	0	0	42
SSE	8	17	0	0	0	0	25
S	10	13	0	0	0	0	23
SSW	6	13	0	0	0	0	19
SW	7	39	3	0	0	0	49
WSW	11	29	18	0	0	0	58
W	6	21	7	0	0	0	34
WNW	5	13	7	0	0	0	25
NW	5	18	5	0	0	0	28
NNW	7	13	4	0	0	0	24
Variable	0	1	0	0	0	0	1
Total	100	336	73	1	0	0	510

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	6	21	3	0	0	0	30
NNE	15	10	0	0	0	0	25
NE	17	16	1	0	0	0	34
ENE	20	16	0	0	0	0	36
E	20	10	0	0	0	0	30
ESE	25	16	0	0	0	0	41
SE	35	12	0	0	0	0	47
SSE	19	11	0	0	0	0	30
S	19	8	0	0	0	0	27
SSW	21	8	0	0	0	0	29
SW	35	27	0	0	0	0	62
WSW	18	23	6	0	0	0	47
W	9	27	4	0	0	0	40
WNW	10	24	2	0	0	0	36
NW	10	41	1	0	0	0	52
NNW	8	11	0	0	0	0	19
Variable	2	0	0	0	0	0	2
Total	289	281	17	0	0	0	587

Hours of calm in this stability class: 8
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	0	0	0	0	0	2
NNE	14	1	0	0	0	0	15
NE	14	3	0	0	0	0	17
ENE	16	0	0	0	0	0	16
E	26	1	0	0	0	0	27
ESE	48	4	0	0	0	0	52
SE	51	6	0	0	0	0	57
SSE	15	1	0	0	0	0	16
S	6	1	0	0	0	0	7
SSW	6	2	0	0	0	0	8
SW	13	1	0	0	0	0	14
WSW	11	2	0	0	0	0	13
W	10	3	0	0	0	0	13
WNW	7	5	0	0	0	0	12
NW	6	1	0	0	0	0	7
NNW	0	0	0	0	0	0	0
Variable	1	0	0	0	0	0	1
Total	246	31	0	0	0	0	277

Hours of calm in this stability class: 40
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	0	0	0	0	1
NNE	1	0	0	0	0	0	1
NE	6	0	0	0	0	0	6
ENE	5	0	0	0	0	0	5
E	20	0	0	0	0	0	20
ESE	37	4	0	0	0	0	41
SE	19	1	0	0	0	0	20
SSE	7	0	0	0	0	0	7
S	6	0	0	0	0	0	6
SSW	3	0	0	0	0	0	3
SW	3	0	0	0	0	0	3
WSW	11	0	0	0	0	0	11
W	6	0	0	0	0	0	6
WNW	2	0	0	0	0	0	2
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	127	5	0	0	0	0	132

Hours of calm in this stability class: 134
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	0	0	5	0	0	5
ENE	0	1	1	1	0	0	3
E	1	5	2	0	0	0	8
ESE	0	0	1	0	0	0	1
SE	0	3	0	0	0	0	3
SSE	0	0	1	1	5	0	7
S	0	0	1	5	1	0	7
SSW	0	0	3	4	0	0	7
SW	0	0	1	0	0	0	1
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	2	3	0	0	5
NW	0	0	1	0	0	0	1
NNW	0	0	1	1	0	0	2
Variable	0	0	0	0	0	0	0
Total	1	9	16	20	6	0	52

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	12	8	1	0	21
NNE	0	0	3	0	0	0	3
NE	0	1	0	2	0	0	3
ENE	0	1	9	1	0	0	11
E	0	2	3	2	0	0	7
ESE	0	1	11	2	0	0	14
SE	0	4	5	1	0	0	10
SSE	0	5	2	1	1	0	9
S	0	2	3	4	3	0	12
SSW	0	4	4	9	3	0	20
SW	0	0	6	6	0	0	12
WSW	0	2	4	1	0	0	7
W	0	1	7	2	3	0	13
WNW	0	0	0	3	0	0	3
NW	0	0	1	5	0	0	6
NNW	0	2	9	3	0	0	14
Variable	0	0	0	0	0	0	0
Total	0	25	79	50	11	0	165

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	10	8	1	0	19
NNE	1	1	2	4	0	0	8
NE	0	0	4	5	0	0	9
ENE	0	8	6	0	0	0	14
E	0	7	7	0	0	0	14
ESE	0	7	7	1	1	0	16
SE	0	2	5	0	0	0	7
SSE	0	6	5	1	0	0	12
S	0	4	4	1	1	0	10
SSW	0	8	7	7	0	0	22
SW	0	6	19	5	1	0	31
WSW	0	5	3	0	0	0	8
W	1	5	5	4	4	2	21
WNW	0	4	3	4	6	1	18
NW	0	4	7	2	1	0	14
NNW	0	3	4	4	0	0	11
Variable	1	0	0	0	0	0	1
Total	3	70	98	46	15	3	235

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Neutral - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	12	14	17	3	0	49
NNE	0	3	2	5	1	0	11
NE	0	19	18	8	4	1	50
ENE	1	7	12	1	0	0	21
E	1	15	16	2	0	0	34
ESE	1	6	19	4	2	0	32
SE	4	11	27	7	4	0	53
SSE	0	11	12	9	1	0	33
S	0	9	11	23	3	1	47
SSW	2	12	33	16	1	0	64
SW	2	15	19	16	3	0	55
WSW	3	9	18	14	7	0	51
W	1	7	13	20	8	0	49
WNW	2	8	12	12	6	0	40
NW	3	10	10	13	4	0	40
NNW	1	7	15	9	1	1	34
Variable	0	0	1	0	0	0	1
Total	24	161	252	176	48	3	664

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	10	9	0	0	22
NNE	0	2	9	8	0	0	19
NE	1	4	18	14	3	0	40
ENE	0	4	22	9	0	0	35
E	0	13	21	2	0	0	36
ESE	1	1	9	20	0	0	31
SE	0	6	15	9	0	0	30
SSE	0	5	11	15	2	0	33
S	0	5	16	40	3	0	64
SSW	0	5	21	30	4	0	60
SW	1	4	14	28	0	0	47
WSW	1	3	16	4	3	0	27
W	0	2	7	22	1	0	32
WNW	0	4	12	18	2	0	36
NW	0	3	9	8	0	0	20
NNW	0	2	9	19	0	0	30
Variable	0	0	0	0	0	0	0
Total	4	66	219	255	18	0	562

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	2	5	0	0	8
NNE	0	4	2	1	0	0	7
NE	0	2	4	2	0	0	8
ENE	0	4	2	1	0	0	7
E	0	4	10	1	0	0	15
ESE	0	3	5	16	3	0	27
SE	1	5	15	9	0	0	30
SSE	0	8	17	22	2	0	49
S	0	7	20	36	7	0	70
SSW	0	2	27	25	0	0	54
SW	0	5	6	4	0	0	15
WSW	1	1	2	3	0	0	7
W	0	1	6	7	1	0	15
WNW	0	4	8	5	1	0	18
NW	1	1	4	4	1	0	11
NNW	0	1	0	3	0	0	4
Variable	0	0	0	0	0	0	0
Total	3	53	130	144	15	0	345

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: July - September 2015
Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	0	0	0	0	3
NNE	1	2	0	0	0	0	3
NE	1	3	0	0	0	0	4
ENE	2	5	1	0	0	0	8
E	1	5	2	1	0	0	9
ESE	1	3	1	0	0	0	5
SE	0	4	4	5	1	0	14
SSE	1	3	8	9	1	0	22
S	0	2	15	10	0	0	27
SSW	1	2	15	10	0	0	28
SW	0	2	4	3	0	0	9
WSW	0	5	9	0	0	0	14
W	3	1	11	0	0	0	15
WNW	1	6	1	3	1	0	12
NW	0	4	1	0	0	0	5
NNW	0	3	0	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	12	53	72	41	3	0	181

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	5	0	0	0	5
ENE	0	0	13	0	0	0	13
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	5	2	0	0	0	7
SSE	0	5	0	0	0	0	5
S	0	7	2	0	0	0	9
SSW	0	13	0	0	0	0	13
SW	0	23	5	0	0	0	28
WSW	0	0	1	0	0	0	1
W	0	3	2	1	0	0	6
WNW	0	1	8	0	0	0	9
NW	0	1	8	0	0	0	9
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	58	46	1	0	0	105

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	1	0	0	1
NE	0	0	1	0	0	0	1
ENE	0	1	2	0	0	0	3
E	0	1	0	0	0	0	1
ESE	0	1	0	0	0	0	1
SE	0	2	0	0	0	0	2
SSE	0	3	0	0	0	0	3
S	1	3	0	0	0	0	4
SSW	0	4	0	0	0	0	4
SW	0	2	1	0	0	0	3
WSW	0	1	1	0	0	0	2
W	0	4	2	0	0	0	6
WNW	0	1	0	2	0	0	3
NW	0	2	2	1	0	0	5
NNW	0	1	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	1	26	9	4	0	0	40

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	2	1	0	0	0	3
NE	0	0	7	0	0	0	7
ENE	0	3	0	0	0	0	3
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	1	0	0	0	0	1
SSE	0	6	0	0	0	0	6
S	0	6	0	0	0	0	6
SSW	1	3	2	0	0	0	6
SW	1	10	3	1	0	0	15
WSW	1	7	3	0	0	0	11
W	1	5	6	4	1	0	17
WNW	0	1	2	2	0	0	5
NW	0	1	1	0	0	0	2
NNW	0	1	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	4	47	26	7	1	0	85

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Neutral - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	13	22	2	0	0	37
NNE	3	19	22	2	0	0	46
NE	4	36	23	0	0	0	63
ENE	4	20	13	9	0	0	46
E	2	13	18	0	0	0	33
ESE	6	24	23	1	0	0	54
SE	5	19	31	4	0	0	59
SSE	4	28	2	0	0	0	34
S	5	21	0	0	0	0	26
SSW	5	10	10	0	0	0	25
SW	5	29	20	5	0	0	59
WSW	3	49	29	8	4	0	93
W	2	66	69	33	5	0	175
WNW	1	28	62	17	0	0	108
NW	4	16	25	2	0	0	47
NNW	2	5	5	0	0	0	12
Variable	0	0	0	0	0	0	0
Total	55	396	374	83	9	0	917

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	11	5	6	0	0	0	22
NNE	7	4	3	1	0	0	15
NE	11	28	7	0	0	0	46
ENE	3	19	13	3	0	0	38
E	3	21	6	0	0	0	30
ESE	4	20	8	0	0	0	32
SE	18	40	15	1	0	0	74
SSE	13	56	2	1	0	0	72
S	3	54	1	0	0	0	58
SSW	6	30	8	0	0	0	44
SW	15	60	10	0	0	0	85
WSW	12	34	8	0	0	0	54
W	7	37	8	0	0	0	52
WNW	16	39	2	0	0	0	57
NW	8	26	1	0	0	0	35
NNW	8	5	0	0	0	0	13
Variable	0	0	0	0	0	0	0
Total	145	478	98	6	0	0	727

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	2	0	0	0	0	0	2
NE	5	1	0	0	0	0	6
ENE	9	1	0	0	0	0	10
E	5	1	0	0	0	0	6
ESE	23	14	0	0	0	0	37
SE	29	15	0	0	0	0	44
SSE	15	3	0	0	0	0	18
S	4	5	0	0	0	0	9
SSW	4	1	0	0	0	0	5
SW	8	1	0	0	0	0	9
WSW	12	1	0	0	0	0	13
W	8	2	0	0	0	0	10
WNW	10	2	0	0	0	0	12
NW	3	0	0	0	0	0	3
NNW	1	1	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	138	48	0	0	0	0	186

Hours of calm in this stability class: 4
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	1	0	0	0	0	0	1
NE	4	0	0	0	0	0	4
ENE	4	0	0	0	0	0	4
E	10	0	0	0	0	0	10
ESE	28	13	0	0	0	0	41
SE	19	2	0	0	0	0	21
SSE	5	0	0	0	0	0	5
S	2	0	0	0	0	0	2
SSW	1	0	0	0	0	0	1
SW	2	1	0	0	0	0	3
WSW	0	0	0	0	0	0	0
W	2	0	0	0	0	0	2
WNW	4	0	0	0	0	0	4
NW	0	1	0	0	0	0	1
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	83	17	0	0	0	0	100

Hours of calm in this stability class: 42
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	2	4	0	6
ENE	0	0	0	1	6	0	7
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	1	0	0	0	1
SSE	0	0	3	3	0	0	6
S	1	1	1	5	1	0	9
SSW	0	0	2	7	2	1	12
SW	0	0	0	3	0	0	3
WSW	0	0	0	0	0	0	0
W	0	0	0	1	0	0	1
WNW	0	0	2	3	0	0	5
NW	0	0	0	2	0	0	2
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	1	1	9	27	13	1	52

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	2	1	0	3
ENE	0	0	0	0	2	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	1	1	1	0	4
SSE	0	1	2	0	0	0	3
S	0	1	1	0	2	1	5
SSW	0	0	7	6	0	1	14
SW	0	0	2	2	0	0	4
WSW	0	0	0	1	0	0	1
W	0	0	0	1	0	0	1
WNW	0	0	3	2	3	0	8
NW	0	0	2	5	0	0	7
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	3	18	20	9	2	52

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	1	0	0	2
NNE	0	1	0	0	0	0	1
NE	0	0	0	7	2	0	9
ENE	0	4	1	0	2	0	7
E	0	0	0	0	0	0	0
ESE	0	0	1	0	0	0	1
SE	0	0	1	0	0	2	3
SSE	0	4	3	3	0	0	10
S	0	3	4	2	0	0	9
SSW	0	1	6	4	1	2	14
SW	0	2	3	2	0	0	7
WSW	0	2	1	5	1	0	9
W	0	0	4	3	0	4	11
WNW	0	4	0	1	1	4	10
NW	0	2	2	3	0	1	8
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	23	27	31	7	13	101

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Neutral - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	6	7	13	11	2	40
NNE	0	11	14	16	12	2	55
NE	1	10	20	31	11	1	74
ENE	1	4	14	22	9	8	58
E	0	5	7	14	10	0	36
ESE	2	5	10	17	15	1	50
SE	0	2	10	13	38	11	74
SSE	1	6	11	10	25	9	62
S	0	2	11	16	16	3	48
SSW	0	4	4	21	24	15	68
SW	1	5	11	14	12	10	53
WSW	0	10	27	25	22	19	103
W	1	9	44	51	41	43	189
WNW	1	4	20	38	35	15	113
NW	0	5	9	22	10	6	52
NNW	3	5	3	8	1	0	20
Variable	0	0	0	0	0	0	0
Total	12	93	222	331	292	145	1095

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 29
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	1	3	1	0	0	6
NNE	0	1	8	0	0	0	9
NE	0	5	8	9	14	0	36
ENE	0	8	5	9	3	0	25
E	0	2	7	11	7	0	27
ESE	0	2	3	8	7	0	20
SE	1	2	5	11	5	0	24
SSE	0	2	13	40	6	1	62
S	0	1	12	50	40	5	108
SSW	0	2	14	29	29	7	81
SW	0	4	3	22	18	4	51
WSW	0	1	6	10	9	0	26
W	0	0	12	27	1	0	40
WNW	1	0	8	24	2	0	35
NW	0	0	12	13	3	0	28
NNW	0	3	12	8	1	0	24
Variable	0	0	0	0	0	0	0
Total	3	34	131	272	145	17	602

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	1	0	0	0	2
NNE	0	1	0	1	0	0	2
NE	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	1	3	2	0	0	6
ESE	0	1	4	3	0	0	8
SE	0	0	1	1	4	0	6
SSE	0	0	0	25	2	0	27
S	0	1	8	27	4	0	40
SSW	0	0	12	9	2	0	23
SW	0	0	2	3	0	0	5
WSW	0	0	4	2	0	0	6
W	0	0	5	8	0	0	13
WNW	1	1	9	7	0	0	18
NW	0	5	8	3	0	0	16
NNW	0	2	5	1	0	0	8
Variable	0	0	0	0	0	0	0
Total	1	13	63	92	12	0	181

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Quad Cities Generating Station

Period of Record: October - December2015
Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)
Winds Measured at 296 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	1	5	0	0	0	7
NNE	0	0	1	0	0	0	1
NE	0	1	0	1	0	0	2
ENE	0	0	1	0	0	0	1
E	1	0	0	0	0	0	1
ESE	0	0	1	0	0	0	1
SE	0	1	4	5	0	0	10
SSE	0	9	2	1	1	0	13
S	0	4	2	8	0	0	14
SSW	0	4	7	7	1	0	19
SW	1	4	3	0	0	0	8
WSW	0	2	5	0	0	0	7
W	0	0	7	0	0	0	7
WNW	0	1	1	0	0	0	2
NW	0	2	0	0	0	0	2
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	3	29	39	22	2	0	95

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

Solid Waste and Irradiated Fuel Shipments

A. Solid Waste Shipped Offsite for Burial or Disposal (Not irradiated fuel)

1. Types of Waste

Types of Waste	Total Quantity (m^3)	Total Activity (Ci)	Period	Est. Total Error %
a. Spent resins, filter sludge's, evaporator bottoms, etc	1.04E+02	1.56E+02	2015	2.50E+01
b. Dry compressible waste, contaminated equip, etc	6.26E+02	1.04E+00	2015	2.50E+01
c. Irradiated components, control rods, etc	N/A	N/A	N/A	N/A
d. Other (describe) Combined Packages of a. and b.	N/A	N/A	N/A	N/A

2. Estimate of major nuclide composition (by waste type)

Major Nuclide Composition		%
a.	Co-60	5.75E+01
	Fe-55	1.29E+01
	Cs-137	2.59E+01
	Ni-63	2.47E+00
b.	Mn-54	2.51E+00
	Fe-55	2.78E+01
	Co-60	6.61E+01
	Zn-65	1.37E+00
c.	N/A	N/A
d.	N/A	N/A

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
13	Highway	Processor
21	Highway	Disposal

B. Irradiated Fuel Shipments (disposition)

Number of Shipments	Mode of Transportation	Destination
N/A	N/A	N/A

C. Changes to the Process Control Program

Revision 11 of RW-AA-100, Process Control Program for Radioactive Wastes, is included as Attachment 2 with the 2015 report. This revision clarifies the defenitions of Blending, Classification Controlling Nuclides, Concentration Averaging, Homogeneous Waste, Mixable Waste, and Nuclides of Concern. Revision 11 updates the reference to NRC-2011-0022 and adds station specific UFSAR references.