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Exelon Nuclear

10 CFR 50.36a(a)(2)
10 CFR 72.44 (d)(3)
Technical Specification 6.9.1.d

RA-12-055

April 27, 2012

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

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
NRC Docket No. 50-219

Independent Spent Fuel Storage Facility
NRC Docket No. 72-15

Subject: Annual Radioactive Effluent Release Report for 2011

Enclosed with this cover letter is the Annual Radioactive Effluent Release Report for the period January 1 to December 31, 2011. This report includes the Oyster Creek Nuclear Generating Station Independent Spent Fuel Storage Facility.

If any further information or assistance is needed, please contact Mike Ford, Chemistry Manager, at 609-971-2432.

Sincerely,

Michael J. Massaro

Michael J. Massaro
Vice President – Oyster Creek Nuclear Generating Station

Enclosure: 2011 Annual Radioactive Effluent Release Report

cc: Administrator, USNRC Region I (w/o attachment)
USNRC Senior Project Manager, Oyster Creek (w/o attachment)
USNRC Senior Resident Inspector, Oyster Creek (w/o attachment)
Craig Stewart, American Nuclear Insurers

NMSS26
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Annual Radioactive Effluent Release Report

2011

Oyster Creek Generating Station

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

January 1, 2011 through December 31, 2011

EXELON GENERATION COMPANY, LLC

OYSTER CREEK GENERATING STATION

DOCKET NO. 50-219 (Oyster Creek Generating Station)

DOCKET NO. 72-15 (Independent Spent Fuel Storage Facility)

Submitted to
The United States Nuclear Regulatory Commission
Pursuant to
Renewed Facility Operating License DPR-16

Annual Radioactive Effluent Release Report

2011

Oyster Creek Generating Station

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EXECUTIVE SUMMARY

Effluents are strictly monitored to ensure that radioactivity released to the environment is as low as reasonably achievable and does not exceed regulatory limits. Effluent control includes the operation of monitoring systems, in-plant and environmental sampling and analyses programs, quality assurance programs for effluent and environmental programs, and procedures covering all aspects of effluent and environmental monitoring.

Both radiological environmental and effluent monitoring indicate that the operation of Oyster Creek Generating Station (OCGS) does not result in significant radiation exposure of the people or the environment surrounding OCGS and is well below the applicable levels set by the Nuclear Regulatory Commission (NRC) and the Environmental Protection Agency (EPA).

There were liquid radioactive effluent releases during 2011 of concentrations of tritium too low to detect at an LLD of 200 picocuries per liter (pCi/L) at the New Jersey Pollution Discharge Elimination System (NJPDES) permitted main condenser outfall. The releases were part of nearly continuous pumping of groundwater at approximately 70 gpm containing low levels of tritium and no detectable gamma. Exelon and the State of New Jersey Department of Environmental Protection (NJDEP) agreed to this remediation action instead of natural attenuation to address concentrations of tritium in groundwater. Well 73 and supporting equipment and piping were installed to pump groundwater to the intake structure at the inlet of the main circulating water pumps. Provisions were established for both batch and continuous releases of groundwater. There was one Batch release in August 2011 and nearly continuous releases for the entire year of 2011. Nearly Continuous releases occurred from January 1, 2011 through December 31, 2011 with a total of 3.28E+07 gallons of groundwater pumped resulting in 9.63E-01 Ci of tritium released to the discharge canal. The dose to the most limiting member of the public due to the release of groundwater was 4.59E-06 mrem.

There were no liquid or gaseous abnormal releases during 2011.

The maximum hypothetical calculated organ dose (GI-LLI) from iodines, tritium, carbon-14 (C-14), and particulates to any individual due to gaseous effluents was 4.42E-01 mrem, which was approximately 2.95E+00 percent of the annual limit of 15 mrem. The majority of organ dose from gaseous effluents was due to C-14. The maximum calculated gamma air dose in the UNRESTRICTED AREA due to noble gas effluents was 9.83E-03 mrem, which was 9.83E-02 percent of the annual 10 CFR 50 Appendix I, As Low As Reasonably Achievable (ALARA) limit of 10 mrem.

For comparison, the background radiation dose averages approximately 300 mrem per year in the Central New Jersey area, which includes approximately 200 mrem from naturally occurring radon gas and 100 mrem from background radiation.

The Independent Spent Fuel Storage Installation (ISFSI) is a closed system and the only exposure is due to direct radiation. Based on offsite TLD readings, dose due to direct radiation from the ISFSI was less than 1 mrem for 2011. Because it is a sealed unit, no radioactive material was released.

Comparison of environmental sampling results to iodine and particulate gaseous effluents released, showed no radioactivity attributable to the operation of OCGS. Both elevated and ground-level release paths were considered in this review, with total iodines released of 1.07E-02 Ci and total particulates with half-lives greater than 8 days released of 5.46E-02 Ci.

Joint Frequency Tables of meteorological data, per Pasquill Category, as well as for all stability classes, are included. All data was collected from the on-site Meteorological Facility. Data recoveries for the 380-foot data and the 33-foot data were 99.2 percent and 99.3 percent, respectively. The UFSAR commits to Regulatory Guide (RG) 1.23 for Meteorological Facility data recovery. RG 1.23 requires data recovery of at least 90% on an annual basis.

2 Introduction

In accordance with the reporting requirements of Technical Specification 6.9.1.d applicable during the reporting period, this report summarizes the effluent release data for OCGS for the period January 1, 2011 through December 31, 2011. This submittal complies with the format 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", Revision 1, June 1974.

Meteorological data was reported in the format specified in Regulatory Guide 1.23, Revision 1, "Meteorological Monitoring Programs for Nuclear Power Plants".

All vendor results were received and included in the report calculations. Therefore the 2011 report is complete.

3 Supplemental Information

Oyster Creek Generating Station Exelon Generation Company, LLC

A. Regulatory Limits:

	Limit	Units	Receptor	ODCM and 10 CFR 50, Appendix I Design Objective Limits
1. Noble Gases:				
a.	≤ 500	mrem/yr	Total Body	ODCM Control 3.11.2.1
	≤ 3000	mrem/yr	Skin	
b.	≤ 5	mrad	Air Gamma	Quarterly air dose limits
	≤ 10	mrad	Air Beta	ODCM Control 3.11.2.2
c.	≤ 10	mrad	Air Gamma	Yearly air dose limits
	≤ 20	mrad	Air Beta	ODCM Control 3.11.2.2
d.	< 5	mrem	Total Body (Gamma)	10 CFR 50, Appendix I, Section II.B.2(b)
	< 15	mrem	Skin (Beta)	
2. Iodines, Tritium, Particulates with Half Life > 8 days:				
a.	≤ 1500	mrem/yr	Any Organ	ODCM Control 3.11.2.1
b.	≤ 7.5	mrem	Any Organ	Quarterly dose limits ODCM Control 3.11.2.3
c.	≤ 15	mrem	Any Organ	Yearly dose limits ODCM Control 3.11.2.3
3. Liquid Effluents				
a.	Concentration 10 CFR 20, Appendix B, Table 2 Column 2			ODCM Control 3.11.1.1
b.	≤ 1.5	mrem	Total Body	Quarterly dose limits
	≤ 5	mrem	Any Organ	ODCM Control 3.11.1.2
c.	≤ 3	mrem	Total Body	Yearly dose limits
	≤ 10	mrem	Any Organ	ODCM Control 3.11.1.2

B. Effluent Concentration Limits:

Gaseous dose rates rather than effluent concentrations are used to calculate permissible release rates for gaseous releases. The maximum permissible dose rates for gaseous releases are defined in ODCM Controls 3.11.2.1.

The Effluent Concentration Limit (ECL) specified in 10 CFR 20, Appendix B, Table 2, Column 2 for identified nuclides, were used to calculate permissible release rates and concentrations for liquid release per ODCM Controls 3.11.1.1. The total activity concentration at the Route 9 bridge for all dissolved or entrained gases was limited to < 2E-04 μCi/ml.

C. Average Energy ($\bar{E}$):

The Oyster Creek ODCM limits the instantaneous dose equivalent rates due to the release of noble gases to less than or equal to 500 mrem/year to the total body and less than or equal to 3000 mrem/year to the skin. The average beta and gamma energies ($\bar{E}$) of the radionuclide mixture in releases of fission and activation gases 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 Plant", may be used to calculate doses in lieu of more sophisticated software. The Oyster Creek radioactive effluent program employs the methodologies presented in U.S. NRC Regulatory Guide 1.109 "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," Revision 1, October 1977. Therefore, average energy ($\bar{E}$) as described in Regulatory Guide 1.21 is not applicable to Oyster Creek.

D. Measurements and Approximations of Total Radioactivity:

1. Fission and Activation Gases

The method used for Gamma Isotopic Analysis is the Canberra Gamma Spectroscopy System with a gas Marinelli beaker. Airborne effluent gaseous activity was continuously monitored and recorded in accordance with the Off Site Dose Calculation Manual (ODCM) Table 4.11.2.1.2-1. Additional grab samples were taken from the stack Radioactive and Gaseous Effluent Monitoring System (RAGEMS) sample point and ground-level release sample points and analyzed at least monthly to determine the isotopic mixture of noble gas activity released for the month. If activity was found in the grab isotopic analysis, the results are entered into Simplified Environmental Effluent Dosimetry System (SEEDS) to calculate dose and dose rates. If no activity is detected in the stack grab samples, post treatment or Off Gas Isotopic Analysis data may be used.

2. Iodines

The method used for Gamma Isotopic Analysis is the Canberra Gamma Spectroscopy System with a charcoal cartridge. Iodine activity was continuously sampled and analyzed in accordance with ODCM Table 4.11.2.1.2-1. Charcoal samples are taken from the stack RAGEMS sample

point and ground-level release sample points and analyzed at least weekly to determine the total activity released from the plant based on the average vent flow rates recorded for the sampling period.

3. Particulates (half-lives > 8 days)

The method used for Gamma Isotopic Analysis is the Canberra Gamma Spectroscopy System with a particulate filter (47 mm). Particulate activity was continuously sampled and analyzed in accordance with ODCM Table 4.11.2.1.2-1. Particulate samples are taken from the stack RAGEMS sample point and ground-level release sample points and analyzed at least weekly to determine the total activity released from the plant based on the average vent flow rates recorded for the sampling period.

4. Tritium

A. Gaseous Effluents

Air from stack and vent effluents was passed through a desiccant column and distilled to remove the moisture collected. An aliquot of the water from the distillate was analyzed for tritium using a liquid scintillation counter.

B. Liquid Effluents

Water from liquid effluents was analyzed for tritium using a liquid scintillation counter.

5. Gross Alpha

Gross alpha was measured by an off-site vendor for both the gas and liquid effluent composite samples.

6. Hard-To-Detects

Hard-To-Detects was measured by an off-site vendor for one set of gas monthly composites. The analysis included Fe-55, I-129, Ni-59, Ni-63, Tc-99, Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240 and Pu241. The results of this analysis are utilized until the next Hard-To-Detect analysis is performed.

7. Carbon-14 (C-14)

The amount of C-14 (Ci) released was estimated using the guidance from EPRI Technical Report 1021106, Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents. The C-14 was released primarily through the stack (97%) with a small amount (3%) released through plant vents. The activity in liquid effluents was determined to not be significant.

The offsite dose from C-14 was calculated using SEEDS, which uses approved ODCM methodologies. The resulting annual dose to a child from gaseous releases of C-14 is about 4.01E-01 mrem to the bone.

8. Liquid Effluents

Groundwater containing tritium was released during 2011. For batch releases, tritium and principal gamma emitters were determined for each batch prior to release. For continuous releases, tritium and principal gamma emitters were determined for a composite sample daily. The concentration of tritium is limited to ensure concentrations were less than 200 pCi/l in the discharge canal. The gamma emitters were limited to less than detectable concentrations. Gross alpha, gross beta and Hard-to-detect analyses (Fe-55, Ni-63, Sr-89 and Sr-90) were determined for monthly composite samples for each type of release (batch or continuous).

The leaks into the groundwater were reported in the 2009 Annual Radioactive Effluent Release Report as abnormal releases. Estimates of the curies of the tritium releases were reported. Doses due to the release of the groundwater to the discharge canal were included in the report. To ensure that amount of activity discharge is accurate and limiting, the activity and doses as a result of discharges during 2011 from the groundwater remediation project are included in this report.

9. Estimated Total Error Present

Procedure CY-AA-170-2100, Estimated Errors of Effluent Measurements, provides the methodology to obtain an overall estimate of the error associated with radioactive effluents.

10. Composite Samples and Lower Limit of Detection (LLD)

Particulate air samples were composited monthly and analyzed for gross alpha, Sr-89 and Sr-90. Groundwater batch and continuous releases were composited at least monthly and analyzed for gross alpha, Sr-89, Sr-90, Fe-55 and Ni-63. These composites are submitted to an offsite vendor laboratory for analysis. The ODCM required LLD for liquid and airborne releases are as follows:

Liquid:	**LLD**
Principal Gamma Emitters (Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, I-131, Ce-141, Cs-134, Cs-137)	5E-07 µCi/ml
Principal Gamma Emitters (Ce-144)	5E-06 µCi/ml
Dissolved and Entrained Gases	1E-05 µCi/ml
H-3	1E-05 µCi/ml
Gross Alpha	1E-07 µCi/ml
Sr-89 and Sr-90	5E-08 µCi/ml
Fe-55 and Ni-63	1E-06 µCi/ml
Airborne	**LLD**
Principal Gamma Emitters (Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, Xe-138)	1E-04 µCi/ml
H-3	1E-06 µCi/ml
I-131	1E-12 µCi/ml
I-133	1E-10 µCi/ml
Principal Gamma Emitters (Mn-54, Fe-59, Co-58, Co-60, Zn-65, Cs-134, Cs-137, Ce-141)	1E-11 µCi/ml
Principal Gamma Emitters (Mo-99, Ce-144)	1E-10 µCi/ml
Gross Alpha	1E-11 µCi/ml
Sr-89, Sr-90	1E-11 µCi/ml

E. Batch Releases:

1. Liquid

	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Number of Batch Releases	0.00E+00	0.00E+00	1.00E+00	0.00E+00
Total time period for batch releases (min)	0.00E+00	0.00E+00	4.50E+01	0.00E+00
Maximum time period for batch release (min)	0.00E+00	0.00E+00	4.50E+01	0.00E+00
Average time period for batch release (min)	0.00E+00	0.00E+00	4.50E+01	0.00E+00
Minimum time period for batch release (min)	0.00E+00	0.00E+00	4.50E+01	0.00E+00
Average Stream flow during period of release (gpm)	N/A	N/A	9.80E+5	N/A

2. Gaseous

There were no batch releases of gaseous effluents during 2011.

F. Abnormal Releases:

There were no abnormal liquid or gaseous releases during 2011.

G. Revisions to the ODCM:

There were no revisions to the ODCM during 2011.

H. Radiation Effluent Monitors Out of Service More Than 30 Days

Per ODCM Control 3.3.3.10, "Radioactive Liquid Effluent Monitoring Instrumentation" and 3.3.3.11, Radioactive Gaseous Effluent Monitoring Instrumentation requires:

With less than the minimum number of radioactive liquid/gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3.3.10-1/3.3.3.11-1. Make every reasonable effort to return the instrument to OPERABLE status within 30 days and, if unsuccessful, explain in the next Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

The following is a discussion of instrumentation out of service for greater than 30 days:

1. The Reactor Building Service Water System Effluent Line was out of service from 3/16/2011 through 5/5/2011. The monitor was taken out of service 3/16/2011 due to a faulty Alarm locked in. The faulty locked in alarm was cleared after maintenance was performed 4/7/2011. During the period the monitor was out of service for the faulty alarm, the monitor was taken out of service for a second reason when it was identified on 3/28/11, that the Service Water Rad Alarm Setpoint may be non-conservative. The alarm setpoint calculation was recalculated and verified to be conservative and the monitor was returned to service 5/5/2011. Though the issue with the faulty locked in alarm was repaired within 30 days, the faulty alarm issue over-lapped with the alarm setpoint issue which was not resolved within 30 days. The alarm setpoint issue was not resolved within 30 days due to the timeline with hiring a vendor to perform the new calculations, performing site reviews of the calculations and Operations acceptance of the calculations and declaring the monitor operable. Both of these issues were entered into our Corrective Action Program (CAP) and corrective actions taken have been documented per process.

I. Releases from the Independent Spent Fuel Storage Facility:

The ISFSI is a closed system and the only exposure would be due to direct radiation. This includes iodines, particulates, and noble gases. Based on offsite TLD readings, dose due to direct radiation from the ISFSI was less than 1 mrem for 2011. Because it is a sealed unit, no radioactive material was released.

J. Program Deviations:

1. During Augmented Off Gas (AOG) sample line pressue testing conducted February 21, 2011, it was discovered that the sample line was not able to maintain pressure due to the filter assembly not being tight. The filter assembly was tightened and the pressure test was completed SAT. This issue was entered into our Corrective Action Program (CAP) and corrective actions implemented to ensure filter assemblies are tight when installed for sampling. The weekly sample results were evaluated against previous sample results for impact to sampling due to the assembly not being tight with no impact identified.
2. The groundwater remediation composite sampler was found out of service for less than one day on March 29, 2011. The composite sampler is required by ODCM Table 4.11.1.1.1-1, Radioactive Liquid Waste Sampling and Analysis Program. There was enough sample in the composite sampler to perform the required analyses and the composite sampler was immediately returned to service.
3. The groundwater remediation composite sampler was found out of service for for approximately 4 hours on August 21, 2011. The composite sampler is required by ODCM Table 4.11.1.1.1-1, Radioactive Liquid Waste Sampling and Analysis Program. The composite sampler was immediately returned to service and enough sample was collected in the composite sampler to perform the required analyses.

Appendix A
Effluent and Waste Disposal Summary

3.1.1 LIST OF TABLES

Table A-1: Gaseous Effluents - Summary Of All Releases

Period: January 1, 2011 through December 31, 2011 **Unit: Oyster Creek**

A. Fission & Activation Gases	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error %
1. Total Release	Ci	3.60E+01	8.44E+01	5.40E+01	5.19E+01	25.00%
2. Average Release Rate for Period	µCi/sec	4.62E+00	1.07E+01	6.79E+00	6.53E+00	
3. Gamma Air Dose	mrad	1.64E-03	6.57E-03	2.20E-03	2.88E-03	
4. Beta Air Dose	mrad	1.23E-03	9.48E-04	1.19E-03	1.37E-03	
5. Percent of ODCM Limit						
- Gamma Air Dose	%	3.28E-02	1.31E-01	4.40E-02	5.76E-02	
- Beta Air Dose	%	1.23E-02	9.48E-03	1.19E-02	1.37E-02	
B. Iodines						
1. Total – I-131	Ci	1.23E-03	6.93E-04	8.15E-04	3.59E-04	25.00%
2. Average Release Rate for Period	µCi/sec	1.58E-04	8.82E-05	1.03E-04	4.52E-05	
3. Percent of ODCM limit	%	*	*	*	*	
C. Particulate						
1. Particulates with T 1/2 > 8 days	Ci	2.52E-02	3.43E-03	1.17E-02	1.47E-02	25.00%
2. Average Release Rate for Period	µCi/sec	3.24E-03	4.36E-04	1.47E-03	1.85E-03	
3. Percent of ODCM limit	%	*	*	*	*	
D. Tritium						
1. Total Release	Ci	5.86E+00	1.10E+01	1.06E+01	1.55E+01	25.00%
2. Average Release Rate for Period	µCi/sec	7.53E-01	1.40E+00	1.33E+00	1.95E+00	
3. Percent of ODCM limit	%	*	*	*	*	
E. Gross Alpha						
1. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	25.00%
2. Average Release Rate for Period	µCi/sec	<LLD	<LLD	<LLD	<LLD	
3. Percent of ODCM limit	%	*	*	*	*	
F. Carbon-14						
1. Total Release	Ci	2.46E+00	2.49E+00	2.53E+00	2.53E+00	
2. Average Release Rate for Period	µCi/sec	3.17E-01	3.17E-01	3.18E-01	3.18E-01	
3. Percent of ODCM limit	%	*	*	*	*	
G. Iodine 131 & 133, Tritium & Particulate						
1. Organ Dose	mrem	4.19E-02	1.21E-01	1.49E-01	1.31E-01	
2. Percent of ODCM Limit	%	5.59E-01	1.61E+00	1.99E+00	1.75E+00	

* ODCM Limit is for combined Iodine, tritium, Carbon-14 and particulate only, which is shown in Item G.

Table A-2: Gaseous Effluents Release Point: Elevated Release

Period: January 1, 2011 through December 31, 2011 **Unit: Oyster Creek**

Nuclides Released		Continuous Mode				Batch Mode			
1. Fission gases	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
Kr- 85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr- 85m	Ci	1.46E+00	4.29E-01	1.71E+00	1.24E+00	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	1.21E+01	1.84E+00	9.18E+00	5.43E+00	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	4.63E+01	4.36E+00	4.12E+00	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	6.15E-01	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	2.24E+01	3.53E+01	3.35E+01	2.97E+01	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	1.37E+00	<LLD	<LLD	<LLD	<LLD
Xe-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	4.99E-01	1.85E+00	6.85E+00	<LLD	<LLD	<LLD	<LLD
Ar-41	Ci	<LLD	<LLD	2.77E+00	3.23E+00	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	3.60E+01	8.44E+01	5.40E+01	5.19E+01	<LLD	<LLD	<LLD	<LLD
2. Iodines									
I-131	Ci	1.23E-03	6.93E-04	8.15E-04	3.59E-04	<LLD	<LLD	<LLD	<LLD
I-133	Ci	5.27E-03	7.13E-04	1.00E-03	5.85E-04	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	6.50E-03	1.41E-03	1.82E-03	9.44E-04	<LLD	<LLD	<LLD	<LLD
3. Particulates									
Sr-89	Ci	1.91E-03	4.47E-04	2.22E-03	7.35E-04	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	5.83E-06	<LLD	<LLD	2.58E-06	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	8.47E-04	<LLD	<LLD	1.24E-05	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	2.16E-02	9.76E-04	1.33E-03	2.35E-03	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	6.68E-05	<LLD	2.79E-05	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	2.22E-04	2.89E-04	3.24E-04	4.96E-04	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	1.95E-04	3.50E-04	5.53E-04	1.02E-03	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	3.45E-04	6.13E-04	8.68E-04	1.61E-03	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	1.16E-05	3.34E-05	5.92E-05	1.63E-04	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	1.32E-05	6.22E-05	7.29E-05	5.10E-04	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	2.51E-02	2.84E-03	5.43E-03	7.74E-03	<LLD	<LLD	<LLD	<LLD
4. Tritium									
H-3	Ci	5.74E+00	1.08E+01	1.03E+01	1.53E+01	<LLD	<LLD	<LLD	<LLD
5. Gross Alpha									
Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14									
C-14	Ci	2.39E+00	2.42E+00	2.45E+00	2.45E+00	<LLD	<LLD	<LLD	<LLD

Table A-3: Gaseous Effluents Release Point: Ground Level Releases

Period: January 1, 2011 through December 31, 2011 **Unit: Oyster Creek**

Nuclides Released		Continuous Mode				Batch Mode			
1. Fission gases	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
Kr- 85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr- 85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
2. Iodines									
I-131	Ci	2.76E-07	1.17E-07	7.05E-08	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	2.76E-07	1.17E-07	7.05E-08	<LLD	<LLD	<LLD	<LLD	<LLD
3. Particulates									
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	7.80E-06	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	4.15E-06	5.23E-07	<LLD	3.45E-08	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	1.25E-06	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	3.23E-06	1.51E-08	<LLD	3.19E-07	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55	Ci	<LLD	5.88E-04	6.25E-03	6.99E-03	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	1.64E-05	5.89E-04	6.25E-03	6.99E-03	<LLD	<LLD	<LLD	<LLD
4. Tritium									
H-3	Ci	1.16E-01	2.38E-01	2.88E-01	2.34E-01	<LLD	<LLD	<LLD	<LLD
5. Gross Alpha									
Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14									
C-14	Ci	7.40E-02	7.49E-02	7.57E-02	7.57E-02	<LLD	<LLD	<LLD	<LLD

Table A-4: Liquid Effluents - Summary Of All Releases

Period: January 1, 2011 through December 31, 2011 **Unit: Oyster Creek**

A. Fission & Activation Products	Units	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error %
1. Total Release not including tritium, gases, alpha	Ci	<LLD	<LLD	<LLD	<LLD	25.00%
2. Average Diluted concentration during period	µCi/ml	<LLD	<LLD	<LLD	<LLD	
3. Total Body Dose	mrem	1.52E-06	1.30E-06	1.05E-06	7.19E-07	
4. Organ Dose	mrem	1.52E-06	1.30E-06	1.05E-06	7.19E-07	
3. Percent of ODCM Limit						
-Total Body Dose	%	1.01E-04	8.67E-05	7.00E-05	4.79E-05	
-Organ Dose	%	3.04E-05	2.60E-05	2.10E-05	1.44E-05	
B. Tritium						
	Units	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	Est. Total Error %
1. Total Release	Ci	3.16E-01	2.67E-01	2.25E-01	1.55E-01	25.00%
2. Average diluted concentration during period	µCi/ml	6.67E-10	7.32E-10	5.86E-10	3.19E-10	
3. Percent of 10CFR20 limit	%	6.67E-05	7.32E-05	5.86E-05	3.19E-05	
C. Dissolved and Entrained Gases						
	Units	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	Est. Total Error %
1. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	25.00%
2. Average diluted concentration	µCi/ml	<LLD	<LLD	<LLD	<LLD	
3. Percent of ODCM limit	%	<LLD	<LLD	<LLD	<LLD	
D. Gross Alpha Activity						
	Units	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	Est. Total Error %
1. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	25.00%
E. Volume of Waste Released prior to dilution	Liters	3.45E+07	2.69E+07	2.75E+07	3.50E+07	
F. Volume of Dilution Water Used During Period	Liters	4.74E+11	3.65E+11	3.84E+11	4.86E+11	

Table A-5: Liquid Release Point: Groundwater Remediation

Period: January 1, 2011 through December 31, 2011 **Unit: Oyster Creek**

Nuclides Released		Continuous Mode				Batch Mode			
Fission & Activation Products	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Dissolved Entrained Gases									
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Tritium									
H-3	Ci	3.16E-01	2.67E-01	2.25E-01	1.55E-01	<LLD	<LLD	6.21E-05	<LLD
Gross Alpha									
Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

Appendix B
Solid Waste and Irradiated Fuel Shipments

A. Solid waste shipped offsite for burial or disposal (not irradiated fuel)

1. Type of waste

Types of Waste	Total Quantity (m^3)	Total Activity (Ci)	Period	Est. Total Error%
a. Spent resins,filter sludges, evaporator bottom, etc	1.32E+02	6.90E+02	2011	2.50E+01
b. Dry compressible waste, contaminated equip, etc	6.32E+02	6.11E-01	2011	2.50E+01
c. Irradiated components, control rods,etc	0.00E+00	0.00E+00	2011	2.50E+01
d. Other	5.79E+02	1.37E+02	2011	2.50E+01

1. Estimate of Major Nuclide Composition (By Waste Type)

Category A – Spent Resin, Filters, Sludges, Evaporator Bottoms, etc.

Isotope	Waste Class A		Waste Class B		Waste Class C	
	Curies	Percent	Curies	Percent	Curies	Percent
H-3	2.27E-01	6.71E-02	9.85E-02	3.48E-02	3.51E-01	5.14E-01
C-14	5.30E-01	1.57E-01	8.41E-02	2.97E-02	1.12E+01	1.64E+01
Cr-51					9.07E-33	1.33E-32
Mn-54	2.79E+01	8.25E+00	3.02E+00	1.07E+00	2.20E-02	3.22E-02
Fe-55	2.43E+02	7.18E+01	1.48E+02	5.23E+01	4.16E+01	6.09E+01
Fe-59					7.32E-21	1.07E-20
Co-57	3.86E-03	1.14E-03				0.00E+00
Co-58	1.17E-01	3.46E-02	1.04E-02	3.67E-03	8.58E-14	1.26E-13
Co-60	5.50E+01	1.63E+01	5.66E+01	2.00E+01	1.18E+01	1.73E+01
Ni-59			4.21E-02	1.49E-02		0.00E+00
Ni-63	2.67E+00	7.89E-01	3.97E+00	1.40E+00	9.50E-01	1.39E+00
Zn-65	3.15E+00	9.31E-01	1.28E+00	4.52E-01	4.72E-04	6.91E-04
Sr-89	3.05E-04	9.02E-05	1.60E-03	5.65E-04	2.33E-20	3.41E-20
Sr-90	1.63E-02	4.82E-03	2.53E-01	8.94E-02	8.51E-02	1.25E-01
Nb-95					5.91E-27	8.65E-27
Tc-99			1.34E-02	4.73E-03		0.00E+00
Ag-110m	2.03E-02	6.00E-03	3.05E-03	1.08E-03		0.00E+00
Sb-125	3.48E-02	1.03E-02			1.21E-02	1.77E-02
Cs-134	2.23E-03	6.59E-04	2.20E-01	7.77E-02	1.85E-02	2.71E-02
Cs-137	5.21E+00	1.54E+00	6.93E+01	2.45E+01	1.73E+00	2.53E+00
Ce-144	2.77E-01	8.19E-02	7.74E-02	2.73E-02	5.59E-05	8.19E-05
Pu-238	1.15E-03	3.40E-04	4.74E-03	1.67E-03	2.58E-02	3.78E-02
Pu-239	2.89E-04	8.54E-05	1.83E-03	6.46E-04	6.16E-03	9.02E-03
Pu-240						0.00E+00
Pu-241	1.12E-01	3.31E-02	9.24E-02	3.26E-02	4.46E-01	6.53E-01
Am-241	1.72E-03	5.08E-04	6.66E-03	2.35E-03	1.09E-02	1.60E-02
Cm-242	1.48E-04	4.38E-05	3.35E-05	1.18E-05	7.46E-08	1.09E-07
Cm-243	1.48E-03	4.38E-04	1.97E-03	6.96E-04		0.00E+00
Cm-244			3.24E-03	1.14E-03	3.02E-02	4.42E-02
Totals	3.38E+02	1.00E+02	2.83E+02	1.00E+02	6.83E+01	1.00E+02

Note: Grey fields are where results were not reported in the NRC Regulatory Guide 1.21 Report

Category B – Dry Compressible Waste, Contaminated Equipment, etc.

Isotope	Waste Class A	
	Curies	Percent
H-3	2.24E-05	3.67E-03
C-14	1.74E-04	2.85E-02
Mn-54	9.17E-02	1.50E+01
Fe-55	3.18E-01	5.21E+01
C0-57	4.37E-05	7.16E-03
Co-58	2.84E-03	4.65E-01
Co-60	1.50E-01	2.46E+01
Ni-63	3.48E-03	5.70E-01
Zn-65	2.28E-02	3.73E+00
Sr-89	8.08E-06	1.32E-03
Sr-90	1.30E-04	2.13E-02
Tc-99	1.23E-05	2.01E-03
Cs-134	1.06E-04	1.74E-02
Cs-137	2.08E-02	3.41E+00
Ce-144	2.18E-04	3.57E-02
Pu-238	1.15E-06	1.88E-04
Pu-239	3.85E-07	6.30E-05
Pu-241	3.00E-04	4.91E-02
Am-241	6.62E-06	1.08E-03
Cm-242	1.47E-06	2.41E-04
Cm-243	3.16E-06	5.17E-04
Cm-244	3.16E-06	5.17E-04
Totals	6.11E-01	1.00E+02

Category C – Irradiated components, control rods, etc.

No Irradiated components, control rods, etc. shipped

Category D - Other - Scrap Metal

Isotope	Waste Class A		Waste Class B	
	Curies	Percent	Curies	Percent
H-3	1.95E-01	4.28E+01	7.47E-04	5.46E-04
C-14	3.51E-05	7.70E-03		
Mn-54	4.64E-02	1.02E+01	4.55E+00	3.33E+00
Fe-55	6.17E-02	1.35E+01	8.71E+01	6.37E+01
C0-57	7.54E-06	1.65E-03		
Co-58	5.82E-03	1.28E+00		
Co-60	1.02E-01	2.24E+01	2.19E+01	1.60E+01
Ni-63	2.24E-03	4.91E-01	1.09E+00	7.97E-01
Zn-65	1.91E-02	4.19E+00	3.99E+00	2.92E+00
Sr-89	3.26E-04	7.15E-02		
Sr-90	2.49E-04	5.46E-02	7.09E-02	5.19E-02
Tc-99	2.65E-06	5.81E-04	1.53E-02	1.12E-02
Cs-134	2.27E-05	4.98E-03	7.92E-02	5.79E-02
Cs-137	2.20E-02	4.82E+00	1.76E+01	1.29E+01
Ce-144	1.17E-03	2.57E-01	2.77E-01	2.03E-01
Pu-238	2.36E-07	5.17E-05	8.58E-04	6.28E-04
Pu-239	7.98E-08	1.75E-05	2.90E-04	2.12E-04
Pu-240			2.90E-04	2.12E-04
Pu-241	5.64E-05	1.24E-02	3.03E-02	2.22E-02
Am-241	1.39E-06	3.05E-04	1.08E-03	7.90E-04
Cm-242	2.78E-07	6.09E-05	2.09E-05	1.53E-05
Cm-243	6.78E-07	1.49E-04	6.55E-04	4.79E-04
Cm-244	6.78E-07	1.49E-04	6.47E-04	4.73E-04
Totals	4.56E-01	1.00E+02	1.37E+02	1.00E+02

Note: Grey fields are where results were not reported in the NRC Regulatory Guide 1.21 Report

2. Solid Waste (Disposition)

Number of Shipments	Mode of Transportation	Destination
19	Hittman Transport Co.	Barnwell Disposal Facility
1	Hittman Transport Co.	Barnwell Processing Facility
3	Hittman Transport Co.	Clive Disposal Facility (Bulk)
20	Hittman Transport Co.	Duratek - Bear Creek
1	Hittman Transport Co.	Duratek - Bear Creek
1	Tri - State Motor Transit	Duratek - Bear Creek
11	Hittman Transport Co.	Duratek Radwaste Processing, Inc.

B. Irradiated Fuel Shipments (disposition).

There were no irradiated fuel shipments

C. Changes to the Process Control Program
There were no changes to the Process Control Plan in 2011.

Appendix C
Radiological Impact to Man

Per ODCM Administrative Control 6.2, an assessment of radiation doses to the likely most exposed MEMBER OF THE PUBLIC from reactor releases and other nearby uranium fuel cycle sources (including doses from primary effluent pathways and direct radiation) for the previous calendar year must be made to show conformance with 40 CFR Part 190, Environmental Radiation Protection Standards for Nuclear Power Operation. For purposes of this calculation the following assumptions were made:

Gaseous

- Nearest resident was SE sector at 925 meters
- Actual 2011 meteorology and measured gaseous effluent releases were used
- All significant pathways were assumed to be present
- Occupancy factor was considered 100%.

Liquid

- Doses calculated in the discharge canal at the Route 9 bridge
- Fish, shellfish and shoreline pathways doses calculated

40 CFR Part 190 Compliance

- Thermoluminescence Dosimetry (TLD) measurements (minus average of control stations) measured direct radiation for the nearest resident
- The highest calculated dose for gamma air dose and liquid total body were summed for total body dose
- The highest calculated dose for gamma air dose, child bone and liquid organ were summed for organ dose
- The limits for Kr-85, I-129, Pu-239 and other alpha-emitting transuranic radionuclides with half-lives greater than one year were not exceeded

The ODCM does not require 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 to be calculated.

A summary of gaseous and liquid radiation doses to most likely exposed MEMBER OF THE PUBLIC was as follows:

Effluent	Applicable Organ	Estimated Dose	Age Group	Location		% of Applicable Limit	Limit	Unit
				Distance (meters)	Direction (toward)			
Noble Gas	Gamma - Air Dose	9.83E-03	All	500	NNE	9.83E-02	10	mrad
Noble Gas	Beta – Air Dose	3.49E-03	All	590	NNW	1.75E-02	20	mrad
Noble Gas	Total Body (Gamma)	3.46E-03	All	995	NNE	6.92E-02	5	mrem
Noble Gas	Skin (Beta)	4.37E-03	All	995	NNE	2.91E-02	15	mrem
Iodine, Particulate, Carbon-14 & Tritium	Bone	4.42E-01	Child	925	SE	2.95E+00	15	mrem
Liquid	Total body	4.59E-06	All	South Route 9 Bridge		1.53E-04	3	mrem
Liquid	Organ	4.59E-06	All			4.59E-05	10	mrem
Direct Radiation	Total Body	<LLD	All	644	SE	<LLD	25	mrem
40 CFR Part 190 Compliance								
Total Dose	Total Body	9.83E-03	All	925	SE	3.93E-02	25	mrem
Total Dose	Bone	4.52E-01	All	925	SE	1.81E+00	25	mrem
Total Dose	Thyroid	1.09E-01	All	925	SE	1.45E-01	75	mrem

Appendix D

Meteorological Data

LIST OF METEOROLOGICAL DATA TABLES **PAGE**

Table D – 1 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Extremely Unstable - 150Ft-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	7	7	0	0	0	14
NNE	0	12	1	0	0	0	13
NE	0	6	5	0	0	0	11
ENE	0	5	12	3	0	0	20
E	0	1	3	0	0	0	4
ESE	0	5	4	0	0	0	9
SE	0	9	23	0	0	0	32
SSE	0	2	3	0	0	0	5
S	1	5	17	11	1	0	35
SSW	0	1	7	3	0	0	11
SW	0	10	7	3	0	0	20
WSW	0	11	18	6	0	0	35
W	0	12	17	6	0	0	35
WNW	1	15	75	27	4	0	122
NW	1	20	69	11	0	0	101
NNW	0	6	15	0	0	0	21
Variable	0	0	0	0	0	0	0
Total	3	127	283	70	5	0	488

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

Table D – 1 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Moderately Unstable - 150Ft-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	3	2	0	0	0	5
NNE	0	1	0	0	0	0	1
NE	0	4	1	0	0	0	5
ENE	0	2	0	1	0	0	3
E	0	0	1	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	1	1	2	0	0	0	4
SSE	0	2	3	0	0	0	5
S	0	1	4	5	0	0	10
SSW	0	0	0	0	0	0	0
SW	0	1	5	0	0	0	6
WSW	1	4	4	0	0	0	9
W	0	5	9	2	0	0	16
WNW	0	5	7	3	1	0	16
NW	1	6	3	0	0	0	10
NNW	1	4	3	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	4	39	44	11	1	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: 10

Table D – 1 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Slightly Unstable - 150Ft-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	2	0	0	0	0	2
NE	0	2	3	0	0	0	5
ENE	0	1	1	0	0	0	2
E	0	0	2	0	0	0	2
ESE	0	0	1	2	0	0	3
SE	0	1	0	0	0	0	1
SSE	0	1	0	0	0	0	1
S	0	2	2	1	0	0	5
SSW	0	1	2	0	0	0	3
SW	0	2	0	0	0	0	2
WSW	0	1	1	0	0	0	2
W	0	3	1	1	0	0	5
WNW	1	4	3	2	0	0	10
NW	0	4	2	1	0	0	7
NNW	1	1	2	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	2	25	20	7	0	0	54

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: 10

Table D – 1 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Neutral - 150Ft-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	12	7	0	0	0	20
NNE	2	12	3	3	0	0	20
NE	1	40	18	0	0	0	59
ENE	0	19	17	1	0	0	37
E	1	6	15	0	0	0	22
ESE	3	7	11	6	0	0	27
SE	1	14	8	4	0	0	27
SSE	1	19	16	10	0	0	46
S	3	13	17	15	0	0	48
SSW	1	9	9	3	0	0	22
SW	1	17	10	0	0	0	28
WSW	7	19	6	0	0	0	32
W	2	27	20	6	0	0	55
WNW	6	28	46	19	3	0	102
NW	1	11	23	15	0	0	50
NNW	0	11	18	2	0	0	31
Variable	0	0	0	0	0	0	0
Total	31	264	244	84	3	0	626

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: 10

Table D – 1 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Slightly Stable - 150Ft-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	4	0	0	0	0	5
NNE	3	3	0	0	0	0	6
NE	5	5	3	0	0	0	13
ENE	2	6	7	1	0	0	16
E	4	3	0	0	0	0	7
ESE	3	1	1	1	0	0	6
SE	4	3	0	0	0	0	7
SSE	5	4	2	2	0	0	13
S	3	14	7	1	2	0	27
SSW	6	28	12	0	2	0	48
SW	7	26	11	1	0	0	45
WSW	12	16	7	2	0	0	37
W	11	40	20	6	1	0	78
WNW	7	59	21	2	0	0	89
NW	9	29	5	0	0	0	43
NNW	4	8	0	0	0	0	12
Variable	1	0	0	0	0	0	1
Total	87	249	96	16	5	0	453

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 1
Hours of missing stability measurements in all stability classes: 10

Table D – 1 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Moderately Stable - 150Ft-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	1	0	0	0	0	0	1
ENE	0	3	0	0	0	0	3
E	0	2	0	0	0	0	2
ESE	0	1	0	0	0	0	1
SE	2	0	0	0	0	0	2
SSE	0	0	0	0	0	0	0
S	1	4	0	0	0	0	5
SSW	4	4	0	0	0	0	8
SW	10	12	0	0	0	0	22
WSW	13	16	0	0	0	0	29
W	10	19	0	0	0	0	29
WNW	12	19	0	0	0	0	31
NW	12	19	0	0	0	0	31
NNW	7	4	0	0	0	0	11
Variable	0	0	0	0	0	0	0
Total	74	103	0	0	0	0	177

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: 10

Table D – 1 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Extremely Stable - 150Ft-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	0	0	0	0	0
ENE	1	0	0	0	0	0	1
E	1	1	0	0	0	0	2
ESE	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	1
SSE	3	0	0	0	0	0	3
S	2	0	0	0	0	0	2
SSW	1	1	0	0	0	0	2
SW	13	4	0	0	0	0	17
WSW	69	26	0	0	0	0	95
W	59	9	0	0	0	0	68
WNW	23	8	0	0	0	0	31
NW	13	9	0	0	0	0	22
NNW	4	0	0	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	190	58	0	0	0	0	248

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: 10

Table D – 2 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Extremely Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	1	0	0	3
NNE	0	0	0	0	0	0	0
NE	0	0	3	2	0	0	5
ENE	0	0	2	1	0	0	3
E	0	0	2	0	0	0	2
ESE	0	0	0	1	0	0	1
SE	0	0	2	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	1	2	3	0	6
W	0	0	0	4	3	0	7
WNW	0	0	1	10	3	1	15
NW	0	0	1	24	24	6	55
NNW	0	0	2	2	4	0	8
Variable	0	0	0	0	0	0	0
Total	0	0	16	47	37	7	107

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: 10

Table D – 2 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Moderately Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	5	4	0	0	9
NNE	0	0	1	0	0	0	1
NE	0	0	1	1	0	0	2
ENE	0	0	6	0	0	0	6
E	0	1	0	0	2	0	3
ESE	0	0	0	1	0	0	1
SE	0	1	9	4	0	0	14
SSE	0	0	1	0	0	0	1
S	0	0	1	0	0	0	1
SSW	0	0	0	5	1	1	7
SW	0	0	1	5	1	0	7
WSW	0	1	5	2	1	0	9
W	0	0	2	2	4	4	12
WNW	0	1	2	6	1	2	12
NW	0	1	3	18	6	4	32
NNW	0	0	5	1	1	0	7
Variable	0	0	0	0	0	0	0
Total	0	5	42	49	17	11	124

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: 10

Table D – 2 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Slightly Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	2	0	0	4
NNE	0	0	1	1	0	0	2
NE	0	1	2	0	0	0	3
ENE	0	0	2	0	1	0	3
E	0	0	2	0	3	0	5
ESE	0	1	0	1	0	0	2
SE	0	1	2	2	0	0	5
SSE	0	0	5	0	0	0	5
S	0	0	1	3	2	1	7
SSW	0	0	2	5	4	0	11
SW	0	1	1	2	2	0	6
WSW	0	0	1	1	3	1	6
W	0	0	3	5	2	2	12
WNW	0	0	7	9	4	13	33
NW	0	0	8	13	14	2	37
NNW	0	1	4	3	1	0	9
Variable	0	0	0	0	0	0	0
Total	0	5	43	47	36	19	150

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: 10

Table D – 2 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Neutral - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	6	14	0	0	22
NNE	0	3	11	14	0	0	28
NE	1	2	14	17	12	7	53
ENE	0	0	18	21	17	3	59
E	0	2	2	13	13	0	30
ESE	0	3	2	10	6	3	24
SE	1	1	4	11	3	5	25
SSE	2	2	14	4	7	1	30
S	1	4	7	17	10	11	50
SSW	1	0	8	22	14	8	53
SW	1	0	4	14	6	2	27
WSW	0	1	4	22	15	2	44
W	0	7	16	17	11	7	58
WNW	0	2	15	40	30	52	139
NW	0	5	14	44	27	30	120
NNW	1	2	10	15	20	11	59
Variable	0	0	0	0	0	0	0
Total	8	36	149	295	191	142	821

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 4
Hours of missing stability measurements in all stability classes: 10

Table D – 2 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Slightly Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	6	5	0	0	13
NNE	0	2	1	4	1	0	8
NE	1	0	2	8	4	0	15
ENE	0	0	4	10	3	0	17
E	0	1	5	6	6	0	18
ESE	0	2	1	2	1	5	11
SE	0	3	2	9	3	7	24
SSE	1	1	5	7	3	8	25
S	1	1	4	8	5	4	23
SSW	0	1	11	9	17	4	42
SW	0	3	4	14	37	8	66
WSW	0	0	0	14	9	6	29
W	0	3	4	15	3	6	31
WNW	0	0	4	29	41	26	100
NW	0	0	1	25	49	4	79
NNW	0	1	1	21	17	1	41
Variable	0	0	0	0	0	0	0
Total	3	20	55	186	199	79	542

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: 10

Table D – 2 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Moderately Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	4	3	19	10	0	37
NNE	0	0	1	2	0	0	3
NE	0	2	1	0	0	0	3
ENE	0	0	0	0	0	0	0
E	0	0	1	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	2	1	0	0	0	3
SSE	0	0	1	0	0	0	1
S	0	1	2	1	1	0	5
SSW	2	2	3	3	3	0	13
SW	0	1	5	7	7	1	21
WSW	0	0	2	2	13	3	20
W	0	1	3	6	2	1	13
WNW	0	0	4	18	17	4	43
NW	0	1	2	12	25	0	40
NNW	0	2	3	24	18	1	48
Variable	0	0	0	0	0	0	0
Total	3	16	32	94	96	10	251

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: 10

Table D – 2 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, January – March, 2011

Oyster Creek Alpha

Period of Record: January - March 2011
Stability Class - Extremely Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	7	0	0	9
NNE	0	2	1	2	0	0	5
NE	1	1	0	1	0	0	3
ENE	0	0	2	1	0	0	3
E	0	1	1	0	0	0	2
ESE	1	1	3	0	0	0	5
SE	0	6	3	0	0	0	9
SSE	0	2	0	0	0	0	2
S	0	1	1	0	0	0	2
SSW	0	1	0	2	1	0	4
SW	1	2	2	4	2	0	11
WSW	0	1	3	10	5	0	19
W	1	2	3	8	0	0	14
WNW	2	1	4	5	6	0	18
NW	0	5	7	13	6	0	31
NNW	0	5	5	1	0	0	11
Variable	0	0	0	0	0	0	0
Total	6	31	37	54	20	0	148

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: 10

Table D – 3 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Extremely Unstable - 150Ft-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	6	1	0	0	0	7
NNE	0	9	2	0	0	0	11
NE	1	10	17	1	0	0	29
ENE	0	21	40	5	0	0	66
E	1	23	33	0	0	0	57
ESE	1	40	32	0	0	0	73
SE	4	22	29	0	0	0	55
SSE	0	12	42	11	0	0	65
S	0	8	53	19	1	0	81
SSW	0	9	9	1	0	0	19
SW	0	8	5	0	0	0	13
WSW	1	7	27	5	0	0	40
W	0	13	25	3	0	0	41
WNW	0	12	21	15	0	0	48
NW	1	16	16	5	0	0	38
NNW	1	13	4	0	0	0	18
Variable	0	0	0	0	0	0	0
Total	10	229	356	65	1	0	661

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 19

Table D – 3 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Moderately Unstable - 150Ft-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	0	0	1	0	0	0	1
NE	1	4	3	0	0	0	8
ENE	0	5	5	1	0	0	11
E	0	3	7	1	0	0	11
ESE	0	6	3	0	0	0	9
SE	2	12	0	0	0	0	14
SSE	0	7	4	0	0	0	11
S	0	4	7	6	0	0	17
SSW	1	1	3	1	0	0	6
SW	1	2	2	0	0	0	5
WSW	0	2	5	0	0	0	7
W	0	3	2	0	0	0	5
WNW	1	6	3	2	0	0	12
NW	0	2	1	0	0	0	3
NNW	0	2	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	8	59	46	11	0	0	124

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: 19

Table D – 3 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Slightly Unstable - 150Ft-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	1	0	0	0	0	1
NE	0	4	1	0	0	0	5
ENE	1	2	2	0	0	0	5
E	1	2	2	1	0	0	6
ESE	0	2	0	2	0	0	4
SE	0	9	0	0	0	0	9
SSE	0	4	2	0	0	0	6
S	0	3	5	3	0	0	11
SSW	0	0	0	1	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	2	0	0	0	0	2
W	1	1	1	0	0	0	3
WNW	0	3	3	0	0	0	6
NW	0	1	2	0	0	0	3
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	4	34	18	7	0	0	63

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: 19

Table D – 3 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Neutral - 150Ft-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	7	1	0	0	0	12
NNE	3	17	0	0	0	0	20
NE	5	37	3	1	0	0	46
ENE	2	23	11	4	0	0	40
E	1	21	17	0	0	0	39
ESE	4	28	8	3	0	0	43
SE	4	48	9	0	1	0	62
SSE	8	33	8	3	0	0	52
S	4	29	49	24	2	0	108
SSW	0	6	8	7	2	0	23
SW	1	6	4	0	0	0	11
WSW	3	9	2	0	0	0	14
W	1	12	5	0	0	0	18
WNW	1	14	9	0	0	0	24
NW	1	8	6	0	0	0	15
NNW	6	11	0	0	0	0	17
Variable	0	0	0	0	0	0	0
Total	48	309	140	42	5	0	544

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: 19

Table D – 3 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Slightly Stable - 150Ft-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	7	0	0	0	0	11
NNE	4	5	1	0	0	0	10
NE	2	3	1	1	0	0	7
ENE	7	1	0	0	0	0	8
E	0	1	0	0	0	0	1
ESE	7	2	0	0	0	0	9
SE	9	3	0	3	0	0	15
SSE	14	13	6	3	1	0	37
S	21	27	17	4	0	0	69
SSW	17	27	16	0	0	0	60
SW	6	33	2	0	0	0	41
WSW	4	40	2	0	0	0	46
W	9	28	3	0	0	0	40
WNW	8	17	1	0	0	0	26
NW	4	10	3	0	0	0	17
NNW	6	8	2	0	0	0	16
Variable	0	0	0	0	0	0	0
Total	122	225	54	11	1	0	413

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: 19

Table D – 3 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Moderately Stable - 150Ft-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	1	0	0	0	0	0	1
ENE	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	1	0	0	0	0	0	1
SE	4	0	0	0	0	0	4
SSE	1	1	0	0	0	0	2
S	9	1	0	0	0	0	10
SSW	6	0	0	0	0	0	6
SW	12	7	0	0	0	0	19
WSW	7	22	0	0	0	0	29
W	6	8	0	0	0	0	14
WNW	6	0	0	0	0	0	6
NW	3	8	0	0	0	0	11
NNW	4	4	0	0	0	0	8
Variable	2	0	0	0	0	0	2
Total	65	51	0	0	0	0	116

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: 19

Table D – 3 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Extremely Stable - 150Ft-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	0	1	0	0	0	0	1
NE	1	0	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	5	1	0	0	0	0	6
SW	17	6	0	0	0	0	23
WSW	51	14	0	0	0	0	65
W	66	7	0	0	0	0	73
WNW	31	5	0	0	0	0	36
NW	15	9	0	0	0	0	24
NNW	5	1	0	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	194	44	0	0	0	0	238

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: 19

Table D – 4 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Extremely Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 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	3	0	0	0	3
NE	0	1	7	8	0	0	16
ENE	0	0	10	5	2	0	17
E	0	1	7	9	0	0	17
ESE	0	1	18	2	0	0	21
SE	0	1	8	0	0	0	9
SSE	0	0	1	1	1	0	3
S	0	0	2	10	4	0	16
SSW	0	1	3	4	2	0	10
SW	0	0	1	4	0	0	5
WSW	0	0	0	3	6	1	10
W	0	0	6	10	4	3	23
WNW	0	0	4	4	9	4	21
NW	0	0	5	2	10	2	19
NNW	0	1	3	1	2	0	7
Variable	0	0	0	0	0	0	0
Total	0	6	79	64	40	10	199

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: 19

Table D – 4 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Moderately Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	3	2	0	0	0	5
NNE	0	0	2	0	0	0	2
NE	0	0	1	1	0	0	2
ENE	1	1	10	2	2	1	17
E	0	3	7	3	1	0	14
ESE	0	4	9	1	0	0	14
SE	0	2	9	0	0	0	11
SSE	0	1	12	1	0	0	14
S	0	0	4	12	5	0	21
SSW	0	0	3	13	2	0	18
SW	0	2	3	1	1	0	7
WSW	0	0	4	2	2	0	8
W	0	0	4	8	2	1	15
WNW	0	1	5	4	7	2	19
NW	0	1	2	2	2	4	11
NNW	0	0	6	1	0	0	7
Variable	0	0	0	0	0	0	0
Total	1	18	83	51	24	8	185

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: 19

Table D – 4 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Slightly Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	5	0	0	0	6
NNE	0	3	0	0	0	0	3
NE	1	0	5	4	0	0	10
ENE	0	1	5	2	2	1	11
E	0	4	10	5	1	0	20
ESE	0	3	7	1	1	0	12
SE	0	4	12	0	0	0	16
SSE	0	3	6	7	0	0	16
S	0	0	11	8	4	1	24
SSW	0	2	1	4	5	0	12
SW	0	3	3	0	0	0	6
WSW	0	2	2	3	1	0	8
W	1	2	3	1	1	1	9
WNW	0	3	6	1	2	0	12
NW	0	2	5	3	3	1	14
NNW	0	1	2	2	1	0	6
Variable	0	0	0	0	0	0	0
Total	2	34	83	41	21	4	185

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: 19

Table D – 4 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Neutral - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	3	3	3	0	0	12
NNE	1	5	10	6	0	0	22
NE	0	6	22	18	4	0	50
ENE	1	8	13	25	5	8	60
E	2	10	14	29	8	1	64
ESE	2	6	23	8	5	7	51
SE	3	27	31	12	5	1	79
SSE	1	15	43	16	3	5	83
S	0	12	42	31	17	14	116
SSW	2	3	17	39	34	24	119
SW	0	4	5	2	3	0	14
WSW	1	1	6	7	4	0	19
W	1	3	4	11	4	0	23
WNW	0	3	10	13	14	1	41
NW	1	3	13	13	10	1	41
NNW	0	4	2	2	0	0	8
Variable	0	0	0	0	0	0	0
Total	18	113	258	235	116	62	802

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 19

Table D – 4 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Slightly Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	4	3	12	1	0	20
NNE	1	2	2	4	0	0	9
NE	0	0	4	0	1	0	5
ENE	0	1	0	1	0	0	2
E	0	5	2	1	1	0	9
ESE	3	7	1	0	0	0	11
SE	1	4	2	1	0	2	10
SSE	1	6	16	7	0	1	31
S	2	2	15	11	5	2	37
SSW	2	9	10	36	30	7	94
SW	0	2	9	23	21	4	59
WSW	0	3	5	11	18	1	38
W	0	3	3	12	13	1	32
WNW	0	1	5	8	18	0	32
NW	0	1	5	8	7	1	22
NNW	0	2	5	6	5	0	18
Variable	0	0	0	0	0	0	0
Total	10	52	87	141	120	19	429

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: 19

Table D – 4 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Moderately Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	3	5	2	0	11
NNE	0	0	1	0	0	0	1
NE	1	0	2	2	0	0	5
ENE	1	0	0	0	0	0	1
E	1	0	0	0	0	0	1
ESE	0	1	0	0	0	0	1
SE	1	0	0	0	0	0	1
SSE	0	3	3	0	0	0	6
S	1	7	2	4	0	0	14
SSW	0	2	3	5	0	0	10
SW	3	3	5	6	6	0	23
WSW	0	3	7	8	17	0	35
W	1	3	4	4	10	4	26
WNW	0	3	2	7	11	5	28
NW	1	6	7	14	7	0	35
NNW	0	3	2	6	6	1	18
Variable	0	0	0	0	0	0	0
Total	11	34	41	61	59	10	216

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: 19

Table D – 4 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, April – June, 2011

Oyster Creek Alpha

Period of Record: April - June 2011
Stability Class - Extremely Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	4	3	7	7	0	21
NNE	0	0	0	2	0	0	2
NE	0	1	1	0	0	0	2
ENE	0	1	0	0	0	0	1
E	0	3	1	0	0	0	4
ESE	0	1	0	0	0	0	1
SE	0	1	0	0	0	0	1
SSE	0	2	0	0	0	0	2
S	0	4	0	0	0	0	4
SSW	4	2	9	3	0	0	18
SW	0	4	4	4	0	0	12
WSW	0	1	3	3	2	0	9
W	1	3	9	2	5	0	20
WNW	0	1	3	5	6	0	15
NW	2	2	3	5	5	0	17
NNW	0	1	3	4	8	0	16
Variable	0	0	0	0	0	0	0
Total	7	31	39	35	33	0	145

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: 19

Table D – 5 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Extremely Unstable - 150Ft-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	4	0	0	0	14
NNE	2	2	3	0	0	0	7
NE	1	10	13	0	0	0	24
ENE	1	15	18	0	0	0	34
E	2	24	11	0	0	0	37
ESE	0	35	21	0	0	0	56
SE	0	32	31	0	0	0	63
SSE	3	7	43	0	0	0	53
S	1	13	68	6	0	0	88
SSW	1	11	14	1	0	0	27
SW	2	23	9	0	0	0	34
WSW	2	17	16	0	0	0	35
W	0	25	10	0	0	0	35
WNW	0	39	22	0	0	0	61
NW	1	23	2	0	0	0	26
NNW	1	13	1	0	0	0	15
Variable	0	0	0	0	0	0	0
Total	19	297	286	7	0	0	609

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 3
Hours of missing stability measurements in all stability classes: 6

Table D – 5 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Moderately Unstable - 150Ft-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	2	1	0	0	0	0	3
NE	2	0	0	0	0	0	2
ENE	0	1	0	0	0	0	1
E	0	3	1	0	0	0	4
ESE	0	5	1	0	0	0	6
SE	0	12	5	0	0	0	17
SSE	0	8	4	0	0	0	12
S	0	5	17	0	0	0	22
SSW	0	1	2	0	0	0	3
SW	1	4	1	0	0	0	6
WSW	1	2	2	0	0	0	5
W	1	4	2	0	0	0	7
WNW	2	6	2	0	0	0	10
NW	3	5	3	0	0	0	11
NNW	1	6	0	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	13	64	40	0	0	0	117

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: 6

Table D – 5 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Slightly Unstable - 150Ft-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	1	1	0	0	0	2
ENE	0	1	1	0	0	0	2
E	1	1	1	0	0	0	3
ESE	0	0	0	0	0	0	0
SE	0	4	0	0	0	0	4
SSE	0	2	1	0	0	0	3
S	0	1	3	1	0	0	5
SSW	0	3	3	0	0	0	6
SW	0	1	1	0	0	0	2
WSW	0	1	0	0	0	0	1
W	0	2	1	0	0	0	3
WNW	0	2	0	0	0	0	2
NW	1	2	0	0	0	0	3
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	3	21	12	1	0	0	37

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: 6

Table D – 5 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Neutral - 150Ft-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	6	1	0	0	0	8
NNE	0	4	2	0	0	0	6
NE	1	7	9	2	1	0	20
ENE	3	14	4	2	2	0	25
E	1	18	5	0	1	0	25
ESE	2	24	1	0	0	0	27
SE	1	31	5	0	0	0	37
SSE	4	25	4	0	0	0	33
S	6	32	40	5	0	0	83
SSW	5	7	13	1	0	0	26
SW	7	17	3	0	0	0	27
WSW	6	14	1	4	0	0	25
W	4	9	1	1	1	0	16
WNW	2	7	1	0	0	0	10
NW	5	9	1	1	0	0	16
NNW	3	4	1	1	0	0	9
Variable	0	0	0	0	0	0	0
Total	51	228	92	17	5	0	393

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

Table D – 5 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Slightly Stable - 150Ft-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	1	0	0	0	0	5
NNE	1	2	0	0	0	0	3
NE	3	16	11	0	0	0	30
ENE	8	12	5	1	2	0	28
E	1	9	2	0	2	0	14
ESE	5	9	0	1	0	0	15
SE	7	17	0	0	0	0	24
SSE	14	18	2	0	0	0	34
S	12	47	14	0	0	0	73
SSW	20	55	10	0	0	0	85
SW	26	61	1	2	0	0	90
WSW	20	42	0	2	0	0	64
W	15	11	1	1	0	0	28
WNW	5	10	0	0	0	0	15
NW	5	8	0	0	0	0	13
NNW	3	8	2	0	0	0	13
Variable	0	0	0	0	0	0	0
Total	149	326	48	7	4	0	534

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

Table D – 5 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Moderately Stable - 150Ft-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	5	0	0	0	0	0	5
NNE	0	0	0	0	0	0	0
NE	2	0	0	0	0	0	2
ENE	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	1	0	0	0	0	0	1
SE	4	0	0	0	0	0	4
SSE	3	3	2	0	0	0	8
S	14	5	1	0	0	0	20
SSW	13	7	0	0	0	0	20
SW	16	12	0	0	0	0	28
WSW	22	17	0	0	0	0	39
W	20	6	0	0	0	0	26
WNW	11	5	0	0	0	0	16
NW	7	9	0	0	0	0	16
NNW	2	2	0	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	121	66	3	0	0	0	190

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: 6

Table D – 5 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Extremely Stable - 150Ft-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	1	1	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	1
SSE	1	0	0	0	0	0	1
S	1	0	0	0	0	0	1
SSW	12	0	0	0	0	0	12
SW	51	4	0	0	0	0	55
WSW	100	10	0	0	0	0	110
W	68	1	1	0	0	0	70
WNW	31	2	0	0	0	0	33
NW	20	4	0	0	0	0	24
NNW	0	2	0	0	0	0	2
Variable	1	0	0	0	0	0	1
Total	290	24	1	0	0	0	315

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: 6

Table D – 6 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Extremely Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 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	4	3	0	0	7
ENE	0	0	9	1	0	0	10
E	0	0	8	4	1	0	13
ESE	0	1	7	1	0	0	9
SE	0	0	8	3	0	0	11
SSE	0	0	5	2	0	0	7
S	0	0	3	4	2	0	9
SSW	0	0	2	6	0	0	8
SW	0	1	4	2	0	0	7
WSW	0	1	7	7	0	0	15
W	0	1	3	2	0	0	6
WNW	0	2	7	6	1	0	16
NW	0	0	4	2	0	0	6
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	6	71	43	4	0	124

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: 6

Table D – 6 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Moderately Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	4	2	0	0	8
NNE	0	0	1	1	0	0	2
NE	0	0	0	1	3	0	4
ENE	0	3	4	0	0	0	7
E	0	2	6	1	0	0	9
ESE	0	2	12	1	0	0	15
SE	0	3	18	1	0	0	22
SSE	0	2	20	8	0	0	30
S	0	0	3	16	2	0	21
SSW	0	0	6	14	0	0	20
SW	0	1	5	0	0	0	6
WSW	0	4	7	5	0	0	16
W	0	5	5	3	0	0	13
WNW	0	2	12	6	0	0	20
NW	0	5	8	3	0	0	16
NNW	0	2	4	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	0	33	115	62	5	0	215

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: 6

Table D – 6 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Slightly Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	1	1	0	0	3
NNE	0	1	1	0	0	0	2
NE	0	0	3	4	1	0	8
ENE	0	0	4	3	0	0	7
E	0	1	1	1	1	0	4
ESE	0	5	5	1	0	0	11
SE	1	2	15	0	0	0	18
SSE	0	2	8	2	0	0	12
S	1	1	15	12	1	0	30
SSW	0	2	12	12	3	0	29
SW	0	0	2	4	0	0	6
WSW	0	2	9	5	0	0	16
W	0	3	2	2	3	0	10
WNW	0	2	6	10	0	0	18
NW	0	2	10	4	0	0	16
NNW	0	4	7	1	0	0	12
Variable	0	0	0	0	0	0	0
Total	2	28	101	62	9	0	202

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

Table D – 6 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Neutral - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	2	6	5	0	0	14
NNE	0	3	4	5	0	0	12
NE	1	0	5	7	16	0	29
ENE	1	2	7	12	11	3	36
E	0	6	17	12	3	1	39
ESE	0	2	21	8	1	2	34
SE	1	11	26	17	0	1	56
SSE	2	7	22	17	1	0	49
S	1	7	31	19	19	1	78
SSW	3	6	26	65	30	2	132
SW	1	9	12	11	1	0	34
WSW	3	8	10	14	3	4	42
W	2	7	9	8	0	4	30
WNW	1	3	8	10	1	1	24
NW	1	6	13	7	1	0	28
NNW	2	2	10	2	3	4	23
Variable	0	0	0	0	0	0	0
Total	20	81	227	219	90	23	660

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 3
Hours of missing stability measurements in all stability classes: 6

Table D – 6 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Slightly Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	5	3	0	2	0	11
NNE	0	1	3	2	0	0	6
NE	0	4	1	2	0	0	7
ENE	1	0	3	6	0	7	17
E	2	4	9	7	0	5	27
ESE	3	3	6	3	0	1	16
SE	3	4	15	8	0	0	30
SSE	0	3	13	10	1	0	27
S	1	8	16	23	6	0	54
SSW	2	6	20	60	7	0	95
SW	2	3	12	46	30	1	94
WSW	2	5	8	28	17	1	61
W	0	2	5	28	9	1	45
WNW	1	3	10	10	3	0	27
NW	0	2	4	4	1	0	11
NNW	0	1	5	2	10	0	18
Variable	0	0	0	0	0	0	0
Total	18	54	133	239	86	16	546

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: 6

Table D – 6 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Moderately Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	1	0	0	3
NNE	1	0	3	1	0	0	5
NE	0	3	1	0	1	0	5
ENE	1	1	4	0	0	0	6
E	0	3	2	1	0	0	6
ESE	0	0	0	0	0	0	0
SE	1	0	1	0	0	0	2
SSE	0	1	4	0	0	0	5
S	0	4	3	0	0	0	7
SSW	0	8	11	9	2	0	30
SW	0	4	3	9	10	0	26
WSW	0	3	5	12	20	5	45
W	0	3	12	8	13	1	37
WNW	2	4	6	5	8	0	25
NW	0	1	3	5	8	0	17
NNW	2	2	3	7	7	0	21
Variable	0	0	0	0	0	0	0
Total	7	37	63	58	69	6	240

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: 6

Table D – 6 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, July – September, 2011

Oyster Creek Alpha

Period of Record: July - September 2011
Stability Class - Extremely Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	5	9	2	0	18
NNE	0	3	2	6	1	0	12
NE	1	4	3	4	0	0	12
ENE	0	0	2	1	0	0	3
E	0	0	6	0	0	0	6
ESE	1	2	0	0	0	0	3
SE	0	1	0	0	0	0	1
SSE	0	0	1	0	0	0	1
S	0	2	2	4	0	0	8
SSW	3	5	4	9	0	0	21
SW	1	5	3	9	1	0	19
WSW	1	7	3	5	6	0	22
W	0	6	14	6	2	5	33
WNW	0	0	12	1	5	0	18
NW	0	1	6	5	4	0	16
NNW	0	0	5	8	2	0	15
Variable	0	0	0	0	0	0	0
Total	7	38	68	67	23	5	208

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: 6

Table D – 7 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Extremely Unstable - 150Ft-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	6	1	0	0	0	7
NNE	1	5	11	0	0	0	17
NE	0	14	8	0	0	0	22
ENE	0	14	0	0	0	0	14
E	1	7	1	0	0	0	9
ESE	1	12	0	0	0	0	13
SE	1	7	8	0	0	0	16
SSE	0	5	4	1	0	0	10
S	1	1	16	6	0	0	24
SSW	0	6	21	5	0	0	32
SW	2	3	19	5	0	0	29
WSW	1	12	16	4	0	0	33
W	1	16	18	3	0	0	38
WNW	0	22	25	7	0	0	54
NW	1	19	46	0	0	0	66
NNW	1	7	6	1	0	0	15
Variable	0	0	0	0	0	0	0
Total	11	156	200	32	0	0	399

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: 13

Table D – 7 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Moderately Unstable - 150Ft-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	2	2	0	0	0	4
NE	0	3	1	0	0	0	4
ENE	0	0	0	0	0	0	0
E	0	3	0	0	0	0	3
ESE	0	1	0	0	0	0	1
SE	0	3	0	0	0	0	3
SSE	0	1	0	0	0	0	1
S	0	2	4	0	0	0	6
SSW	2	1	3	2	0	0	8
SW	1	3	3	0	0	0	7
WSW	2	1	2	0	0	0	5
W	0	6	3	1	0	0	10
WNW	0	7	1	1	0	0	9
NW	1	2	8	1	0	0	12
NNW	0	3	1	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	6	38	28	5	0	0	77

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: 13

Table D – 7 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Slightly Unstable - 150Ft-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	2	0	0	0	2
NE	2	1	0	0	0	0	3
ENE	0	2	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	3	2	0	0	0	5
SSE	0	1	0	0	0	0	1
S	0	1	2	1	0	0	4
SSW	0	0	5	1	0	0	6
SW	0	2	2	0	0	0	4
WSW	0	3	0	0	0	0	3
W	0	2	1	0	0	0	3
WNW	1	2	4	0	0	0	7
NW	0	2	0	0	0	0	2
NNW	1	1	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	4	20	18	2	0	0	44

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: 13

Table D – 7 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Neutral - 150Ft-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	7	0	1	0	0	11
NNE	5	14	1	4	0	0	24
NE	5	7	14	3	0	0	29
ENE	1	10	14	1	0	0	26
E	1	13	10	0	0	0	24
ESE	4	14	5	0	0	0	23
SE	1	5	5	1	0	0	12
SSE	0	6	4	1	1	0	12
S	0	24	27	3	1	0	55
SSW	2	13	26	4	0	0	45
SW	3	16	13	0	0	0	32
WSW	2	13	4	0	0	0	19
W	5	7	11	0	0	0	23
WNW	5	13	12	11	0	0	41
NW	2	26	16	1	0	0	45
NNW	3	9	8	0	0	0	20
Variable	0	0	0	0	0	0	0
Total	42	197	170	30	2	0	441

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 13

Table D – 7 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Slightly Stable - 150Ft-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	3	9	0	0	0	13
NNE	2	7	3	0	0	0	12
NE	5	12	7	0	0	0	24
ENE	4	7	2	1	0	0	14
E	6	6	2	0	0	0	14
ESE	3	1	0	0	0	0	4
SE	5	6	2	0	0	0	13
SSE	3	14	5	2	0	0	24
S	5	30	14	2	0	0	51
SSW	4	41	27	2	1	0	75
SW	7	53	22	1	0	0	83
WSW	11	39	2	1	0	0	53
W	8	27	3	0	0	0	38
WNW	12	49	8	0	0	0	69
NW	12	26	3	0	0	0	41
NNW	4	8	7	0	0	0	19
Variable	0	0	0	0	0	0	0
Total	92	329	116	9	1	0	547

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: 13

Table D – 7 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Moderately Stable - 150Ft-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	1	0	0	0	0	3
NNE	3	0	0	0	0	0	3
NE	2	1	0	0	0	0	3
ENE	1	1	0	0	0	0	2
E	3	1	0	0	0	0	4
ESE	1	0	0	0	0	0	1
SE	2	0	0	0	0	0	2
SSE	3	4	0	0	0	0	7
S	2	1	0	0	0	0	3
SSW	5	10	0	0	0	0	15
SW	10	23	0	0	0	0	33
WSW	13	43	1	0	0	0	57
W	13	16	0	0	0	0	29
WNW	11	13	0	0	0	0	24
NW	14	8	0	0	0	0	22
NNW	10	5	0	0	0	0	15
Variable	0	0	0	0	0	0	0
Total	95	127	1	0	0	0	223

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: 13

Table D – 7 Wind Speed by Direction Measured at 33 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Extremely Stable - 150Ft-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	2	0	0	0	0	0	2
NE	2	0	0	0	0	0	2
ENE	1	0	0	0	0	0	1
E	1	0	0	0	0	0	1
ESE	2	0	0	0	0	0	2
SE	2	0	0	0	0	0	2
SSE	3	0	0	0	0	0	3
S	4	0	0	0	0	0	4
SSW	6	4	0	0	0	0	10
SW	27	13	0	0	0	0	40
WSW	126	23	0	0	0	0	149
W	130	11	0	0	0	0	141
WNW	28	6	0	0	0	0	34
NW	41	17	0	0	0	0	58
NNW	3	2	0	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	382	76	0	0	0	0	458

Hours of calm in this stability class: 3
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 13

Table D – 8 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Extremely Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 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	1	0	1
NE	0	0	6	3	1	0	10
ENE	0	0	3	0	0	0	3
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	2	0	0	0	2
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	1	1
WSW	0	0	1	1	0	0	2
W	0	0	0	3	2	0	5
WNW	0	0	0	0	2	1	3
NW	0	0	1	2	0	0	3
NNW	0	0	0	0	1	0	1
Variable	0	0	0	0	0	0	0
Total	0	0	13	9	7	2	31

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: 13

Table D – 8 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Moderately Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 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	1	1	0	0	2
NE	0	0	4	3	0	0	7
ENE	0	1	1	0	0	0	2
E	0	0	4	0	0	0	4
ESE	0	0	0	0	0	0	0
SE	0	1	1	0	0	0	2
SSE	0	0	3	4	0	0	7
S	0	0	0	0	1	0	1
SSW	0	0	1	1	2	0	4
SW	0	1	1	4	3	2	11
WSW	0	0	2	1	3	3	9
W	0	0	4	1	4	0	9
WNW	0	0	2	1	2	3	8
NW	0	0	11	14	6	0	31
NNW	0	0	0	5	0	0	5
Variable	0	0	0	0	0	0	0
Total	0	3	35	35	21	8	102

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: 13

Table D – 8 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Slightly Unstable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 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	0	0	2	0	0	2
NE	0	5	2	3	0	0	10
ENE	0	2	1	1	0	0	4
E	0	0	3	0	0	0	3
ESE	0	0	0	1	0	0	1
SE	0	1	0	0	0	0	1
SSE	0	1	5	0	0	0	6
S	0	0	2	3	0	0	5
SSW	0	1	2	10	2	1	16
SW	0	0	4	7	6	1	18
WSW	0	3	2	6	2	2	15
W	0	1	4	7	2	0	14
WNW	0	0	9	4	2	4	19
NW	0	4	5	11	7	0	27
NNW	0	1	1	6	3	1	12
Variable	0	0	0	0	0	0	0
Total	0	20	40	61	24	9	154

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: 13

Table D – 8 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Neutral - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	4	7	6	0	18
NNE	3	2	8	8	5	5	31
NE	0	5	11	16	3	3	38
ENE	0	5	9	6	15	16	51
E	1	5	5	1	7	3	22
ESE	0	8	10	11	0	2	31
SE	1	7	6	0	4	1	19
SSE	1	4	7	1	3	2	18
S	0	0	11	5	3	0	19
SSW	2	0	8	40	31	8	89
SW	1	3	2	22	22	7	57
WSW	0	7	14	15	10	2	48
W	1	2	11	14	9	1	38
WNW	2	4	15	10	15	13	59
NW	0	3	6	33	17	12	71
NNW	1	3	6	22	11	4	47
Variable	0	0	0	0	0	0	0
Total	13	59	133	211	161	79	656

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 13

Table D – 8 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Slightly Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	4	10	3	0	19
NNE	0	2	2	7	3	0	14
NE	0	4	4	3	3	0	14
ENE	0	1	2	7	6	0	16
E	0	2	5	3	0	0	10
ESE	0	1	8	5	2	1	17
SE	0	1	6	10	1	1	19
SSE	0	2	6	9	5	5	27
S	0	2	2	12	10	2	28
SSW	0	1	8	33	35	0	77
SW	0	0	5	38	52	5	100
WSW	0	3	8	19	26	4	60
W	0	4	5	18	16	2	45
WNW	0	2	6	18	23	5	54
NW	0	2	4	33	17	3	59
NNW	1	0	3	22	13	0	39
Variable	0	0	0	0	0	0	0
Total	1	29	78	247	215	28	598

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: 13

Table D – 8 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Moderately Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	4	1	7	11	1	24
NNE	0	2	1	2	1	0	6
NE	0	2	1	1	0	0	4
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	1	2	1	0	0	0	4
SE	1	0	0	1	0	0	2
SSE	0	0	1	4	0	0	5
S	0	1	7	4	4	1	17
SSW	0	0	1	3	4	0	8
SW	0	0	3	8	14	5	30
WSW	0	1	3	7	8	13	32
W	0	1	5	5	16	14	41
WNW	0	0	2	6	23	5	36
NW	0	1	3	11	9	2	26
NNW	0	1	2	8	10	1	22
Variable	0	0	0	0	0	0	0
Total	2	16	31	67	100	42	258

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: 13

Table D – 8 Wind Speed by Direction Measured at 380 Feet for various Stability Classes for the Oyster Creek Generating Station, October – December, 2011

Oyster Creek Alpha

Period of Record: October - December2011
Stability Class - Extremely Stable - 380Ft-33Ft Delta-T (F)
Winds Measured at 380 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	5	2	10	10	0	27
NNE	0	2	7	11	0	0	20
NE	0	3	3	3	0	0	9
ENE	1	3	3	0	0	0	7
E	2	2	2	0	0	0	6
ESE	0	4	1	0	0	0	5
SE	0	1	5	0	0	0	6
SSE	0	6	6	0	0	0	12
S	2	2	2	2	1	0	9
SSW	2	4	16	19	5	0	46
SW	2	4	13	29	10	1	59
WSW	2	1	11	17	15	4	50
W	1	7	6	11	11	3	39
WNW	2	4	8	17	3	0	34
NW	0	4	5	21	8	0	38
NNW	2	4	3	10	7	1	27
Variable	0	0	0	0	0	0	0
Total	16	56	93	150	70	9	394

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: 13

Appendix E
ODCM Revisions

None

Appendix F
ERRATA

Revised Annual Radioactive Effluent Release Reports for 2006, 2007, 2008 and 2009 will be submitted under separate cover. The reports are being revised to correct the stack release data that was incorrect due to the stack sample line separation.