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An Exelon/British Energy Company

10 CFR 50.36(a)(2)

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United States Nuclear Regulatory Commission
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Subject: Oyster Creek Generating Station
Docket 50-219
2001 Annual Radioactive Effluent Release Report

Attached is a copy of the Oyster Creek Generating Station Annual Radioactive Effluent Release Report for the period January 1 through December 31, 2001. This submittal is being made in accordance with 10 CFR 50.36(a)(2) and Technical Specification 6.9.1.d.

If any further information or assistance is required, please contact Mr. John Rogers of my staff at 609.971.4893.

Very truly yours,

Ron J. DeGregorio, Vice President
Oyster Creek Generating Station

RJD/JJR
Enclosure

cc: Administrator, Region I
NRC Senior Project Manager
NRC Senior Resident Inspector
Chief, Bureau of Nuclear Engineering, NJ Department of Environmental Protection

IE48

2001
Annual Radioactive Effluent Release Report
Oyster Creek Generating Station
AmerGen Energy Company

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AMERGEN ENERGY COMPANY
OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2001 THROUGH DECEMBER 31, 2001

This report summarizes the radioactive liquid and gaseous effluents from the Oyster Creek Generating Station and the calculated maximum hypothetical radiation exposure to the public resulting from those effluents. This report covers the period of operation from January 1, 2001 through December 31, 2001.

Radioactive gaseous releases from the plant are monitored by radiation monitors and filtering systems installed in the plant stacks. Regarding liquid releases, representative samples are collected and analyzed prior to discharge. These methods accurately determine the types and quantities of radioactive materials being released to the environment.

Utilizing gaseous effluent data, the maximum hypothetical dose to any individual in the vicinity of the plant was calculated using a mathematical model, which is based on the methods defined by the U.S. Nuclear Regulatory Commission. There was no dose attributable to liquid effluents because there were no liquid radioactive releases from the facility in 2001.

The maximum hypothetical doses are conservative overestimates of the actual off-site doses, which are likely to occur. For example, wet deposition due to precipitation events decreases the off-site dose, but this phenomenon is not incorporated into the mathematical dose model.

Radioactive airborne discharges from the facility during 2001 consisted of 394 curies of noble gases, 3.82E-2 (0.0382) curies of radioiodines, 5.57E-2 (0.0557) curies of particulate activity, and 27.9 curies of tritium.

Fifty-one (51) solid, low level radioactive waste shipments, totaling approximately 1943 cubic meters, were shipped from the Oyster Creek Generating Station during the reporting period. This material went to either a licensed burial site or to a waste processor for volume reduction. Dewatering was used in lieu of solidification of resins and filter sludge.

The maximum hypothetical calculated organ dose (bone) to any individual due to gaseous effluents (0.216 mrem/year) was approximately 1.44 percent of the annual limit (Table 1). The maximum hypothetical calculated whole body dose to any individual due to gaseous effluents (5.69E-3 mrem/year) was 1.14 E-3 percent of the annual limit.

The total maximum hypothetical organ dose (bone) of 2.21E-1 mrem/year received by any individual from gaseous effluents from the Oyster Creek Generating Station for the reporting period is over 1350 times lower than the dose the average individual in the Oyster Creek area received from natural background radiation, including that from radon (300 mrem) during the same time period. The natural background radiation dose averages approximately 100 mrem whole body per year in the Central New Jersey area. In addition, the average equivalent dose to the whole body from naturally occurring radon is about 200 mrem per year.

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 1

ANNUAL OFFSITE DOSES DUE TO RADIONUCLIDES IN EFFLUENTS

January 1, 2001 through December 31, 2001

Reference	ODCM 4.6.1.1.4.A	ODCM 4.6.1.1.4.A	ODCM 4.6.1.1.5.A	ODCM 4.6.1.1.5.A	ODCM 4.6.1.1.5.B	ODCM 4.6.1.1.6.A	ODCM 4.6.1.1.6.A	ODCM 4.6.1.1.7.A
	Liquid Total Body mrem	Liquid GI Tract mrem	Noble Gas Total Body mrem	Noble Gas Skin mrem	H-3, Iodines, & Particulates Bone mrem	Noble Gas Gamma Dose mRad	Noble Gas Beta Dose mRad	I-131, I-133, & Particulates Bone mrem
ODCM Limit	3.0 mrem/year	10.0 mrem/year	500 mrem/year	3000 mrem/year	1500 mrem/year	10 mRad/year	20 mRad/year	15 mrem/year
2001 Dose	0.00E+00* mrem	0.00E+00* mrem	5.69E-03 mrem	9.15E-03 mrem	2.16E-01 mrem	1.91E-02 mrem	1.81E-02 mrem	2.16E-01 mrem
Percent of Limit	0.00E+00* Percent	0.00E+00* Percent	1.14E-03 Percent	3.05E-04 Percent	1.44E-02 Percent	1.91E-01 Percent	9.05E-02 Percent	1.44E+00 Percent

Reference	ODCM 4.6.1.1.8.A	ODCM 4.6.1.1.8.A
	All Effluents Bone mrem	All Effluents Thyroid mrem
ODCM Limit	25 mrem/year	75 mrem/year
2001 Dose	2.21E-01 mrem	1.23E-01 mrem
Percent of Limit	8.84E-01 Percent	1.64E-01 Percent

* No liquid releases were made from the OCGS during 2001

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2001 THROUGH DECEMBER 31, 2001

YEAR 2001 EVENT REPORT

LIQUID EFFLUENT RELEASES

There were no liquid radioactive releases from the facility in 2001.

CHANGES TO THE OFFSITE DOSE CALCULATION MANUAL

One revision to the Oyster Creek Generating Station Offsite Dose Calculation Manual (ODCM) was made during the reporting period. This change involved abandoning the Radwaste Overboard Discharge Radiation Monitoring System after the Overboard Discharge Pipe was abandoned and capped. This revision to the ODCM became effective in March 2001.

EFFLUENT MONITORS OUT OF SERVICE GREATER THAN 30 DAYS

The following effluent monitor was out of service for greater than thirty days:

- The Augmented Offgas Building Vent Radiation Monitor was not calibrated and therefore out-of-service from January 1, 2001 to October 16, 2001. Prioritization deficiencies, due to programmatic failures, was the cause as identified in CAP # 2001-1881. Procedure changes were made to prevent recurrence.

CHANGES TO THE PROCESS CONTROL PLAN

There were no changes to the Process Control Plan (PCP) during 2001.

Facility: Oyster Creek Generating Station **Licensee: AmerGen Energy Company, L.L.C.**

1. Regulatory Limits

a. Fission and activation gases:

Technical Specification 3.6.E.1:

The gross radioactivity in noble gases discharged from the main condenser air ejector shall not exceed 0.21/E Ci/sec after the holdup line where E is the average gamma energy (Mev per atomic transformation).

ODCM 4.6.1.1.5.A

The dose equivalent rate in the UNRESTRICTED AREA due to radioactive noble gas in gaseous effluent shall not exceed 500 mrem/year to the total body or 3000 mrem/year to the skin.

Note: The total body dose limit of 500 mrem/year has been superseded by 10 CFR 20.1301.a.1 which states:

The total effective dose equivalent to individual members of the public from the licensed operation does not exceed 0.1 rem (1 millisievert) in a year, exclusive of the dose contributions from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Sec. 35.75, from voluntary participation in medical research programs, and from the licensee's disposal of radioactive material into sanitary sewerage in accordance with Section 20.2003.

ODCM 4.6.1.1.6.A

The air dose in the UNRESTRICTED AREA due to noble gas released in gaseous effluent shall not exceed:

5 mRad/calendar quarter due to gamma radiation
10 mRad/calendar quarter due to beta radiation
10 mRad/calendar year due to gamma radiation, or
20 mRad/calendar year due to beta radiation.

ODCM 4.6.1.1.8.A

The annual dose to a MEMBER OF THE PUBLIC due to radioactive material in effluent from the OCNGS in the Unrestricted Area shall not exceed 75 mrem to his/her thyroid or 25 mrem to his/her total body or to any other organ.

b. Iodines

ODCM 4.6.1.1.5.B.

The dose equivalent rate in the UNRESTRICTED AREA due to tritium (H-3), I-131, I-133, and to radioactive material in particulate form having half-lives of 8 days or more in gaseous effluents shall not exceed 1500 mrem/year to any body organ when the dose rate due to H-3, Sr-89, Sr-90, and alpha-emitting radionuclides is averaged over no more than 3 months and the dose rate due to other radionuclides is averaged over no more than 31 days.

ODCM 4.6.1.1.7.A.

The dose to a MEMBER OF THE PUBLIC from I-131, I-133, and from radionuclides in particulate form having half-lives of 8 days or more in gaseous effluent, in the UNRESTRICTED AREA shall not exceed 7.5 mrem to any body organ per calendar quarter or 15 mrem to any body organ per calendar year.

c. Particulates, half-lives > 8 Days:

ODCM 4.6.1.1.5.B.

The dose equivalent rate in the UNRESTRICTED AREA due to tritium (H-3), I-131, I-133, and to radioactive material in particulate form having half-lives of 8 days or more in gaseous effluents shall not exceed 1500 mrem/year to any body organ when the dose rate due to H-3, Sr-89, Sr-90, and alpha-emitting radionuclides is averaged over no more than 3 months and the dose rate due to other radionuclides is averaged over no more than 31 days.

ODCM 4.6.1.1.7.A.

The dose to a MEMBER OF THE PUBLIC from I-131, I-133, and from radionuclides in particulate form having half-lives of 8 days or more in gaseous effluent, in the UNRESTRICTED AREA shall not exceed 7.5 mrem to any body organ per calendar quarter or 15 mrem to any body organ per calendar year.

d. Liquid effluents:

ODCM 4.6.1.1.3.A.

The concentration of radioactive material, other than noble gases, in liquid effluents in the discharge canal at the U.S. Route 9 bridge shall not exceed 10 times the Liquid Effluent Concentrations specified in 10 CFR Part 20.1001-20.2401, Appendix B, Table II, Column 2.

ODCM 4.6.1.1.3.B.

The concentration of noble gases dissolved or entrained in liquid effluent in the discharge canal at the U.S. Route 9 bridge shall not exceed 2.0e-4 μCi/ml.

ODCM 4.6.1.1.4.A.

The dose to a MEMBER OF THE PUBLIC due to radioactive material in liquid effluent in the UNRESTRICTED AREA shall not exceed:

1.5 mrem to the Total Body during any calendar quarter,
5.0 mrem to any body organ during any calendar quarter,
3.0 mrem to the Total Body during any calendar year, or
10.0 mrem to any body organ during any calendar year.

ODCM 4.6.1.1.8.A

The annual dose to a MEMBER OF THE PUBLIC due to radioactive material in effluents from the OCNGS in the Unrestricted Area shall not exceed 75 mrem to his/her thyroid or 25 mrem to his/her total body or to any other organ.

2. Maximum Permissible Concentrations

MPCs used in determining allowable release rates or concentrations:

a. Fission and activation gases:

Per OCGS ODCM limits, no MPCs are used to calculate allowable fission and activation gas release rates or concentrations.

b. Iodines:

Per OCGS ODCM limits, no MPCs are used to calculate allowable iodine gaseous release rates or concentrations.

c. Particulates, half-lives > 8 Days:

Per OCGS ODCM limits, no MPCs are used to calculate allowable particulate gaseous release rates or concentrations.

d. Liquid effluents:

The MPC for Tritium (H-3) is 1 E-3 *u* Ci/ml.

3. Average Energy

The average energy (E) of the radionuclide mixture in releases of fission and activation gases:

First Quarter:	5.07E-01	Mev (gamma - elevated release)
Second Quarter:	8.22E-01	Mev (gamma - elevated release)
Third Quarter:	2.48E-01	Mev (gamma - elevated release)
Fourth Quarter:	4.31E-01	Mev (gamma - elevated release)
Annual:	6.22E-01	Mev (gamma - elevated release)

4. Measurements and Approximations of Total Radioactivity

The methods used to measure or approximate the total radioactivity in effluents and the methods used to determine radionuclide composition:

a. Fission and activation gases:

1. Stack - A continuous recording of gross radioactivity and the incorporation of isotopic data obtained from a weekly grab sample analyzed using gamma spectroscopy.
2. Augmented Offgas (AOG) Vent - The continuous recording of gross activity and the incorporation of isotopic data obtained from a monthly grab sample analyzed using gamma spectroscopy.
3. Turbine Building Stack and Feedpump Room Vent - The continuous recording of gross activity and the incorporation of isotopic data obtained from a monthly grab sample analyzed using gamma spectroscopy

b. Iodines:

1. Stack - Filters are changed weekly and analyzed using gamma spectroscopy.
2. Augmented Offgas (AOG) Vent - Filters are changed weekly and analyzed using gamma spectroscopy.
3. Turbine Building Stack and Feedpump Room Vent - Filters are changed weekly and analyzed using gamma spectroscopy.

c. Particulates:

1. Stack - Filters are changed weekly and analyzed using a low background beta counter and gamma spectroscopy.
2. Augmented Offgas (AOG) Vent - Filters are changed weekly and analyzed using gamma spectroscopy.
3. Turbine Building Stack and Feedpump Room Vent - Filters are changed weekly and analyzed using gamma spectroscopy.

d. Liquid effluents:

Analysis per batch release using gamma spectrometry with a germanium detector, a low background beta counter, and a liquid scintillation counter.

5. Batch Releases

a. Liquid

1. Number of batch releases: None
2. Total time period for batch releases: N/A
3. Maximum time period for a batch release: N/A
4. Average time period for batch releases: N/A
5. Minimum time period for a batch release: N/A
6. Average stream flow during periods of release of effluent into a flowing stream: N/A

b. Gaseous

1. Number of batch releases: None
2. Total time period for batch release: N/A
3. Maximum time period for a batch release: N/A
4. Average time period for batch releases: N/A
5. Minimum time period for a batch release: N/A

6. Abnormal releases

a. Liquid

1. Number of releases: None
2. Total activity released: N/A

b. Gaseous

1. Number of releases: None
2. Total activity released: N/A

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 1A

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total	Est. Total Error, %
A. Fission & activation gases							
1. Total release	Ci	6.90E+01	1.85E+02	1.30E+01	1.27E+02	3.94E+02	+/- 25
2. Average release rate for period (elevated release only)	u Ci/sec	8.66E+00	2.35E+01	1.64E+00	1.59E+02	1.24E+01	
3. Percent of Technical Specification							
a. 0.21/Energy (average) - gamma (elevated release only)	%	2.09E-03	9.20E-03	1.94E-04	3.27E-02	3.68E-03	
b. Dose rate due to gaseous effluent -							
Total Body - 500 mrem/year	%					1.14E-03	
Skin - 3000 mrem/year	%					3.05E-04	
c. Air dose due to noble gas in gaseous effluent -							
5 mRad/calendar quarter due to gamma radiation	%	2.72E-01	1.17E-01	4.68E-03	6.14E-02		
10 mRad/calendar quarter due to beta radiation	%	1.77E-01	1.07E-02	6.19E-04	5.83E-03		
10 mRad/calendar year due to gamma radiation	%					1.91E-01	
20 mRad/calendar year due to beta radiation	%					9.05E-02	
B. Iodines							
1. Total iodine-131	Ci	9.16E-03	1.33E-02	7.23E-03	8.49E-03	3.82E-02	+/- 25
2. Average release rate for period (elevated release only)	u Ci/sec	1.18E-03	1.69E-03	9.10E-04	1.07E-03	1.21E-03	
3. Percent of Technical Specification							
a. Dose rate due to gaseous effluent -							
Any body organ - 1500 mrem/year (H-3, I-131, I-133, & Part. T1/2 > 8 D)	%					1.44E-02	
b. Dose due to radioiodine and particulates in gaseous effluent -							
Any body organ per calendar quarter - 7.5 mrem	%	1.40E-01	8.77E-01	5.13E-01	2.27E+00		
Any body organ per calendar year - 15 mrem	%					1.44E+00	
C. Particulates							
1. Particulates with half-lives > 8 days	Ci	7.37E-03	2.30E-03	3.01E-03	4.30E-02	5.57E-02	+/- 25
2. Average release rate for period (elevated release only)	u Ci/sec	9.47E-04	2.93E-04	3.79E-04	5.41E-03	1.77E-03	
3. Percent of Technical Specification							
a. Dose rate due to gaseous effluent -							
Any body organ - 1500 mrem/year (H-3, I-131, I-133, & Part. T1/2 > 8 D)	%					1.44E-02	
b. Dose due to radioiodine and particulates in gaseous effluent -							
Any body organ per calendar quarter - 7.5 mrem	%	1.40E-01	8.77E-01	5.13E-01	2.27E+00		
Any body organ per calendar year - 15 mrem	%					1.44E+00	
4. Gross alpha radioactivity	Ci	1.89E-06	1.72E-06	1.08E-06	1.31E-06	6.00E-06	
C. Tritium							
1. Total Release	Ci	9.83E+00	6.31E+00	7.73E+00	4.00E+00	2.79E+01	+/- 25
2. Average release rate for period (elevated release only)	u Ci/sec	1.26E+00	8.02E-01	9.73E-01	5.04E-01	8.84E-01	
3. Percent of Technical Specification							
a. Dose rate due to gaseous effluent -							
Any body organ - 1500 mrem/year (H-3, I-131, I-133, & Part. T1/2 > 8 D)	%					1.44E-02	

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 1B

GASEOUS EFFLUENTS - ELEVATED RELEASES

Nuclides Released	Unit	Continuous Mode				
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total
1. Fission gases						
krypton-85	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
krypton-85m	Ci	6.13E+00	< LLD	< LLD	5.82E+00	1.20E+01
krypton-87	Ci	2.55E+01	4.13E+01	< LLD	4.36E+01	1.10E+02
krypton-88	Ci	2.40E+00	4.90E+01	< LLD	< LLD	5.14E+01
xenon-133	Ci	< LLD	< LLD	< LLD	3.65E-03	3.65E-03
xenon-135	Ci	3.33E+01	9.47E+01	1.30E+01	7.73E+01	2.18E+02
xenon-135m	Ci	< LLD	< LLD	< LLD	4.43E-02	4.43E-02
xenon-138	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
Total for period	Ci	6.73E+01	1.85E+02	1.30E+01	1.27E+02	3.92E+02
2. Iodines						
iodine-131	Ci	9.16E-03	1.33E-02	7.23E-03	8.49E-03	3.82E-02
iodine-133	Ci	3.60E-02	6.92E-02	4.97E-02	4.07E-02	1.96E-01
iodine-135	Ci	3.74E-02	9.64E-02	7.28E-02	4.47E-02	2.51E-01
Others						
iodine-129	Ci	< LLD	< LLD	3.14E-06	1.50E-06	4.64E-06
iodine-132	Ci	1.31E-02	4.53E-02	3.89E-02	2.20E-02	1.19E-01
iodine-134	Ci	1.89E-02	3.14E-02	4.39E-02	8.06E-03	1.02E-01
Total for period	Ci	1.15E-01	2.56E-01	2.13E-01	1.24E-01	7.07E-01
C. Particulates						
strontium-89	Ci	3.60E-03	8.32E-04	1.21E-03	3.28E-02	3.84E-02
strontium-90	Ci	3.00E-05	1.43E-05	3.72E-04	5.22E-05	4.69E-04
cesium-134	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-137	Ci	< LLD	1.72E-05	1.45E-05	1.12E-04	1.44E-04
barium-140	Ci	3.72E-03	1.43E-03	1.37E-03	1.00E-02	1.65E-02
lanthanum-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
manganese-54	Ci	< LLD	1.03E-05	< LLD	1.48E-05	2.51E-05
cobalt-60	Ci	< LLD	< LLD	4.16E-05	< LLD	4.16E-05
Total for period	Ci	7.35E-03	2.30E-03	3.01E-03	4.30E-02	5.56E-02

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 1C

GASEOUS EFFLUENTS - GROUND-LEVEL RELEASES

Nuclides Released	Unit	Continuous Mode				
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total
1. Fission gases						
krypton-85	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
krypton-85m	Ci	8.78E-02	< LLD	< LLD	< LLD	8.78E-02
krypton-87	Ci	3.77E-01	< LLD	< LLD	< LLD	3.77E-01
krypton-88	Ci	1.09E-01	< LLD	< LLD	< LLD	1.09E-01
xenon-133	Ci	< LLD	< LLD	4.68E-04	< LLD	4.68E-04
xenon-135	Ci	1.11E+00	< LLD	< LLD	< LLD	1.11E+00
xenon-135m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-138	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
Total for period	Ci	1.68E+00	< LLD	4.68E-04	< LLD	1.68E+00
2. Iodines						
iodine-131	Ci	8.51E-08	4.39E-07	2.03E-07	4.52E-06	5.25E-06
iodine-133	Ci	< LLD	8.24E-07	8.94E-06	2.99E-06	1.28E-05
iodine-135	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
Total for period	Ci	8.51E-08	1.26E-06	9.14E-06	7.51E-06	1.80E-05
C. Particulates						
strontium-89	Ci	1.67E-05	< LLD	2.82E-06	6.77E-06	2.63E-05
strontium-90	Ci	1.40E-08	2.50E-07	< LLD	< LLD	2.64E-07
cesium-134	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-137	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
barium-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
lanthanum-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
Total for period	Ci	1.67E-05	2.50E-07	2.82E-06	6.77E-06	2.66E-05

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 2A

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total	Est. Total Error, %
A. Fission & activation products							
1. Total release (not including tritium, gases, alpha)	Ci	No releases	No releases	No releases	No releases	No releases	N/A
2. Average diluted concentration during period	*u* Ci/ml	N/A	N/A	N/A	N/A	N/A	
3. Percent of Technical Specification							
a. Radioactivity Concentration in Liquid Effluent							
The concentration of radioactive material, other than noble gases shall not exceed 10 times the liquid effluent concentrations specified in 10CFR Part 20.1001-20.2401, Appendix B, Table II, Column 2	%					N/A	
b. Limit on Dose Due to Liquid Effluent							
Total Body - 1.5 mrem/calendar quarter	%	N/A	N/A	N/A	N/A		
Any Body Organ - 5.0 mrem/calendar quarter	%	N/A	N/A	N/A	N/A		
Total Body - 3.0 mrem/calendar year	%					N/A	
Any Body Organ - 10.0 mrem/calendar year	%					N/A	
B. Tritium							
1. Total release	Ci	No releases	No releases	No releases	No releases	No releases	N/A
2. Average diluted concentration during period	*u* Ci/ml	N/A	N/A	N/A	N/A	N/A	
3. Percent of Technical Specification							
a. Shall not exceed 10 times the liquid effluent concentrations specified in 10CFR Part 20.1001-20.2401, Appendix B, Table II, Column 2	%					N/A	
b. Limit on Dose Due to Liquid Effluent							
Total Body - 1.5 mrem/calendar quarter	%	N/A	N/A	N/A	N/A		
Any Body Organ - 5.0 mrem/calendar quarter	%	N/A	N/A	N/A	N/A		
Total Body - 3.0 mrem/calendar year	%					N/A	
Any Body Organ - 10.0 mrem/calendar year	%					N/A	
C. Dissolved and entrained gases							
1. Total release	Ci	No releases	No releases	No releases	No releases	No releases	No releases
2. Average diluted concentration during period	*u* Ci/ml	N/A	N/A	N/A	N/A	N/A	
3. Percent of Technical Specification							
a. Shall not exceed 2.0 E-4 *u* Ci/ml	%					N/A	
b. Limit on Dose Due to Liquid Effluent							
Total Body - 1.5 mrem/calendar quarter	%	N/A	N/A	N/A	N/A		
Any Body Organ - 5.0 mrem/calendar quarter	%	N/A	N/A	N/A	N/A		
Total Body - 3.0 mrem/calendar year	%					N/A	
Any Body Organ - 10.0 mrem/calendar year	%					N/A	
D. Gross alpha radioactivity							
1. Total release	Ci	No releases	No releases	No releases	No releases	No releases	No releases
E. Volume of waste released (prior to dilution)	liters	No releases	No releases	No releases	No releases	No releases	No releases
F. Volume of dilution water used during period	liters	4.73E+11	4.31E+11	4.91E+11	4.67E+11	1.86E+12	+/- 10

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 2B

LIQUID EFFLUENTS

Nuclides Released	Unit	Batch Mode				
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total
strontium-89	Ci	No releases	No releases	No releases	No releases	No releases
strontium-90	Ci	No releases	No releases	No releases	No releases	No releases
cesium-134	Ci	No releases	No releases	No releases	No releases	No releases
cesium-137	Ci	No releases	No releases	No releases	No releases	No releases
iodine-131	Ci	No releases	No releases	No releases	No releases	No releases
cobalt-58	Ci	No releases	No releases	No releases	No releases	No releases
cobalt-60	Ci	No releases	No releases	No releases	No releases	No releases
iron-59	Ci	No releases	No releases	No releases	No releases	No releases
zinc-65	Ci	No releases	No releases	No releases	No releases	No releases
manganese-54	Ci	No releases	No releases	No releases	No releases	No releases
chromium-51	Ci	No releases	No releases	No releases	No releases	No releases
zirconium-95	Ci	No releases	No releases	No releases	No releases	No releases
niobium-95	Ci	No releases	No releases	No releases	No releases	No releases
technetium-99m	Ci	No releases	No releases	No releases	No releases	No releases
barium-140	Ci	No releases	No releases	No releases	No releases	No releases
lanthanum-140	Ci	No releases	No releases	No releases	No releases	No releases
cerium-141	Ci	No releases	No releases	No releases	No releases	No releases
Other	Ci	No releases	No releases	No releases	No releases	No releases
unidentified	Ci	No releases	No releases	No releases	No releases	No releases
Total for period	Ci	No releases	No releases	No releases	No releases	No releases
xenon-133	Ci	No releases	No releases	No releases	No releases	No releases
xenon-135	Ci	No releases	No releases	No releases	No releases	No releases
Total for period	Ci	No releases	No releases	No releases	No releases	No releases

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001
TABLE 3A
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS - SUMMARY

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

1. Type of waste	Unit	Yearly Total	Est. Total Error, %
a. Spent resins, filters, filter sludges, etc	m^3	5.59E+01	+/- 25
	Ci	5.23E+01	
b. Dry compressible waste, contaminated equipment, etc.	m^3	1.87E+03	+/- 25
	Ci	4.08E+00	
c. Irradiated components, control rods, etc.	m^3	1.63E+00	+/- 25
	Ci	2.09E+03	
d. Evaporator Bottoms (shipped in liquid form to a Waste Processor)	m^3	1.52E+01	+/- 25
	Ci	1.58E-04	

Note: No solidification agent was used during the reporting period

2. Estimate of major nuclear composition (by type of waste)	Percentage (%)	Activity (Ci)
a. cobalt-60	4.14E+01	2.17E+01
cesium-137	2.74E+01	1.43E+01
H-3	8.81E+00	4.61E+00
b. cobalt-60	4.58E+01	1.87E+00
iron-55	2.34E+01	9.56E-01
cesium-137	2.21E+01	9.03E-01
c. cobalt-60	4.75E+01	9.90E+02
iron-55	4.12E+01	8.59E+02
nickel-63	9.35E+00	1.95E+02
d. cesium-137	5.27E+01	8.33E-05
cesium-134	2.33E+01	3.68E-05
cobalt-60	1.01E+01	1.60E-05

Note - See attached tables (Table 3B) for additional data

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
39	Motor Vehicle	Oak Ridge, T.N.
12	Motor Vehicle	Barnwell, S.C.

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None Shipped		

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Summary Of All Wastes

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class	Volume Shipped (Ft^3)	Volume Shipped (M^3)	Activity Shipped (Curies)	Percent Error (Percent)
A	6.83E+04	1.93E+03	1.13E+01	+/- 25 %
B	3.59E+02	1.02E+01	4.51E+01	+/- 25 %
C	5.74E+01	1.63E+00	2.09E+03	+/- 25 %
All	6.87E+04	1.95E+03	2.14E+03	+/- 25 %

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (cont.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Summary of All Shipments

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class: A

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	4.24E+00	3.76E+01
C-14	1.78E+00	1.58E+01
Cs-137	1.63E+00	1.44E+01
Fe-55	1.56E+00	1.38E+01
H-3	6.92E-01	6.13E+00
Mn-54	5.93E-01	5.25E+00
Fe-59	1.56E-01	1.38E+00
Ni-63	4.20E-02	3.72E-01
Sr-90	3.40E-02	3.01E-01
Pu-241	1.82E-02	1.61E-01
Ni-59	2.00E-04	1.77E-03
Cm-242	1.00E-05	8.86E-05
Other	6.00E-01	5.31E+00
Total	1.13E+01	1.00E+02

Waste Class: B

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	1.93E+01	4.28E+01
Cs-137	1.36E+01	3.02E+01
H-3	3.92E+00	8.69E+00
Fe-55	2.91E+00	6.45E+00
C-14	1.89E+00	4.19E+00
Mn-54	1.40E+00	3.10E+00
Sr-90	2.27E-01	5.03E-01
Pu-241	1.68E-01	3.73E-01
Ni-63	1.09E-01	2.42E-01
Ni-59	3.40E-03	7.54E-03
Cm-242	2.35E-03	5.21E-03
Other	1.60E+00	3.55E+00
Total	4.51E+01	1.00E+02

Waste Class: C

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	9.90E+02	4.75E+01
Fe-55	8.59E+02	4.12E+01
Ni-63	1.95E+02	9.35E+00
Sb-125	4.02E+01	1.93E+00
Ni-59	9.49E-01	4.55E-02
C-14	4.04E-01	1.94E-02
H-3	6.23E-02	2.99E-03
Nb-94	4.84E-02	2.32E-03
Pu-241	4.62E-03	2.22E-04
Tc-99	1.43E-03	6.86E-05
Cm-242	5.95E-08	2.85E-09
Other	0.00E+00	0.00E+00
Total	2.09E+03	1.00E+02

Waste Class: All

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	1.01E+03	4.74E+01
Fe-55	8.63E+02	4.03E+01
Ni-63	1.95E+02	9.12E+00
Sb-125	4.02E+01	1.88E+00
Cs-137	1.52E+01	7.12E-01
H-3	4.67E+00	2.18E-01
C-14	4.07E+00	1.90E-01
Ni-59	9.53E-01	4.45E-02
Sr-90	2.61E-01	1.22E-02
Pu-241	1.91E-01	8.92E-03
Nb-94	4.84E-02	2.26E-03
Cm-242	2.36E-03	1.10E-04
Tc-99	1.43E-03	6.68E-05
Other	2.20E+00	1.03E-01
Total	2.14E+03	1.00E+02

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (cont.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Spent Resins, Filters, and Filter Sludge

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class	Volume Shipped		Activity Shipped	Percent Error
	(Ft^3)	(M^3)	(Curies)	(Percent)
A	1.61E+03	4.57E+01	7.21E+00	+/- 25 %
B	3.59E+02	1.02E+01	4.51E+01	+/- 25 %
C	None	None	None	N/A
All	1.97E+03	5.59E+01	5.23E+01	+/- 25 %

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (cont.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Spent Resins, Filters, and Filter Sludge

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class: A

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	2.37E+00	3.29E+01
C-14	1.78E+00	2.47E+01
Cs-137	7.30E-01	1.01E+01
H-3	6.86E-01	9.52E+00
Fe-55	6.06E-01	8.41E+00
Mn-54	4.11E-01	5.70E+00
Fe-59	1.56E-01	2.16E+00
Co-58	9.81E-02	1.36E+00
Cs-134	9.24E-02	1.28E+00
Zn-65	7.63E-02	1.06E+00
Sr-90	3.10E-02	4.30E-01
Ni-63	2.30E-02	3.19E-01
Pu-241	1.72E-02	2.39E-01
Cm-242	2.56E-04	3.55E-03
Other	1.30E-01	1.80E+00
Total	7.21E+00	1.00E+02

Waste Class: B

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	1.93E+01	4.28E+01
Cs-137	1.36E+01	3.02E+01
H-3	3.92E+00	8.69E+00
Fe-55	2.91E+00	6.45E+00
C-14	1.89E+00	4.19E+00
Mn-54	1.40E+00	3.10E+00
Sr-90	2.27E-01	5.03E-01
Pu-241	1.68E-01	3.73E-01
Ni-63	1.09E-01	2.42E-01
Ni-59	3.40E-03	7.54E-03
Cm-242	2.35E-03	5.21E-03
Other	1.57E+00	3.48E+00
Total	4.51E+01	1.00E+02

Waste Class: C

Nuclide	Activity (Curies)	Percent Abundance (Percent)
N		
O		
N		
E		
S		
H		
I		
P		
P		
E		
D		
Total	N/A	N/A

Waste Class: All

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	2.17E+01	4.14E+01
Cs-137	1.43E+01	2.74E+01
H-3	4.61E+00	8.81E+00
C-14	3.67E+00	7.02E+00
Fe-55	3.52E+00	6.72E+00
Mn-54	1.81E+00	3.46E+00
Sr-90	2.58E-01	4.93E-01
Pu-241	1.85E-01	3.54E-01
Fe-59	1.56E-01	2.98E-01
Ni-63	1.32E-01	2.52E-01
Co-58	9.81E-02	1.88E-01
Cs-134	9.24E-02	1.77E-01
Zn-65	7.63E-02	1.46E-01
Ni-59	3.40E-03	6.50E-03
Cm-242	2.61E-03	4.98E-03
Other	1.70E+00	3.25E+00
Total	5.23E+01	1.00E+02

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (CONT.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Dry Activated Waste Shipped To An Offsite Waste Processor

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class	Volume Shipped (Ft^3)	Volume Shipped (M^3)	Activity Shipped (Curies)	Percent Error (Percent)
A	6.61E+04	1.87E+03	4.08E+00	+/- 25 %
B	None	None	None	N/A
C	None	None	None	N/A
All	6.61E+04	1.87E+03	4.08E+00	+/- 25 %

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (cont.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Dry Activated Waste Shipped to an Offsite Waste Processor

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class: A

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	1.87E+00	4.58E+01
Fe-55	9.56E-01	2.34E+01
Cs-137	9.03E-01	2.21E+01
Mn-54	1.82E-01	4.46E+00
Cr-51	5.70E-02	1.40E+00
Ni-63	1.90E-02	4.66E-01
H-3	6.00E-03	1.47E-01
C-14	3.00E-03	7.35E-02
Sr-90	3.00E-03	7.35E-02
Pu-241	1.00E-03	2.45E-02
Ni-59	2.40E-04	5.88E-03
Cm-242	1.00E-05	2.45E-04
Other	8.00E-02	1.96E+00
Total	4.08E+00	1.00E+02

Waste Class: B

Nuclide	Activity (Curies)	Percent Abundance (Percent)
N		
O		
N		
E		
S		
H		
I		
P		
P		
E		
D		
Total	N/A	N/A

Waste Class: C

Nuclide	Activity (Curies)	Percent Abundance (Percent)
N		
O		
N		
E		
S		
H		
I		
P		
P		
E		
D		
Total	N/A	N/A

Waste Class: All

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	1.87E+00	4.58E+01
Fe-55	9.56E-01	2.34E+01
Cs-137	9.03E-01	2.21E+01
Mn-54	1.82E-01	4.46E+00
Cr-51	5.70E-02	1.40E+00
Ni-63	1.90E-02	4.66E-01
H-3	6.00E-03	1.47E-01
C-14	3.00E-03	7.35E-02
Sr-90	3.00E-03	7.35E-02
Pu-241	1.00E-03	2.45E-02
Ni-59	2.40E-04	5.88E-03
Cm-242	1.00E-05	2.45E-04
Other	8.00E-02	1.96E+00
Total	4.08E+00	1.00E+02

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (CONT.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Irradiated Components

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class	Volume Shipped (Ft^3)	Volume Shipped (M^3)	Activity Shipped (Curies)	Percent Error (Percent)
A	None	None	None	N/A
B	None	None	None	N/A
C	5.74E+01	1.63E+00	2.09E+03	+/- 25 %
All	5.74E+01	1.63E+00	2.09E+03	+/- 25 %

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (cont.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Irradiated Components

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class: A

Nuclide	Activity (Curies)	Percent Abundance (Percent)
N		
O		
N		
E		
S		
H		
I		
P		
P		
E		
D		
Total	N/A	N/A

Waste Class: B

Nuclide	Activity (Curies)	Percent Abundance (Percent)
N		
O		
N		
E		
S		
H		
I		
P		
P		
E		
D		
Total	N/A	N/A

Waste Class: C

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	9.90E+02	4.75E+01
Fe-55	8.59E+02	4.12E+01
Ni-63	1.95E+02	9.35E+00
Sb-125	4.02E+01	1.93E+00
Ni-59	9.49E-01	4.55E-02
C-14	4.04E-01	1.94E-02
H-3	6.23E-02	2.99E-03
Nb-94	4.84E-02	2.32E-03
Pu-241	4.62E-03	2.22E-04
Tc-99	1.43E-03	6.86E-05
Cm-242	5.95E-08	2.85E-09
Other	0.00E+00	0.00E+00
Total	2.09E+03	1.00E+02

Waste Class: All

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Co-60	9.90E+02	4.75E+01
Fe-55	8.59E+02	4.12E+01
Ni-63	1.95E+02	9.35E+00
Sb-125	4.02E+01	1.93E+00
Ni-59	9.49E-01	4.55E-02
C-14	4.04E-01	1.94E-02
H-3	6.23E-02	2.99E-03
Nb-94	4.84E-02	2.32E-03
Pu-241	4.62E-03	2.22E-04
Tc-99	1.43E-03	6.86E-05
Cm-242	5.95E-08	2.85E-09
Other	0.00E+00	0.00E+00
Total	2.09E+03	1.00E+02

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (CONT.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Contaminated Water Shipped To An Offsite Waste Processor

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class	Volume Shipped (Ft^3)	Volume Shipped (M^3)	Activity Shipped (Curies)	Percent Error (Percent)
A	5.35E+02	1.52E+01	1.58E-04	+/- 25 %
B	None	None	None	N/A
C	None	None	None	N/A
All	5.35E+02	1.52E+01	1.58E-04	+/- 25 %

Note: All waste was processed at an off-site processor and no waste was buried

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 3B (cont.)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Contaminated Water Sent To A Waste Processor

Period of Performance: January 1, 2001 through December 31, 2001

Waste Class: A

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Cs-137	8.33E-05	5.27E+01
Cs-134	3.68E-05	2.33E+01
Co-60	1.60E-05	1.01E+01
Fe-55	8.87E-06	5.61E+00
Mn-54	7.01E-06	4.44E+00
Co-58	3.18E-06	2.01E+00
H-3	5.22E-07	3.30E-01
Sr-90	2.52E-07	1.59E-01
Ni-63	1.73E-07	1.09E-01
Pu-241	1.15E-07	7.28E-02
C-14	3.24E-08	2.05E-02
Ni-59	2.13E-09	1.35E-03
Cm-242	7.59E-10	4.80E-04
Other	2.00E-06	1.27E+00
Total	1.58E-04	1.00E+02

Waste Class: B

Nuclide	Activity (Curies)	Percent Abundance (Percent)
N		
O		
N		
E		
S		
H		
I		
P		
P		
E		
D		
Total	N/A	N/A

Waste Class: C

Nuclide	Activity (Curies)	Percent Abundance (Percent)
N		
O		
N		
E		
S		
H		
I		
P		
P		
E		
D		
Total	N/A	N/A

Waste Class: All

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Cs-137	8.33E-05	5.27E+01
Cs-134	3.68E-05	2.33E+01
Co-60	1.60E-05	1.01E+01
Fe-55	8.87E-06	5.61E+00
Mn-54	7.01E-06	4.44E+00
Co-58	3.18E-06	2.01E+00
H-3	5.22E-07	3.30E-01
Sr-90	2.52E-07	1.59E-01
Ni-63	1.73E-07	1.09E-01
Pu-241	1.15E-07	7.28E-02
C-14	3.24E-08	2.05E-02
Ni-59	2.13E-09	1.35E-03
Cm-242	7.59E-10	4.80E-04
Other	2.00E-06	1.27E+00
Total	1.58E-04	1.00E+02

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 4A

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	All Pasquill Categories
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	84	109	63	3	0	0	259
NNE	52	100	35	1	0	0	188
NE	54	125	106	13	0	0	298
ENE	55	146	140	21	4	0	366
E	41	168	130	8	0	0	347
ESE	30	116	64	1	0	0	211
SE	48	156	103	2	0	0	309
SSE	56	124	127	19	0	0	326
S	55	159	187	47	0	0	448
SSW	96	264	212	61	4	0	637
SW	153	328	134	9	0	0	624
WSW	303	545	150	7	0	0	1005
W	377	461	169	21	1	0	1029
WNW	231	295	261	61	6	0	854
NW	197	380	278	75	0	0	930
NNW	128	251	170	27	0	0	576
VARIABLE	0	0	0	0	0	0	0
TOTAL	1960	3727	2329	376	15	0	8407

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

OYSTER CREEK GENERATING STATION

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2001

TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category **A**
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	0	12	23	2	0	0	37
NNE	1	8	4	0	0	0	13
NE	0	14	40	0	0	0	54
ENE	1	31	65	6	0	0	103
E	0	29	43	1	0	0	73
ESE	1	47	32	0	0	0	80
SE	2	31	71	2	0	0	106
SSE	0	7	62	8	0	0	77
S	0	6	57	30	0	0	93
SSW	0	14	30	13	0	0	57
SW	1	17	41	6	0	0	65
WSW	0	26	80	3	0	0	109
W	3	23	59	9	0	0	94
WNW	0	22	81	24	5	0	132
NW	0	18	101	32	0	0	151
NNW	0	14	51	8	0	0	73
VARIABLE	0	0	0	0	0	0	0
TOTAL	9	319	840	144	5	0	1317

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category B
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	1	17	8	0	0	0	26
NNE	0	12	2	0	0	0	14
NE	1	7	8	0	0	0	16
ENE	1	11	9	0	0	0	21
E	0	18	12	1	0	0	31
ESE	1	6	5	0	0	0	12
SE	0	12	8	0	0	0	20
SSE	0	9	17	1	0	0	27
S	1	2	19	1	0	0	23
SSW	2	9	11	5	0	0	27
SW	1	6	10	1	0	0	18
WSW	0	14	16	3	0	0	33
W	1	16	15	4	0	0	36
WNW	0	15	31	7	1	0	54
NW	1	16	22	7	0	0	46
NNW	0	13	12	9	0	0	34
VARIABLE	0	0	0	0	0	0	0
TOTAL	10	183	205	39	1	0	438

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category C
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	1	6	1	0	0	0	8
NNE	0	9	2	0	0	0	11
NE	1	6	5	0	0	0	12
ENE	3	6	2	0	0	0	11
E	1	5	7	0	0	0	13
ESE	0	7	4	0	0	0	11
SE	0	6	4	0	0	0	10
SSE	0	5	9	0	0	0	14
S	0	2	16	0	0	0	18
SSW	1	4	6	2	0	0	13
SW	0	5	4	0	0	0	9
WSW	0	11	3	0	0	0	14
W	0	8	7	1	0	0	16
WNW	1	10	10	3	0	0	24
NW	0	9	13	5	0	0	27
NNW	1	10	5	2	0	0	18
VARIABLE	0	0	0	0	0	0	0
TOTAL	9	109	98	13	0	0	229

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category D
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	14	35	21	0	0	0	70
NNE	15	45	6	1	0	0	67
NE	18	54	39	0	0	0	111
ENE	12	54	40	4	0	0	110
E	12	62	49	3	0	0	126
ESE	8	26	15	0	0	0	49
SE	10	56	16	0	0	0	82
SSE	7	54	18	4	0	0	83
S	8	62	64	7	0	0	141
SSW	5	39	69	10	0	0	123
SW	10	45	24	1	0	0	80
WSW	13	60	23	0	0	0	96
W	9	40	31	4	0	0	84
WNW	7	39	54	12	0	0	112
NW	16	69	68	16	0	0	169
NNW	14	68	41	8	0	0	131
VARIABLE	0	0	0	0	0	0	0
TOTAL	178	808	578	70	0	0	1634

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

OYSTER CREEK GENERATING STATION

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category E
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	34	24	10	1	0	0	69
NNE	18	25	21	0	0	0	64
NE	25	40	13	13	0	0	91
ENE	22	43	22	11	4	0	102
E	20	48	19	3	0	0	90
ESE	17	28	8	1	0	0	54
SE	28	50	4	0	0	0	82
SSE	31	43	21	6	0	0	101
S	21	76	31	9	0	0	137
SSW	37	160	94	31	4	0	326
SW	43	146	54	1	0	0	244
WSW	59	146	24	1	0	0	230
W	49	153	55	3	1	0	261
WNW	37	94	82	15	0	0	228
NW	34	133	74	15	0	0	256
NNW	39	68	61	0	0	0	168
VARIABLE	0	0	0	0	0	0	0
TOTAL	514	1277	593	110	9	0	2503

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

OYSTER CREEK GENERATING STATION

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category F
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	7	6	0	0	0	0	13
NNE	12	0	0	0	0	0	12
NE	5	3	1	0	0	0	9
ENE	6	0	2	0	0	0	8
E	4	5	0	0	0	0	9
ESE	1	2	0	0	0	0	3
SE	4	1	0	0	0	0	5
SSE	10	6	0	0	0	0	16
S	13	9	0	0	0	0	22
SSW	23	26	2	0	0	0	51
SW	36	79	1	0	0	0	116
WSW	43	121	3	0	0	0	167
W	50	94	2	0	0	0	146
WNW	44	78	3	0	0	0	125
NW	32	68	0	0	0	0	100
NNW	23	33	0	0	0	0	56
VARIABLE	0	0	0	0	0	0	0
TOTAL	313	531	14	0	0	0	858

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category G
ELEVATION:	**33** foot

Wind Direction	Wind Speed (mph) at **33** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	27	9	0	0	0	0	36
NNE	6	1	0	0	0	0	7
NE	4	1	0	0	0	0	5
ENE	10	1	0	0	0	0	11
E	4	1	0	0	0	0	5
ESE	2	0	0	0	0	0	2
SE	4	0	0	0	0	0	4
SSE	8	0	0	0	0	0	8
S	12	2	0	0	0	0	14
SSW	28	12	0	0	0	0	40
SW	62	30	0	0	0	0	92
WSW	188	167	1	0	0	0	356
W	265	127	0	0	0	0	392
WNW	142	37	0	0	0	0	179
NW	114	67	0	0	0	0	181
NNW	51	45	0	0	0	0	96
VARIABLE	0	0	0	0	0	0	0
TOTAL	927	500	1	0	0	0	1428

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	353	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	All Pasquill Categories
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	13	66	156	128	68	2	433
NNE	12	59	100	70	26	1	268
NE	12	67	110	138	62	28	417
ENE	17	46	150	137	75	25	450
E	6	66	140	85	35	5	337
ESE	10	77	135	54	5	1	282
SE	17	53	141	65	10	3	289
SSE	4	59	130	111	23	13	340
S	6	43	152	202	40	11	454
SSW	5	37	161	311	163	53	730
SW	11	32	141	235	214	41	674
WSW	11	60	161	269	194	74	769
W	14	69	151	240	210	74	758
WNW	9	42	135	309	240	109	844
NW	8	47	162	299	295	147	958
NNW	10	43	93	206	196	47	595
VARIABLE	0	0	0	0	0	0	0
TOTAL	165	866	2218	2859	1856	634	8598

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

OYSTER CREEK GENERATING STATION

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category **A**
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	1	0	4	11	1	0	17
NNE	0	0	1	0	0	0	1
NE	0	1	2	10	3	0	16
ENE	0	0	10	12	6	0	28
E	0	1	7	4	0	0	12
ESE	0	0	10	1	0	0	11
SE	0	0	7	8	0	0	15
SSE	0	0	4	13	0	0	17
S	0	1	2	17	4	1	25
SSW	0	2	3	2	2	0	9
SW	0	0	6	8	1	0	15
WSW	0	1	4	18	4	0	27
W	0	1	6	3	7	2	19
WNW	1	0	2	16	7	2	28
NW	0	0	3	5	12	2	22
NNW	0	0	0	13	5	1	19
VARIABLE	0	0	0	0	0	0	0
TOTAL	2	7	71	141	52	8	281

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category B
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	0	2	6	3	2	0	13
NNE	0	1	1	1	0	0	3
NE	0	1	7	20	6	0	34
ENE	0	1	28	11	1	0	41
E	0	0	21	0	0	0	21
ESE	1	4	13	1	0	0	19
SE	0	4	23	8	0	0	35
SSE	0	0	8	17	0	0	25
S	0	0	6	27	7	1	41
SSW	0	1	10	7	3	1	22
SW	0	2	8	8	3	0	21
WSW	0	1	18	23	4	1	47
W	0	2	19	22	4	2	49
WNW	0	0	13	28	8	17	66
NW	0	2	9	22	12	10	55
NNW	0	0	4	13	4	5	26
VARIABLE	0	0	0	0	0	0	0
TOTAL	1	21	194	211	54	37	518

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category C
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	0	4	10	3	0	0	17
NNE	0	7	6	2	3	0	18
NE	0	5	7	11	6	0	29
ENE	0	0	20	14	1	0	35
E	0	5	17	7	0	0	29
ESE	0	11	22	3	0	0	36
SE	0	3	27	6	0	0	36
SSE	0	2	15	16	1	1	35
S	0	2	8	24	6	0	40
SSW	0	1	12	19	7	0	39
SW	0	2	11	16	5	1	35
WSW	1	5	18	24	6	1	55
W	1	3	23	21	5	1	54
WNW	0	5	20	30	14	13	82
NW	0	2	20	19	16	20	77
NNW	0	3	12	9	4	5	33
VARIABLE	0	0	0	0	0	0	0
TOTAL	2	60	248	224	74	42	650

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category D
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	6	35	41	20	22	1	125
NNE	3	26	42	34	18	1	124
NE	5	34	49	62	38	26	214
ENE	10	25	62	72	53	24	246
E	4	40	60	47	29	1	181
ESE	6	38	46	27	2	0	119
SE	7	21	60	34	2	1	125
SSE	1	32	68	36	10	7	154
S	1	16	81	80	15	5	198
SSW	1	16	60	132	61	29	299
SW	2	11	39	52	22	5	131
WSW	3	22	59	66	15	0	165
W	2	31	41	57	31	8	170
WNW	2	14	49	78	78	42	263
NW	1	19	65	116	79	62	342
NNW	4	24	37	68	53	15	201
VARIABLE	0	0	0	0	0	0	0
TOTAL	58	404	859	981	528	227	3057

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category E
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	2	8	33	27	11	0	81
NNE	6	13	17	6	1	0	43
NE	3	12	16	15	6	2	54
ENE	4	7	18	24	14	1	68
E	2	7	22	15	6	4	56
ESE	3	8	31	18	3	1	64
SE	4	16	14	8	6	2	50
SSE	0	12	26	24	9	5	76
S	3	12	31	31	6	4	87
SSW	1	10	40	117	76	20	264
SW	2	8	34	75	103	13	235
WSW	2	14	20	56	63	17	172
W	6	20	26	57	81	25	215
WNW	4	8	22	69	61	16	180
NW	2	4	27	68	83	25	209
NNW	0	8	16	43	48	4	119
VARIABLE	0	0	0	0	0	0	0
TOTAL	44	167	393	653	577	139	1973

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category F
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	2	3	21	37	14	1	78
NNE	2	2	9	13	1	0	27
NE	1	4	5	9	1	0	20
ENE	1	2	8	1	0	0	12
E	0	4	5	5	0	0	14
ESE	0	6	4	3	0	0	13
SE	1	4	2	0	0	0	7
SSE	0	4	6	0	1	0	11
S	1	5	14	19	1	0	40
SSW	0	3	11	26	13	3	56
SW	3	2	11	31	45	18	110
WSW	1	10	14	35	47	36	143
W	1	6	16	45	54	20	142
WNW	0	5	21	44	47	17	134
NW	1	6	11	35	64	21	138
NNW	3	4	9	33	55	15	119
VARIABLE	0	0	0	0	0	0	0
TOTAL	17	70	167	336	343	131	1064

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4A (cont.)

HOURS AT EACH WIND SPEED AND DIRECTION [a]

PERIOD OF RECORD:	January 1, 2001 through December 31, 2001
STABILITY CLASS:	Pasquill Category G
ELEVATION:	**380** foot

Wind Direction	Wind Speed (mph) at **380** foot level						
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	Total
N	2	14	41	27	18	0	102
NNE	1	10	24	14	3	0	52
NE	3	10	24	11	2	0	50
ENE	2	11	4	3	0	0	20
E	0	9	8	7	0	0	24
ESE	0	10	9	1	0	0	20
SE	5	5	8	1	2	0	21
SSE	3	9	3	5	2	0	22
S	1	7	10	4	1	0	23
SSW	3	4	25	8	1	0	41
SW	4	7	32	45	35	4	127
WSW	4	7	28	47	55	19	160
W	4	6	20	35	28	16	109
WNW	2	10	8	44	25	2	91
NW	4	14	27	34	29	7	115
NNW	3	4	15	27	27	2	78
VARIABLE	0	0	0	0	0	0	0
TOTAL	41	137	286	313	228	50	1055

Periods of Calm (hours):	0	Hours
Hours of missing data (Total):	162	Hours

[a] The total number of hours of each category of wind direction for the indicated period of record, stability class and elevation

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TABLE 4B

CLASSIFICATION OF ATMOSPHERIC STABILITY

Stability Classification	Pasquill Categories	Sigma-Theta [a] (degrees)	Temperature change with height (degrees-C/100m)
Extremely unstable	A	25.0	< -1.9
Moderately unstable	B	20.0	-1.9 to - 1.7
Slightly unstable	C	15.0	-1.7 to - 1.5
Neutral	D	10.0	-1.5 to -0.5
Slightly stable	E	5.0	-0.5 to 1.5
Moderately stable	F	2.5	1.5 to 4.0
Extremely stable	G	1.7	> 4.0

[a] Standard deviation of horizontal wind direction fluctuation over a period of 15 minutes to 1 hour. The values shown are averages for each stability classification.