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February 26, 2001
2130-01-20056

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Oyster Creek Generating Station
Docket No. 50-219
2000 Annual Radioactive Effluent Release Report

Attached is a copy of the Oyster Creek Annual Radioactive Effluent Release Report for the period covering January through December 31, 2000. This submittal is made in accordance with 10 CFR 50.36(a)(2) and our Operating License and Technical Specifications.

If you should have any questions or require further information, please contact Ms. Brenda DeMerchant, OC Licensing Engineer, at 609-971-4642.

Very truly yours,



Ron J. DeGregorio
Vice President
Oyster Creek

Enclosure

cc: Administrator, Region I
NRC Project Manager
NRC Sr. Resident Inspector
Chief, Bureau of Nuclear Engrg., NJ Dept. of Env. Protection

IE48

2000
Annual Radioactive Effluent Release Report
Oyster Creek Generating Station
AmerGen Energy Company

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EXECUTIVE SUMMARY

AMERGEN ENERGY COMPANY OYSTER CREEK GENERATING STATION ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT JANUARY 1, 2000 THROUGH DECEMBER 31, 2000

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, 2000 through December 31, 2000.

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. Similarly, liquid effluent data were used to calculate a maximum hypothetical dose to an individual from liquid effluents for any shoreline exposure. Doses to the public from consumption of shellfish and fish harvested from the canal were also calculated.

Calculations of the maximum hypothetical dose to an individual from liquid and gaseous effluents were performed using a mathematical model, which is based on the methods defined by the U.S. Nuclear Regulatory Commission.

The maximum hypothetical doses are conservative overestimates of the actual off-site doses which are likely to occur. For example, the dose does not take into consideration the removal of radioactive material from salt water by precipitation of insoluble salts, absorption onto sediment, or biological removal.

Radioactive airborne discharges from the facility during 2000 consisted of 182 curies of noble gases, $1.69\text{E-}1$ (0.169) curies of radioiodines, $1.43\text{E-}2$ curies of particulate activity, and 52.2 curies of tritium.

One liquid radioactive discharge, which was the result of flushing the Fire Service System, was made from the facility during the reporting period. A total of 620 gallons ($2.35\text{E}3$ liters) of water containing $1.37\text{E-}5$ curies of tritium was released to the discharge canal. No other nuclides were detected in this release.

The maximum hypothetical calculated organ dose (thyroid) to any individual due to gaseous effluents (0.204 mrem/year) was approximately 1.36 percent of the annual limit. The maximum hypothetical calculated whole body dose to any individual due to gaseous effluents ($2.47\text{E-}3$ mrem/year) was $4.94\text{E-}4$ percent of the annual limit.

The maximum hypothetical calculated organ dose (GI tract) attributable to liquid effluents ($1.68\text{E-}10$ mrem/year) was $1.68\text{E-}9$ percent of the annual limit while the maximum hypothetical calculated whole body dose to any individual due to liquid effluents ($1.68\text{E-}10$ mrem/year) was $5.60\text{E-}9$ percent of the annual limit.

Twenty-five (25) solid, low level radioactive waste shipments, totaling approximately 359.1 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 total maximum hypothetical whole body dose of $2.36\text{E-}2$ mrem/year received by any individual from gaseous and liquid effluents from the Oyster Creek Generating Station for the reporting period is over 12,000 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. 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 - 2000

TABLE 1
ANNUAL OFFSITE DOSES DUE TO RADIONUCLIDES IN EFFLUENTS
January 1, 2000 through December 31, 2000

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	Liquid GI Tract	Noble Gas Total Body	Noble Gas Skin	H-3, Iodines, & Particulates Thyroid	Noble Gas Gamma Dose	Noble Gas Beta Dose	I-131, I-133, & Particulates Thyroid
	mrem	mrem	mrem	mrem	mrem	mRad	mRad	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
2000 Dose	1.68E-10 mrem	1.68E-10 mrem	2.47E-03 mrem	4.71E-03 mrem	2.04E-01 mrem	1.52E-02 mrem	1.10E-02 mrem	2.04E-01 mrem
Percent of Limit	5.60E-09 Percent	1.68E-09 Percent	4.94E-04 Percent	1.57E-04 Percent	1.36E-02 Percent	1.52E-01 Percent	5.50E-02 Percent	1.36E+00 Percent

Reference	ODCM 4.6.1.1.8.A	ODCM 4.6.1.1.8.A
	All Effluents Total Body	All Effluents Thyroid
	mrem	mrem
ODCM Limit	25 mrem/year	75 mrem/year
2000 Dose	2.36E-02 mrem	2.06E-01 mrem
Percent of Limit	9.44E-02 Percent	2.75E-01 Percent

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ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2000 THROUGH DECEMBER 31, 2000

YEAR 2000 EVENT REPORT

LIQUID EFFLUENT RELEASES

One only liquid radioactive release occurred when 620 gallons (2.35E3 liters) of water were released to the Discharge Canal from the Fire Service System. The total amount of radioactivity released was 1.37E-5 curies of tritium.

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. These changes to the ODCM consisted of revising a factor in a liquid radiation monitor alarm setpoint equation, revising the distances to and the exhibit showing the OCGS site boundary, and fine tuning the distance and azimuth information used to describe the locations of the sampling stations for the Radiological Environmental Monitoring Program.

EFFLUENT MONITORS OUT OF SERVICE GREATER THAN 30 DAYS

The following effluent monitors were out of service for greater than thirty days:

- 1-5 Sump Liquid Radiation Monitor; from January 1, 2000 to June 9, 2000; due to detector failure to meet calibration criteria.
- AOG Building Vent Radiation Monitor; from August 8, 2000 through December 31, 2000; due to being out of calibration.
- Radwaste Liquid Overboard Discharge Monitor; from October 16, 2000 through December 31, 2000; due to Radwaste overboard discharge line being abandoned.

CHANGES TO THE PROCESS CONTROL PLAN

There were no changes to the Process Control Plan (PCP) during 2000.

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
SUPPLEMENTAL INFORMATION

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 μ Ci/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.

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SUPPLEMENTAL INFORMATION

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 μ Ci/ml.

3. Average Energy

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

First Quarter:	2.48E-01	Mev (gamma - elevated release)
Second Quarter:	2.48E-01	Mev (gamma - elevated release)
Third Quarter:	2.15E-01	Mev (gamma - elevated release)
Fourth Quarter:	3.44E-01	Mev (gamma - elevated release)
Annual:	2.30E-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: 1 release
 2. Total time period for batch releases: 1690 minutes
 3. Maximum time period for a batch release: 1690 minutes
 4. Average time period for batch releases: 1690 minutes
 5. Minimum time period for a batch release: 1690 minutes
 6. Average stream flow during periods of release of effluent into a flowing stream: 3.75 E5 gallons/minute
- 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 - 2000
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	7.13E-01	2.13E+00	1.57E+02	2.22E+01	1.82E+02	+/- 25
2. Average release rate for period	μ Ci/sec	9.07E-02	2.71E-01	1.97E+01	2.79E+00	5.75E+00	
3. Percent of Technical Specification							
a. 0.21/Energy (average) - gamma (elevated release only)	%	1.07E-05	3.20E-05	2.01E-03	4.57E-04	6.29E-04	
b. Dose rate due to gaseous effluent -							
Total Body - 500 mrem/year	%					4.94E-04	
Skin - 3000 mrem/year	%					1.57E-04	
c. Air dose due to noble gas in gaseous effluent -							
5 mRad/calendar quarter due to gamma radiation	%	2.40E-04	6.90E-04	2.40E-02	2.90E-01		
10 mRad/calendar quarter due to beta radiation	%	2.66E-05	1.59E-04	7.53E-03	1.10E-01		
10 mRad/calendar year due to gamma radiation	%					1.52E-01	
20 mRad/calendar year due to beta radiation	%					5.50E-02	
B. Iodines							
1. Total iodine-131	Ci	1.61E-04	3.53E-04	1.66E-02	3.30E-02	5.01E-02	+/- 25
2. Average release rate for period	μ Ci/sec	2.05E-05	4.49E-05	2.09E-03	4.14E-03	1.58E-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)	%					1.36E-02	
b. Dose due to radioiodine and particulates in gaseous effluent -							
Any body organ per calendar quarter - 7.5 mrem	%	1.07E-02	4.01E-02	5.91E-01	2.21E+00		
Any body organ per calendar year - 15 mrem	%					1.36E+00	
C. Particulates							
1. Particulates with half-lives > 8 days	Ci	6.86E-04	8.85E-04	7.43E-03	5.31E-03	1.43E-02	+/- 25
2. Average release rate for period	μ Ci/sec	8.73E-05	1.13E-04	9.35E-04	6.68E-04	4.52E-04	
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)	%					1.36E-02	
b. Dose due to radioiodine and particulates in gaseous effluent -							
Any body organ per calendar quarter - 7.5 mrem	%	1.07E-02	4.01E-02	5.91E-01	2.21E+00		
Any body organ per calendar year - 15 mrem	%					1.36E+00	
4. Gross alpha radioactivity	Ci	< LLD	1.23E-06	1.677E-06	1.59E-06	4.498E-06	
C. Tritium							
1. Total Release	Ci	2.18E+01	1.30E+01	7.11E+00	1.02E+01	5.22E+01	+/- 25
2. Average release rate for period	μ Ci/sec	2.77E+00	1.66E+00	8.95E-01	1.29E+00	1.65E+00	
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)	%					1.36E-02	

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

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	< LLD	< LLD	6.00E+00	1.32E+00	7.32E+00
krypton-87	Ci	< LLD	< LLD	1.85E+01	2.82E+00	2.13E+01
krypton-88	Ci	< LLD	< LLD	< LLD	9.34E-01	9.34E-01
xenon-133	Ci	< LLD	< LLD	7.28E+01	5.13E+00	7.79E+01
xenon-135	Ci	7.13E-01	2.13E+00	5.96E+01	1.03E+01	7.27E+01
xenon-135m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-138	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
Total for period	Ci	7.13E-01	2.13E+00	1.57E+02	2.05E+01	1.80E+02
2. Iodines						
iodine-131	Ci	1.61E-04	3.53E-04	1.66E-02	3.16E-02	4.87E-02
iodine-132	Ci	< LLD	< LLD	2.13E-02	1.21E-02	3.34E-02
iodine-133	Ci	5.56E-04	1.82E-03	1.98E-02	2.93E-02	5.15E-02
iodine-135	Ci	< LLD	< LLD	1.07E-02	2.48E-02	3.55E-02
Total for period	Ci	7.17E-04	2.17E-03	6.84E-02	9.78E-02	1.69E-01
C. Particulates						
strontium-89	Ci	2.47E-04	4.36E-04	5.77E-03	3.47E-03	9.92E-03
strontium-90	Ci	2.80E-06	1.11E-06	1.65E-05	6.64E-05	8.68E-05
cesium-134	Ci	< LLD	< LLD	2.84E-05	< LLD	2.84E-05
cesium-137	Ci	9.33E-06	3.09E-06	1.39E-04	8.72E-05	2.39E-04
barium-140	Ci	1.08E-04	4.44E-04	1.40E-03	1.55E-03	3.50E-03
lanthanum-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
chromium-51	Ci	5.92E-07	< LLD	< LLD	< LLD	5.92E-07
manganese-54	Ci	6.10E-06	< LLD	1.99E-05	2.53E-05	5.13E-05
cobalt-58	Ci	8.61E-08	< LLD	< LLD	< LLD	8.61E-08
cobalt-60	Ci	3.10E-04	< LLD	5.06E-05	1.11E-04	4.72E-04
technetium-99m	Ci	6.06E-08	< LLD	< LLD	< LLD	6.06E-08
Total for period	Ci	6.84E-04	8.84E-04	7.42E-03	5.31E-03	1.43E-02

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

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	< LLD	< LLD	< LLD	7.15E-02	7.15E-02
krypton-87	Ci	< LLD	< LLD	< LLD	3.02E-01	3.02E-01
krypton-88	Ci	< LLD	< LLD	< LLD	1.87E-01	1.87E-01
xenon-133	Ci	< LLD	< LLD	< LLD	1.29E-03	1.29E-03
xenon-135	Ci	< LLD	< LLD	< LLD	1.15E+00	1.15E+00
xenon-135m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-138	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
Total for period	Ci	< LLD	< LLD	< LLD	1.71E+00	1.71E+00
2. Iodines						
iodine-131	Ci	< LLD	< LLD	2.59E-05	1.36E-03	1.39E-03
iodine-133	Ci	< LLD	< LLD	7.14E-06	5.11E-05	5.82E-05
iodine-135	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Total for period	Ci	< LLD	< LLD	3.30E-05	1.41E-03	1.44E-03
C. Particulates						
strontium-89	Ci	2.33E-06	< LLD	2.3E-07	7.10E-08	2.63E-06
strontium-90	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-134	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-137	Ci	1.68E-08	4.51E-07	9.61E-07	< LLD	1.43E-06
barium-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
lanthanum-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
manganese-54	Ci	9.37E-08	< LLD	< LLD	< LLD	9.37E-08
cobalt-60	Ci	< LLD	< LLD	< LLD	4.36E-06	4.36E-06
Total for period	Ci	2.44E-06	4.51E-07	1.19E-06	4.43E-06	8.51E-06

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

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	< LLD	< LLD	< LLD	< LLD	< LLD	+/- 25
2. Average diluted concentration during period	uCi/ml	-	-	-	-	-	
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	%					-	
b. Limit on Dose Due to Liquid Effluent							
Total Body - 1.5 mrem/calendar quarter	%	-	-	-	-		
Any Body Organ - 5.0 mrem/calendar quarter	%	-	-	-	-		
Total Body - 3.0 mrem/calendar year	%					-	
Any Body Organ - 10.0 mrem/calendar year	%					-	
B. Tritium							
1. Total release	Ci	< LLD	< LLD	< LLD	1.37E-05	1.37E-05	+/- 25
2. Average diluted concentration during period	uCi/ml	-	-	-	3.82E-14	7.95E-15	
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	%					7.95E-11	
b. Limit on Dose Due to Liquid Effluent							
Total Body - 1.5 mrem/calendar quarter	%	-	-	-	1.12E-08		
Any Body Organ - 5.0 mrem/calendar quarter	%	-	-	-	3.36E-09		
Total Body - 3.0 mrem/calendar year	%					5.60E-09	
Any Body Organ - 10.0 mrem/calendar year	%					1.68E-09	
C. Dissolved and entrained gases							
1. Total release	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	+/- 25
2. Average diluted concentration during period	uCi/ml	-	-	-	-	-	
3. Percent of Technical Specification							
a. Shall not exceed 2.0 E-4 uCi/ml	%					-	
b. Limit on Dose Due to Liquid Effluent							
Total Body - 1.5 mrem/calendar quarter	%	-	-	-	-		
Any Body Organ - 5.0 mrem/calendar quarter	%	-	-	-	-		
Total Body - 3.0 mrem/calendar year	%					-	
Any Body Organ - 10.0 mrem/calendar year	%					-	
D. Gross alpha radioactivity							
1. Total release	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	+/- 25
E. Volume of waste released (prior to dilution)							
	liters	0.00E+00	0.00E+00	0.00E+00	2.35E+03	2.35E+03	+/- 10
F. Volume of dilution water used during period							
	liters	4.30E+11	4.68E+11	4.66E+11	3.59E+11	1.72E+12	+/- 10

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

TABLE 2B
LIQUID EFFLUENTS

Nuclides Released	Unit	Batch Mode				
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total
strontium-89	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
strontium-90	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-134	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-137	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
iodine-131	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cobalt-58	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cobalt-60	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
iron-59	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
zinc-65	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
manganese-54	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
chromium-51	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
zirconium-95	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
niobium-95	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
technetium-99m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
barium-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
lanthanum-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cerium-141	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Other	Ci	None	None	None	None	None
unidentified	Ci	None	None	None	None	None
Total for period	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-133	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-135	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Total for period	Ci	< LLD	< LLD	< LLD	< LLD	< LLD

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
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	3.26E+01	+/- 25
	Ci	7.33E+01	
b. Dry compressible waste, contaminated equipment, etc.	m ³	3.03E+02	+/- 25
	Ci	9.77E-01	
c. Irradiated components, control rods, etc.	m ³	3.25E+00	+/- 25
	Ci	1.79E+04	
d. Evaporator Bottoms (shipped in liquid form to a Waste Processor)	m ³	2.03E+01	+/- 25
	Ci	8.46E-01	

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 _____	4.68E+01	3.43E+01
cesium-137 _____	2.66E+01	1.95E+01
iron-55 _____	1.14E+01	8.36E+00
b. cobalt-60 _____	5.89E+01	5.75E-01
cesium-137 _____	1.80E+01	1.76E-01
iron-55 _____	1.20E+01	1.17E-01
c. cobalt-60 _____	7.04E+01	1.26E+04
iron-55 _____	2.44E+01	4.35E+03
nickel-63 _____	4.92E+00	8.78E+02
d. cesium-137 _____	7.74E+01	6.55E-01
H-3 _____	1.63E+01	1.38E-01
cobalt-60 _____	4.92E+00	4.16E-02

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

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
9	Motor Vehicle	Barnwell, S.C.
2	Motor Vehicle	Richland, W.A.
5	Motor Vehicle	Oak Ridge, T.N.
9	Motor Vehicle	Wampum, P.A.

B. IRRADIATED FUEL SHIPMENTS (Disposition)

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None Shipped		

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
TABLE 3B
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Summary Of All Wastes

Period of Performance: January 1, 2000 through December 31, 2000

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft ³)	(M ³)		
A	12311.1	348.7	4.13E+00	+/- 25 %
B	252.8	7.2	7.10E+01	+/- 25 %
C	114.8	3.3	1.79E+04	+/- 25 %
All	12678.7	359.1	1.79E+04	+/- 25 %

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

TABLE 3B (cont.)
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Summary of All Shipments

Period of Performance: January 1, 2000 through December 31, 2000

Waste Class: A		
Nuclide	Activity (Curies)	Percent Abundance (Percent)

Co-60	2.16E+00	5.22E+01
Cs-137	8.53E-01	2.06E+01
Fe-55	4.05E-01	9.80E+00
Mn-54	3.51E-01	8.48E+00
H-3	1.52E-01	3.69E+00
Fe-59	5.29E-02	1.28E+00
Co-58	3.19E-02	7.72E-01
Cr-51	1.38E-02	3.34E-01
Sr-90	2.25E-03	5.45E-02
Pu-241	2.10E-03	5.09E-02
Ni-63	3.67E-02	8.89E-01
Ni-59	8.40E-04	2.03E-02
Cm-242	9.63E-06	2.33E-04
Other	7.44E-02	1.80E+00
Total	4.13E+00	1.00E+02

Waste Class: B		
Nuclide	Activity (Curies)	Percent Abundance (Percent)

Co-60	3.28E+01	4.62E+01
Cs-137	1.95E+01	2.75E+01
Fe-55	8.07E+00	1.14E+01
Mn-54	4.85E+00	6.83E+00
Cr-51	2.14E+00	3.01E+00
H-3	6.46E-01	9.10E-01
Ni-63	3.73E-01	5.25E-01
Sr-90	2.47E-01	3.48E-01
Pu-241	1.78E-01	2.51E-01
Ni-59	3.26E-03	4.59E-03
Cm-242	1.69E-03	2.38E-03
Other	2.19E+00	3.08E+00
Total	7.10E+01	1.00E+02

Waste Class: C		
Nuclide	Activity (Curies)	Percent Abundance (Percent)

Co-60	1.26E+04	7.04E+01
Fe-55	4.35E+03	2.44E+01
Ni-63	8.78E+02	4.92E+00
Mn-54	2.63E+01	1.47E-01
Ni-59	4.94E+00	2.77E-02
C-14	1.53E+00	8.54E-03
H-3	1.08E-01	6.06E-04
Nb-94	1.57E-02	8.80E-05
Pu-241	1.12E-02	6.28E-05
Tc-99	7.28E-03	4.08E-05
Cm-242	3.55E-04	1.99E-06
Other	1.91E+01	1.07E-01
Total	1.79E+04	1.00E+02

Waste Class: All

Nuclide	Activity (Curies)	Percent Abundance (Percent)
---------	----------------------	-----------------------------------

Co-60	1.26E+04	7.03E+01
Fe-55	4.36E+03	2.43E+01
Ni-63	8.78E+02	4.90E+00
Mn-54	3.15E+01	1.76E-01
Cs-137	2.04E+01	1.13E-01
Ni-59	4.94E+00	2.76E-02
Cr-51	2.15E+00	1.20E-02
C-14	1.53E+00	8.50E-03
H-3	9.07E-01	5.05E-03
Sr-90	2.49E-01	1.39E-03
Pu-241	1.91E-01	1.07E-03
Fe-59	5.29E-02	2.95E-04
Co-58	3.19E-02	1.78E-04
Nb-94	1.57E-02	8.76E-05
Tc-99	7.28E-03	4.06E-05
Cm-242	2.05E-03	1.15E-05
Other	2.14E+01	1.19E-01
Total	1.79E+04	1.00E+02

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
TABLE 3B (cont.)
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Spent Resins, Filters, and Filter Sludge

Period of Performance: January 1, 2000 through December 31, 2000

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft ³)	(M ³)		
A	897.0	25.4	2.31	+/- 25 %
B	252.8	7.2	71	+/- 25 %
C	0.0	0.0	0	+/- 25 %
All	1149.8	32.6	73.3	+/- 25 %

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

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, 2000 through December 31, 2000

Waste Class: A		
Nuclide	Activity (Curies)	Percent Abundance (Percent)

Co-60	1.54E+00	6.67E+01
Mn-54	3.01E-01	1.30E+01
Fe-55	2.88E-01	1.25E+01
Fe-59	5.29E-02	2.29E+00
Co-58	3.19E-02	1.38E+00
Ni-63	2.93E-02	1.27E+00
Cs-137	2.24E-02	9.70E-01
H-3	1.04E-02	4.50E-01
Ni-59	7.69E-04	3.33E-02
Pu-241	1.26E-04	5.45E-03
Sr-90	9.65E-05	4.18E-03
Cm-242	1.49E-06	6.45E-05
Other	3.31E-02	1.43E+00
Total	2.31E+00	1.00E+02

Waste Class: B		
Nuclide	Activity (Curies)	Percent Abundance (Percent)

Co-60	3.28E+01	4.62E+01
Cs-137	1.95E+01	2.75E+01
Fe-55	8.07E+00	1.14E+01
Mn-54	4.85E+00	6.83E+00
Cr-51	2.14E+00	3.01E+00
H-3	6.46E-01	9.10E-01
Ni-63	3.73E-01	5.25E-01
Sr-90	2.47E-01	3.48E-01
Pu-241	1.78E-01	2.51E-01
Ni-59	3.26E-03	4.59E-03
Cm-242	1.69E-03	2.38E-03
Other	2.19E+00	3.08E+00
Total	7.10E+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	3.43E+01	4.68E+01
Cs-137	1.95E+01	2.66E+01
Fe-55	8.36E+00	1.14E+01
Mn-54	5.15E+00	7.03E+00
Cr-51	2.14E+00	2.92E+00
H-3	6.56E-01	8.95E-01
Ni-63	4.02E-01	5.49E-01
Sr-90	2.47E-01	3.37E-01
Pu-241	1.78E-01	2.43E-01
Fe-59	5.29E-02	7.22E-02
Co-58	3.19E-02	4.35E-02
Ni-59	4.03E-03	5.50E-03
Cm-242	1.69E-03	2.31E-03
Other	2.22E+00	3.03E+00
Total	7.33E+01	1.00E+02

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
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, 2000 through December 31, 2000

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft ³)	(M ³)		
A	10696.5	302.9	9.77E-01	+/- 25 %
B	0.0	0.0	0.00E+00	
C	0.0	0.0	0.00E+00	
All	10696.5	302.9	9.77E-01	+/- 25 %

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
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, 2000 through December 31, 2000

Waste Class: A

Nuclide	Activity (Curies)	Percent Abundance (Percent)
---------	----------------------	-----------------------------------

Co-60	5.75E-01	5.89E+01
Cs-137	1.76E-01	1.80E+01
Fe-55	1.17E-01	1.20E+01
Mn-54	4.96E-02	5.08E+00
Cr-51	1.38E-02	1.41E+00
Ni-63	5.22E-03	5.34E-01
H-3	4.02E-03	4.11E-01
Sr-90	1.56E-03	1.60E-01
Pu-241	1.14E-03	1.17E-01
Ni-59	4.97E-05	5.09E-03
Cm-242	8.14E-06	8.33E-04
Other	3.36E-02	3.44E+00
Total	9.77E-01	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	5.75E-01	5.89E+01
Cs-137	1.76E-01	1.80E+01
Fe-55	1.17E-01	1.20E+01
Mn-54	4.96E-02	5.08E+00
Cr-51	1.38E-02	1.41E+00
Ni-63	5.22E-03	5.34E-01
H-3	4.02E-03	4.11E-01
Sr-90	1.56E-03	1.60E-01
Pu-241	1.14E-03	1.17E-01
Ni-59	4.97E-05	5.09E-03
Cm-242	8.14E-06	8.33E-04
Other	3.36E-02	3.44E+00
Total	9.77E-01	1.00E+02

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
TABLE 3B (CONT.)
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Irradiated Components

Period of Performance: January 1, 2000 through December 31, 2000

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft ³)	(M ³)		
A	0.0	0.0	0.00E+00	
B	0.0	0.0	0.00E+00	
C	114.8	3.3	1.79E+04	+/- 25 %
All	114.8	3.3	1.79E+04	+/- 25 %

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

TABLE 3B (cont.)
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Irradiated Components

Period of Performance: January 1, 2000 through December 31, 2000

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	1.26E+04	7.04E+01
Fe-55	4.35E+03	2.44E+01
Ni-63	8.78E+02	4.92E+00
Mn-54	2.63E+01	1.47E-01
Ni-59	4.94E+00	2.77E-02
C-14	1.53E+00	8.54E-03
H-3	1.08E-01	6.06E-04
Nb-94	1.57E-02	8.80E-05
Pu-241	1.12E-02	6.28E-05
Tc-99	7.28E-03	4.08E-05
Cm-242	3.55E-04	1.99E-06
Other	1.91E+01	1.07E-01
Total	1.79E+04	1.00E+02

Waste Class: All

Nuclide	Activity (Curies)	Percent Abundance (Percent)
---------	----------------------	-----------------------------------

Co-60	1.26E+04	7.04E+01
Fe-55	4.35E+03	2.44E+01
Ni-63	8.78E+02	4.92E+00
Mn-54	2.63E+01	1.47E-01
Ni-59	4.94E+00	2.77E-02
C-14	1.53E+00	8.54E-03
H-3	1.08E-01	6.06E-04
Nb-94	1.57E-02	8.80E-05
Pu-241	1.12E-02	6.28E-05
Tc-99	7.28E-03	4.08E-05
Cm-242	3.55E-04	1.99E-06
Other	1.91E+01	1.07E-01
Total	1.79E+04	1.00E+02

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000
TABLE 3B (CONT.)
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Liquid Evaporator Bottoms Shipped To An Offsite Waste Processor

Period of Performance: January 1, 2000 through December 31, 2000

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft ³)	(M ³)		
A	717.6	20.3	8.46E-01	+/- 25 %
B	0.0	0.0	0.00E+00	
C	0.0	0.0	0.00E+00	
All	717.6	20.3	8.46E-01	+/- 25 %

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

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

TABLE 3B (cont.)

Period of Performance: January 1, 2000 through December 31, 2000

Cs-137	6.55E-01	7.74E+01
H-3	1.38E-01	1.63E+01
Co-60	4.16E-02	4.92E+00
Ni-63	2.22E-03	2.62E-01
Pu-241	8.37E-04	9.89E-02
Sr-90	5.96E-04	7.04E-02
Ni-59	2.11E-05	2.49E-03
Other	7.73E-03	9.14E-01
Total	8.46E-01	1.00E+02

	N	
	O	
	N	
	E	
	S	
	H	
	I	
	P	
	P	
	E	
	D	
Total	N/A	N/A

	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	6.55E-01	7.74E+01
H-3	1.38E-01	1.63E+01
Co-60	4.16E-02	4.92E+00
Ni-63	2.22E-03	2.62E-01
Pu-241	8.37E-04	9.89E-02
Sr-90	5.96E-04	7.04E-02
Ni-59	2.11E-05	2.49E-03
Other	7.73E-03	9.14E-01
Total	8.46E-01	1.00E+02

OYSTER CREEK GENERATING STATION
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2000

TABLE 4A
HOURS AT EACH WIND SPEED AND DIRECTION ^a

PERIOD OF RECORD:	January 1, 2000 through December 31, 2000
STABILITY CLASS:	All Pasquill Categories
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	73	126	56	3	0	0	258
NNE	68	122	81	11	0	0	282
NE	62	166	133	46	0	0	407
ENE	49	213	226	64	0	0	552
E	40	176	103	5	0	0	324
ESE	34	119	58	4	0	0	215
SE	46	156	112	12	0	0	326
SSE	61	117	118	12	3	0	311
S	100	170	179	46	8	3	506
SSW	106	191	177	85	5	0	564
SW	179	317	105	14	0	0	615
WSW	282	445	164	16	2	0	909
W	288	362	202	55	2	0	909
WNW	195	356	297	121	10	0	979
NW	242	401	280	91	3	0	1017
NNW	132	266	156	39	0	0	593
VARIABLE	0	0	0	0	0	0	0
TOTAL	1957	3703	2447	624	33	3	8767
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	18						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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category A
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	1	16	18	1	0	0	36
NNE	1	14	5	0	0	0	20
NE	1	25	34	1	0	0	61
ENE	0	37	64	19	0	0	120
E	1	47	33	4	0	0	85
ESE	0	39	29	0	0	0	68
SE	0	26	66	0	0	0	92
SSE	0	5	63	5	0	0	73
S	0	10	66	33	5	0	114
SSW	1	12	32	38	2	0	85
SW	1	19	34	4	0	0	58
WSW	0	30	74	8	0	0	112
W	1	37	72	21	1	0	132
WNW	0	29	94	43	4	0	170
NW	1	35	97	35	1	0	169
NNW	2	27	59	16	0	0	104
VARIABLE	0	0	0	0	0	0	0
TOTAL	10	408	840	228	13	0	1499
Periods of Calm (hours):		0	Hours				
Hours of missing data (Total):		18	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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category B
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	1	14	4	0	0	0	19
NNE	2	10	2	0	0	0	14
NE	5	14	10	0	0	0	29
ENE	0	26	15	1	0	0	42
E	1	18	7	0	0	0	26
ESE	2	11	1	0	0	0	14
SE	0	20	14	1	0	0	35
SSE	1	12	14	0	0	0	27
S	2	8	24	2	0	0	36
SSW	0	7	18	4	1	0	30
SW	1	17	6	0	0	0	24
WSW	1	19	18	0	0	0	38
W	1	10	17	4	0	0	32
WNW	3	19	17	19	0	0	58
NW	3	18	29	18	2	0	70
NNW	2	20	10	5	0	0	37
VARIABLE	0	0	0	0	0	0	0
TOTAL	25	243	206	54	3	0	531
Periods of Calm (hours):	0 Hours						
Hours of missing data (Total):	18 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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category C
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	2	2	3	0	0	0	7
NNE	0	7	2	0	0	0	9
NE	1	7	5	1	0	0	14
ENE	0	11	8	1	0	0	20
E	3	11	3	0	0	0	17
ESE	1	11	2	0	0	0	14
SE	2	10	2	0	0	0	14
SSE	0	5	6	0	0	0	11
S	2	5	9	0	1	0	17
SSW	0	6	5	5	0	0	16
SW	1	2	1	1	0	0	5
WSW	1	7	4	1	0	0	13
W	0	8	7	5	0	0	20
WNW	0	8	7	10	1	0	26
NW	2	10	5	4	0	0	21
NNW	0	10	4	1	0	0	15
VARIABLE	0	0	0	0	0	0	0
TOTAL	15	120	73	29	2	0	239
Periods of Calm (hours):	0 Hours						
Hours of missing data (Total):	18 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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category D
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	15	51	18	1	0	0	85
NNE	21	60	29	9	0	0	119
NE	21	71	57	15	0	0	164
ENE	21	100	112	22	0	0	255
E	19	63	42	1	0	0	125
ESE	9	40	20	2	0	0	71
SE	11	62	22	3	0	0	98
SSE	13	48	22	1	1	0	85
S	13	62	44	6	0	2	127
SSW	16	42	57	26	1	0	142
SW	15	33	27	4	0	0	79
WSW	9	49	30	4	2	0	94
W	12	35	39	14	1	0	101
WNW	12	43	71	36	4	0	166
NW	21	86	56	24	0	0	187
NNW	23	69	39	13	0	0	144
VARIABLE	0	0	0	0	0	0	0
TOTAL	251	914	685	181	9	2	2042
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	18						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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category E
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	24	35	12	1	0	0	72
NNE	21	28	40	2	0	0	91
NE	21	44	24	27	0	0	116
ENE	18	38	26	20	0	0	102
E	7	33	18	0	0	0	58
ESE	9	17	6	2	0	0	34
SE	22	33	8	8	0	0	71
SSE	25	42	13	6	2	0	88
S	42	67	36	5	2	1	153
SSW	38	103	65	12	1	0	219
SW	53	155	36	5	0	0	249
WSW	39	146	36	3	0	0	224
W	41	119	65	10	0	0	235
WNW	37	162	106	13	1	0	319
NW	41	135	92	10	0	0	278
NNW	38	81	43	4	0	0	166
VARIABLE	0	0	0	0	0	0	0
TOTAL	476	1238	626	128	6	1	2475
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	18						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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category F
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	13	7	1	0	0	0	21
NNE	8	3	3	0	0	0	14
NE	6	5	3	2	0	0	16
ENE	6	1	1	1	0	0	9
E	4	4	0	0	0	0	8
ESE	5	1	0	0	0	0	6
SE	9	3	0	0	0	0	12
SSE	10	5	0	0	0	0	15
S	23	16	0	0	0	0	39
SSW	31	18	0	0	0	0	49
SW	39	65	1	0	0	0	105
WSW	60	90	2	0	0	0	152
W	40	67	1	1	0	0	109
WNW	38	60	2	0	0	0	100
NW	38	57	1	0	0	0	96
NNW	17	32	1	0	0	0	50
VARIABLE	0	0	0	0	0	0	0
TOTAL	347	434	16	4	0	0	801
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	18						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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category G
ELEVATION:	33 foot

Wind Direction	Wind Speed (mph) at 33 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	17	1	0	0	0	0	18
NNE	15	0	0	0	0	0	15
NE	7	0	0	0	0	0	7
ENE	4	0	0	0	0	0	4
E	5	0	0	0	0	0	5
ESE	8	0	0	0	0	0	8
SE	2	2	0	0	0	0	4
SSE	12	0	0	0	0	0	12
S	18	2	0	0	0	0	20
SSW	20	3	0	0	0	0	23
SW	69	26	0	0	0	0	95
WSW	172	104	0	0	0	0	276
W	193	86	1	0	0	0	280
WNW	105	35	0	0	0	0	140
NW	136	60	0	0	0	0	196
NNW	50	27	0	0	0	0	77
VARIABLE	0	0	0	0	0	0	0
TOTAL	833	346	1	0	0	0	1180
Periods of Calm (hours):	0 Hours						
Hours of missing data (Total):	18 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, 2000 through December 31, 2000
STABILITY CLASS:	All Pasquill Categories
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	11	55	120	109	71	10	376
NNE	16	78	143	118	38	30	423
NE	17	82	152	155	104	50	560
ENE	6	61	155	144	108	59	533
E	13	60	154	105	95	27	454
ESE	13	75	109	58	38	20	313
SE	19	57	145	49	25	15	310
SSE	8	63	140	93	24	9	337
S	8	54	159	189	42	26	478
SSW	9	50	135	246	145	78	663
SW	10	49	106	210	187	55	617
WSW	6	38	147	251	154	54	650
W	5	53	144	225	206	77	710
WNW	7	41	137	240	291	171	887
NW	5	46	139	266	284	151	891
NNW	5	42	111	191	170	46	565
VARIABLE	0	0	0	0	0	0	0
TOTAL	158	904	2196	2649	1982	878	8767
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	17						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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category A
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	0	1	0	0	2	0	3
NNE	0	2	2	0	0	0	4
NE	0	1	3	8	1	3	16
ENE	0	0	5	4	3	1	13
E	0	1	2	6	1	0	10
ESE	0	0	4	3	0	0	7
SE	0	0	2	0	0	0	2
SSE	0	0	2	7	1	0	10
S	0	0	2	9	0	0	11
SSW	0	0	1	8	5	3	17
SW	0	0	1	1	1	0	3
WSW	0	0	6	6	2	0	14
W	0	0	2	13	4	3	22
WNW	0	0	2	6	13	6	27
NW	0	0	7	5	16	5	33
NNW	0	0	0	2	2	1	5
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	5	41	78	51	22	197
Periods of Calm (hours):	0 Hours						
Hours of missing data (Total):	17 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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category B
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	0	0	5	3	3	0	11
NNE	0	1	6	1	0	0	8
NE	1	0	7	13	7	0	28
ENE	0	0	10	11	1	2	24
E	0	1	11	5	2	0	19
ESE	0	0	4	5	1	0	10
SE	0	0	16	7	0	0	23
SSE	0	0	5	7	1	0	13
S	0	0	4	18	4	0	26
SSW	0	0	1	8	9	10	28
SW	0	1	7	6	3	0	17
WSW	0	0	10	17	6	0	33
W	0	2	8	11	8	3	32
WNW	0	0	16	19	15	10	60
NW	0	0	4	20	13	10	47
NNW	0	0	2	12	8	1	23
VARIABLE	0	0	0	0	0	0	0
TOTAL	1	5	116	163	81	36	402
Periods of Calm (hours):		0	Hours				
Hours of missing data (Total):		17	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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category C
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	0	3	7	3	1	0	14
NNE	0	0	4	0	1	0	5
NE	0	3	15	15	2	1	36
ENE	0	3	23	8	6	3	43
E	0	0	22	3	6	0	31
ESE	0	8	18	5	1	0	32
SE	0	0	25	5	0	0	30
SSE	0	0	16	17	0	0	33
S	0	3	7	16	5	0	31
SSW	0	3	7	17	4	7	38
SW	0	4	5	10	4	1	24
WSW	0	3	26	22	5	1	57
W	0	2	21	16	16	3	58
WNW	0	3	12	23	25	20	83
NW	0	3	15	32	19	19	88
NNW	0	3	12	17	7	2	41
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	41	235	209	102	57	644
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	17						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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category D
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	5	32	45	20	15	3	120
NNE	5	44	65	52	26	25	217
NE	6	44	81	81	64	37	313
ENE	1	28	87	85	78	40	319
E	8	27	81	64	36	11	227
ESE	2	42	53	24	11	15	147
SE	5	32	77	19	15	6	154
SSE	3	34	69	33	8	1	148
S	5	19	75	68	18	7	192
SSW	3	18	48	70	52	36	227
SW	5	21	36	50	29	9	150
WSW	1	13	44	82	23	10	173
W	2	28	47	64	58	31	230
WNW	2	20	52	75	81	82	312
NW	0	27	60	82	83	88	340
NNW	2	23	60	62	37	26	210
VARIABLE	0	0	0	0	0	0	0
TOTAL	55	452	980	931	634	427	3479
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	17						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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category E
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	3	9	27	24	12	1	76
NNE	4	13	31	23	5	3	79
NE	5	12	19	27	20	8	91
ENE	1	13	15	26	18	10	83
E	3	13	23	21	42	15	117
ESE	3	12	20	14	22	5	76
SE	8	13	17	14	10	9	71
SSE	1	10	32	23	12	7	85
S	2	17	32	55	14	19	139
SSW	2	10	48	106	58	20	244
SW	3	15	38	87	94	22	259
WSW	0	7	26	59	60	18	170
W	1	6	32	76	69	20	204
WNW	1	8	30	68	86	37	230
NW	4	10	20	73	93	14	214
NNW	2	7	11	51	52	4	127
VARIABLE	0	0	0	0	0	0	0
TOTAL	43	175	421	747	667	212	2265
Periods of Calm (hours):	0 Hours						
Hours of missing data (Total):	17 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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category F
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	2	5	11	26	17	4	65
NNE	3	4	9	13	3	2	34
NE	2	4	10	2	9	1	28
ENE	1	6	6	6	2	3	24
E	1	13	6	4	8	1	33
ESE	4	5	5	4	3	0	21
SE	2	3	2	4	0	0	11
SSE	2	8	7	6	2	1	26
S	0	6	22	17	1	0	46
SSW	3	7	10	19	15	0	54
SW	2	3	10	31	41	16	103
WSW	2	2	12	44	48	20	128
W	2	6	13	20	23	8	72
WNW	1	1	13	40	38	8	101
NW	0	1	17	30	46	11	105
NNW	0	7	5	19	40	9	80
VARIABLE	0	0	0	0	0	0	0
TOTAL	27	81	158	285	296	84	931
Periods of Calm (hours):	0 Hours						
Hours of missing data (Total):	17 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, 2000 through December 31, 2000
STABILITY CLASS:	Pasquill Category G
ELEVATION:	380 foot

Wind Direction	Wind Speed (mph) at 380 foot level						Total
	1 - 3	4 - 7	8 - 12	13 - 18	19 - 24	> 24	
N	1	5	25	33	21	2	87
NNE	4	14	26	29	3	0	76
NE	3	18	17	9	1	0	48
ENE	3	11	9	4	0	0	27
E	1	5	9	2	0	0	17
ESE	4	8	5	3	0	0	20
SE	4	9	6	0	0	0	19
SSE	2	11	9	0	0	0	22
S	1	9	17	6	0	0	33
SSW	1	12	20	18	2	2	55
SW	0	5	9	25	15	7	61
WSW	3	13	23	21	10	5	75
W	0	9	21	25	28	9	92
WNW	3	9	12	9	33	8	74
NW	1	5	16	24	14	4	64
NNW	1	2	21	28	24	3	79
VARIABLE	0	0	0	0	0	0	0
TOTAL	32	145	245	236	151	40	849
Periods of Calm (hours):	0						Hours
Hours of missing data (Total):	17						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.