

**2007**

**ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT**

**OYSTER CREEK NUCLEAR GENERATING STATION**

**AMERGEN ENERGY COMPANY**

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## EXECUTIVE SUMMARY

### AMERGEN ENERGY COMPANY OYSTER CREEK NUCLEAR GENERATING STATION ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT JANUARY 1, 2007 THROUGH DECEMBER 31, 2007

This report summarizes the radioactive liquid and gaseous effluents from the Oyster Creek Nuclear 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, 2007, through December 31, 2007.

During 2007, there were no radiological liquid releases. Since there were no liquid discharges in 2007, there was no dose attributable to liquid effluents.

Radiation monitors measure radioactive gases released from the plant. Utilizing gaseous effluent data, the maximum hypothetical dose to any individual in the south-east sector of the plant (sector of predominant wind direction) was calculated using a mathematical model, which is based on the methods defined by the U.S. Nuclear Regulatory Commission. These methods accurately determine the types and quantities of radioactive materials being released to the environment.

The maximum hypothetical doses (Table 1) are conservative calculations of the actual off-site doses. 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 2007 consisted of 20.5 curies of noble gases, 9.94E-3 (0.00994) curies of radioiodines, 1.73E-3 (0.00173) curies of particulate activity, and 45.8 curies of tritium.

Seventeen (17) solid, low level radioactive waste shipments, totaling approximately 607 cubic meters, were shipped in Type IP-1 and IP-2 Containers and General Design Packages from the Oyster Creek Nuclear Generating Station during the reporting period. This material went to either a licensed burial site or to a waste processor for volume reduction. No solidification agent was used in any of the 17 shipments.

The maximum hypothetical calculated organ dose (thyroid) from iodines and particulates to any individual due to gaseous effluents was 1.33E-2 mRem (0.0133 mRem) which was approximately 0.00087 percent of the annual limit (Table 1). The maximum hypothetical calculated whole body dose to any individual due to gaseous effluents was 1.65E-4 mRem (.000165 mRem) which was 0.000033 percent of the annual limit.

The total maximum hypothetical organ dose (thyroid) due to all radiological effluents of  $1.33\text{E-}2$  mRem (0.0133 mRem) received by any individual from gaseous effluents from the Oyster Creek Nuclear Generating Station for the reporting period is over 22,000 times lower than the dose the average individual in the Oyster Creek Nuclear Generating Station area received from background radiation, including that from radon during the same time period. The background radiation dose averages approximately 300 mRem whole body per year in the Central New Jersey area, which is made up of contributions of approximately 100 mRem/year from background radiation and approximately 200 mRem/year from naturally occurring radon gas.

During 2007, there was no measurable direct radiation dose due to the operation of Oyster Creek Nuclear Generating Station beyond the site boundary in the southeast sector as shown by offsite thermoluminescent dosimeter (TLD) readings. The offsite dose due to effluents is an extremely small fraction of the 40CFR190 limits. Therefore, the combined direct radiation and effluent dose due to operation of Oyster Creek Nuclear Generating Station was in compliance with 40CFR190 in 2007.

Joint Frequency Tables of meteorological data, per Pasquill Category, as well as for all stability classes, are included. All data was collected from the on-site Meteorological Facility. Data recoveries for the 380-foot data and the 33-foot data were 99.0 percent and 98.8 percent, respectively. The UFSAR commits to Regulatory Guide (RG) 1.23 for Meteorological Facility data recovery. RG 1.23 requires data recovery of at least 90% on an annual basis.

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TABLE I  
ANNUAL OFFSITE DOSES DUE TO RADIONUCLIDES IN EFFLUENTS  
January 1, 2007 through December 31, 2007

Reference	ODCM 3.11.1.2	ODCM 3.11.1.2	ODCM 3.11.2.1	ODCM 3.11.2.1	ODCM 3.11.2.1	ODCM 3.11.2.2	ODCM 3.11.2.2	ODCM 3.11.2.3
	Liquid Total Body mrem	Liquid Liver mrem	Noble Gas Total Body mrem	Noble Gas Skin mrem	H-3, Iodines, & Particulates Thyroid mrem	Noble Gas Gamma Dose mRad	Noble Gas Beta Dose mRad	I-131, I-133, & Particulates Thyroid mrem
<b>ODCM Limit</b>	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
<b>2007 Dose</b>	0.00E+00 mrem	0.00E+00 mrem	1.65E-04 mrem	3.63E-04 mrem	1.34E-02 mrem	7.79E-04 mRad	9.64E-04 mRad	1.34E-02 mrem
<b>Percent of Limit</b>	0.00E+00 Percent	0.00E+00 Percent	3.30E-05 Percent	1.21E-05 Percent	8.93E-04 Percent	7.79E-03 Percent	4.82E-03 Percent	8.93E-02 Percent

Reference	ODCM 3.11.4	ODCM 3.11.4
	All Effluents Total Body mrem	All Effluents Thyroid mrem
<b>ODCM Limit</b>	25 mrem/year	75 mrem/year
<b>2007 Dose</b>	8.84E-03 mrem	1.35E-02 mrem
<b>Percent of Limit</b>	3.54E-02 Percent	1.80E-02 Percent

## LIQUID EFFLUENT RELEASES

There were no liquid radioactive releases from the facility in 2007. However, on July 17, 2007, a reactor SCRAM and cool-down resulted in the use of isolation condensers. Approximately 36,400 gallons of shell-side water were vented to the atmosphere as a ground-level release, with tritium being the principle radionuclide released. Any dose resulting from this release is well below limitations as specified in the Offsite Dose Calculation Manual and is included in the Table 1 summaries.

## CHANGES TO THE OFFSITE DOSE CALCULATION MANUAL

Revision 2 to the ODCM was implemented during 2007. Changes included:

- Clarification to allow Drywell purge only when the radioactive noble gas monitor is operating,
- Clarification of radwaste sampling requirements,
- Clarification of when to take composite samples,
- Explanation of venting path of containment Drywell,
- Clarification to specified REMP samples and how they may not be substituted.
- Not allowing substitution of vegetation samples in the REMP program,
- Explanation of the meteorological monitoring program,
- Clarification of the requirements of liquid effluent monitoring,
- Allowance for use of alternate but approved computer code for effluents,
- Corrections to units and values used in example calculations,
- Use of additional symbols in dose rate factors,
- Correction to solid radwaste processing flow diagram.

## EFFLUENT MONITORS OUT OF SERVICE GREATER THAN 30 DAYS

The AOG noble gas radiation monitor was out of service from May 31 to August 6, 2007. The monitor was out of service greater than 30 days due to an inappropriate change in prioritization by work scheduling. Once-per 48-hour compensatory sampling was performed during this time period. No other effluent monitors were out of service for greater than 30 days during 2007.

## CHANGES TO THE PROCESS CONTROL PLAN

There were two changes to the Process Control Plan (PCP) (RW-AA-100) during 2007. Revision 4 clarified the phrase "Technical Specification" and added wording requiring changes in the PCP to be reported in the Annual Radioactive Effluents Release Report. Revision 5 added the allowed use of NUKEM's compression dewatering technology and a definition statement to include Oil-Dry absorbent material.

## RELEASES FROM THE INDEPENDENT SPENT FUEL STORAGE FACILITY

The Independent Spent Fuel Storage Facility (ISFSI) is a closed system and the only exposure would be due to direct radiation. This includes iodines, particulates and noble gases. Based on offsite TLD readings, dose due to direct radiation from the ISFSI was less than 1mRem for 2007. Because it is a sealed unit, no radioactive material was released.

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SUPPLEMENTAL INFORMATION

**Facility: Oyster Creek Generating Station**

**Licensee: AmerGen Energy Company, L.L.C.**

**I. 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 3.11.2.1

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 3.11.2.2

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 3.11.4

The annual dose commitment to a MEMBER OF THE PUBLIC due to radioactive material in effluent and direct radiation from the OCNCS 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 3.11.2.1.

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 3.11.2.3.

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 3.11.2.1.

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 3.11.2.3.

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 3.11.1.1.

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 3.11.1.1.

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  $2.0 \times 10^{-4}$   $\mu$  Ci/mL.

ODCM 3.11.1.2.

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 3.11.4

The annual dose to a MEMBER OF THE PUBLIC due to radioactive material in effluents from the OCNCS 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  $1 \text{ E-}3 \text{ } \mu\text{Ci/mL}$ .

**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:	3.67E-01	Mev (gamma - elevated release)
Third Quarter:	2.48E-01	Mev (gamma - elevated release)
Fourth Quarter:	2.48E-01	Mev (gamma - elevated release)
Annual:	2.48E-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 weekly 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 weekly 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 gamma spectroscopy.
  2. Augmented Offgas (AOG) Vent - Filters are changed weekly and analyzed using gamma spectroscopy.
  3. Turbine Building Vent 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 HPGe detector, a low background beta counter, and liquid scintillation.

**5. Batch Releases**

- a. Liquid - There were no liquid releases during 2007.
  1. Number of batch releases: N/A
  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: No batch releases
  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  
There were no abnormal (liquid) releases during 2007
- b. Gaseous
  1. Number of releases: None
  2. Total activity released: N/A

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TABLE 1A  
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total	Est. Total Error. %
<b>A. Fission &amp; activation gases</b>							
1. Total release	Ci	3.62E+00	4.58E+00	4.58E+00	6.03E-01	2.05E+01	+/- 10
2. Average release rate for period	$\mu$ Ci/sec	4.66E-01	5.83E-01	5.76E-01	7.59E-02	6.48E-01	
3. Percent of Technical Specification							
a. 0.21/Energy (average) - gamma (elevated release only)	%	5.50E-05	1.76E-04	3.23E-04	3.01E-05	1.46E-04	
b. Dose rate due to gaseous effluent -							
Total Body - 500 mrem/year	%					3.30E-05	
Skin - 3000 mrem/year	%					1.21E-05	
c. Air dose due to noble gas in gaseous effluent -							
5 mRad/calendar quarter due to gamma radiation	%	2.08E-03	1.44E-02	1.46E-03	2.58E-04		
10 mRad/calendar quarter due to beta radiation	%	1.72E-04	9.59E-03	2.48E-04	2.56E-05		
10 mRad/calendar year due to gamma radiation	%					7.79E-03	
20 mRad/calendar year due to beta radiation	%					4.82E-03	
<b>B. Iodines</b>							
1. Total iodine-131	Ci	3.26E-04	8.55E-04	3.82E-04	1.86E-04	1.75E-03	+/- 16
2. Average release rate for period	$\mu$ Ci/sec	4.19E-05	1.09E-04	4.81E-05	2.34E-05	5.55E-05	
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)	%					8.87E-04	
b. Dose due to radioiodine and particulates in gaseous effluent -							
Any body organ per calendar quarter - 7.5 mrem	%	2.57E-02	1.20E-01	3.39E-02	1.84E-02		
Any body organ per calendar year - 15 mrem	%					8.87E-02	
<b>C. Particulates</b>							
1. Particulates with half-lives > 8 days	Ci	2.00E-04	3.24E-04	3.86E-04	8.16E-04	1.73E-03	+/- 10
2. Average release rate for period	$\mu$ Ci/sec	2.58E-05	4.12E-05	4.85E-05	1.03E-04	5.46E-05	
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)	%					8.87E-04	
b. Dose due to radioiodine and particulates in gaseous effluent -							
Any body organ per calendar quarter - 7.5 mrem	%	2.57E-02	1.20E-01	3.39E-02	1.84E-02		
Any body organ per calendar year - 15 mrem	%					8.87E-02	
4. Gross alpha radioactivity	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	
<b>D. Tritium</b>							
1. Total Release	Ci	1.83E+01	6.92E+00	1.23E+01	8.29E+00	4.58E+01	+/- 25
2. Average release rate for period	$\mu$ Ci/sec	2.35E+00	8.80E-01	1.55E+00	1.04E+00	1.45E+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)	%					8.87E-04	

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TABLE 1B  
GASEOUS EFFLUENTS - ELEVATED RELEASES

Nuclides Released	Unit	Continuous Mode				Yearly Total
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	
<b>1. Fission gases</b>						
krypton-85	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
krypton-85m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
krypton-87	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
krypton-88	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-133	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-135	Ci	3.62E+00	1.17E+01	4.58E+00	6.03E-01	2.05E+01
xenon-135m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-138	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
<b>Total for period</b>	Ci	3.62E+00	1.17E+01	4.58E+00	6.03E-01	2.05E+01
<b>2. Iodines</b>						
iodine-131	Ci	3.26E-04	8.55E-04	3.82E-04	1.85E-04	1.75E-03
iodine-132	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
iodine-133	Ci	1.50E-03	4.76E-03	1.42E-03	5.11E-04	8.19E-03
iodine-135	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
<b>Total for period</b>	Ci	1.83E-03	5.62E-03	1.80E-03	6.96E-04	9.94E-03
<b>3. Particulates</b>						
strontium-89	Ci	1.19E-04	1.21E-04	2.79E-05	4.41E-04	7.09E-04
strontium-90	Ci	6.00E-07	1.57E-06	< LLD	< LLD	2.17E-06
cesium-134	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-137	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
barium-140	Ci	< LLD	1.07E-04	< LLD	2.98E-04	4.05E-04
gross alpha	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
nickel-63	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
chromium-51	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
manganese-54	Ci	3.78E-05	6.31E-05	2.04E-04	4.10E-05	3.46E-04
cobalt-58	Ci	1.68E-05	3.41E-06	2.50E-05	5.77E-06	5.10E-05
cobalt-60	Ci	2.03E-05	2.79E-05	1.29E-04	3.05E-05	2.08E-04
zinc-65	Ci	5.75E-06	< LLD	< LLD	< LLD	5.75E-06
<b>Total for period</b>	Ci	2.00E-04	3.24E-04	3.86E-04	8.16E-04	1.73E-03

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TABLE 1C  
GASEOUS EFFLUENTS - GROUND-LEVEL RELEASES

Nuclides Released	Unit	Continuous Mode				Yearly Total
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	
<b>1. Fission gases</b>						
krypton-85	Ci	< LLD	< LLD	< LLD	< LLD	<LLD
krypton-85m	Ci	< LLD	< LLD	< LLD	< LLD	<LLD
krypton-87	Ci	< LLD	2.34E-02	< LLD	< LLD	2.34E-02
krypton-88	Ci	< LLD	< LLD	< LLD	< LLD	<LLD
xenon-133	Ci	< LLD	< LLD	< LLD	< LLD	<LLD
xenon-135	Ci	2.16E-06	8.37E-02	< LLD	< LLD	8.37E-02
xenon-135m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
xenon-138	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
Others						
None						
<b>Total for period</b>	Ci	2.16E-06	1.07E-01	< LLD	< LLD	1.07E-01
<b>2. Iodines</b>						
iodine-131	Ci	8.07E-08	<LLD	1.52E-07	6.44E-07	8.77E-07
iodine-133	Ci	1.68E-05	<LLD	4.25E-06	5.82E-06	2.69E-05
iodine-135	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
<b>Total for period</b>	Ci	1.69E-05	<LLD	4.40E-06	6.46E-06	2.77E-05
<b>3. Particulates</b>						
strontium-89	Ci	<LLD	<LLD	< LLD	< LLD	<LLD
strontium-90	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cobalt-58	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cesium-137	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
barium-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
nickel-63	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
gross alpha	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
manganese-54	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
cobalt-60	Ci	< LLD	< LLD	< LLD	< LLD	< LLD
<b>Total for period</b>	Ci	<LLD	<LLD	< LLD	< LLD	<LLD

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TABLE 2A  
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Total	Est. Total Error, %
<b>A. Fission &amp; activation products</b>							
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	$\mu$ Ci/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>B. Tritium</b>							
1. Total release	Ci	No Releases	No Releases	No Releases	No Releases	No Releases	N/A
2. Average diluted concentration during period	$\mu$ Ci/mL	-	-	-	-	-	
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	%					-	
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>C. Dissolved and entrained gases</b>							
1. Total release	Ci	No Releases	No Releases	No Releases	No Releases	No Releases	N/A
2. Average diluted concentration during period	$\mu$ Ci/mL	-	-	-	-	-	
3. Percent of Technical Specification							
a. Shall not exceed 2.0 E-4 $\mu$ Ci/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	%					-	
<b>D. Gross alpha radioactivity</b>							
1. Total release	Ci	No Releases	No Releases	No Releases	No Releases	No Releases	N/A
<b>E. Volume of waste released (prior to dilution)</b>							
	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
<b>F. Volume of dilution water used during period</b>							
	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007

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
tritium (H-3)	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
nickel-63	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
<b>Total for period</b>	<b>Ci</b>	<b>No Releases</b>	<b>No Releases</b>	<b>No Releases</b>	<b>No Releases</b>	<b>No Releases</b>
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
<b>Total for period</b>	<b>Ci</b>	<b>No Releases</b>	<b>No Releases</b>	<b>No Releases</b>	<b>No Releases</b>	<b>No Releases</b>

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
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 Waste shipped in Type A containers.	m <sup>3</sup>	5.48E+00	+/- 25
	Ci	5.01E+01	
b. Dry compressible waste, contaminated equipment, etc. Waste shipped in LSA containers.	m <sup>3</sup>	2.54E+02	+/- 25
	Ci	9.51E-01	
c. Irradiated components, control rods, etc.	m <sup>3</sup>	2.53E-01	+/- 25
	Ci	5.07E+04	
d. Other waste Waste shipped in LSA containers.	m <sup>3</sup>	7.85E+01	+/- 25
	Ci	1.11E+00	

Note: No solidification agent was used during the reporting period

2. Estimate of major nuclear composition (by type of waste)	Percentage (%)	Activity (Ci)
a. Iron-55 _____	5.85E+01	2.93E+01
Cobalt-60 _____	1.83E+01	9.17E+00
Manganese-54 _____	1.53E+01	7.66E+00
b. Cesium-137 _____	4.82E+01	4.58E-01
Cobalt-60 _____	2.81E+01	2.67E-01
Iron-55 _____	1.14E+01	1.08E-01
c. Iron-55 _____	4.78E+01	2.42E+04
Cobalt-60 _____	4.00E+01	2.03E+04
Tantalum-182 _____	4.15E+00	2.11E+03
d. Tritium _____	8.05E+01	8.91E-01
Cesium-137 _____	1.03E+01	1.14E-01
Cobalt-60 _____	5.50E+00	6.10E-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>
4	Motor Vehicle	Barnwell Waste Management Facility
11	Motor Vehicle	Duratek
2	Motor Vehicle	Duratek Radwaste Processing, Inc.

**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 - 2007

TABLE 3B  
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

**Waste Stream - Summary Of All Wastes**

**Period of Performance: January 1, 2007 through December 31, 2007**

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft <sup>3</sup> )	(M <sup>3</sup> )		
A	1.18E+04	3.34E+02	2.24E+00	+/- 25
B	0.0	0.0	0.00E+00	
C	5.22E+01	1.48E+00	5.07E+04	+/- 25
All	1.19E+04	3.36E+02	5.07E+04	+/- 25





OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007

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

Waste Stream - Spent Resins, Filters, and Filter Sludge

Period of Performance: January 1, 2007 through December 31, 2007

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft <sup>3</sup> )	(M <sup>3</sup> )		
A	1.50E+02	4.25E+00	1.79E-01	+/- 25
B	0.00E+00	0.00E+00	0.00E+00	
C	4.33E+01	1.23E+00	4.99E+01	+/- 25
All	1.93E+02	5.48E+00	5.01E+01	+/- 25

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 TABLE 3B (cont.)  
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

**Estimate of Major Nuclide Composition - Spent Resins, Filter Sludge and Evaporator Bottoms**  
**Period of Performance: January 1, 2007 through December 31, 2007**

**Waste Class: A**

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Fe-55	1.20E-01	6.71E+01
Co-60	2.71E-02	1.52E+01
Mn-54	1.99E-02	1.11E+01
Cs-137	9.35E-03	5.23E+00
H-3	1.28E-03	7.16E-01
Ni-63	5.61E-04	3.14E-01
Zn-65	5.24E-04	2.93E-01
Ce-144	4.68E-05	2.62E-02
Sr-90	3.84E-05	2.15E-02
Cs-134	2.85E-05	1.59E-02
Pu-241	1.71E-05	9.56E-03
Am-241	1.08E-06	6.04E-04
Cm-243	8.73E-07	4.88E-04
Other	1.62E-06	9.05E-04
<b>Total</b>	<b>1.79E-1</b>	<b>1.00E2</b>

**Waste Class: B**

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

**Waste Class: C**

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Fe-55	2.92E+01	5.85E+01
Co-60	9.14E+00	1.83E+01
Mn-54	7.64E+00	1.53E+01
Cs-137	1.52E+00	3.05E+00
Ni-63	1.51E+00	3.03E+00
Fe-59	4.48E-01	8.98E-01
Co-58	1.48E-01	2.97E-01
Pu-241	1.35E-01	2.71E-01
Ce-144	1.16E-01	2.33E-01
Am-241	1.20E-02	2.41E-02
Pu-238	4.15E-03	8.32E-03
Cm-243	3.33E-03	6.68E-03
Pu-239	2.70E-03	5.41E-03
Other	9.57E-9	5.29E-03
<b>Total</b>	<b>4.99E+01</b>	<b>1.00E+02</b>

**Waste Class: All**

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Fe-55	2.93E+01	5.85E+01
Co-60	9.23E+00	1.84E+01
Mn-54	7.66E+00	1.53E+01
Cs-137	1.53E+00	3.05E+00
Ni-63	1.51E+00	3.01E+00
Fe-59	4.48E-01	8.94E-01
Co-58	1.48E-01	2.95E-01
Pu-241	1.35E-01	2.69E-01
Ce-144	1.17E-01	2.34E-01
Am-241	1.20E-02	2.40E-02
Pu-238	4.15E-03	8.28E-03
Cm-243	3.33E-03	6.65E-03
Pu-239	2.70E-03	5.39E-03
Others	1.87E-03	3.73E-03
<b>Total</b>	<b>5.01E+01</b>	<b>1.00E+02</b>

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 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, 2007 through December 31, 2007**

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft <sup>3</sup> )	(M <sup>3</sup> )		
A	8.96E+03	2.54E+02	9.51E-01	+/- 25
B	0.0	0.0	0.00E+00	
C	0.0	0.0	0.00E+00	
All	8.96E+03	2.54E+02	9.51E-01	+/- 25

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 TABLE 3B (cont.)  
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

**Estimate of Major Nuclide Composition - Dry Activated Waste Shipped to an Offsite Processor**  
**Period of Performance: January 1, 2007 through December 31, 2007**

**Waste Class: A**

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Cs-137	4.58E-01	4.82E+01
Co-60	2.67E-01	2.81E+01
Fe-55	1.08E-01	1.14E+01
Mn-54	3.66E-02	3.85E+00
Zn-65	2.95E-02	3.10E+00
C-14	2.05E-02	2.16E+00
Cs-134	1.61E-02	1.69E+00
Ni-63	7.54E-03	7.94E-01
H-3	2.07E-03	2.18E-01
Ce-144	1.91E-03	2.01E-01
Sr-90	1.33E-03	1.40E-01
Po-210	9.95E-04	1.05E-01
Sr-89	3.63E-04	3.82E-02
Other	1.97E-04	2.08E-02
<b>Total</b>	<b>9.50E-01</b>	<b>1.00E+02</b>

**Waste Class: B**

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

**Waste Class: C**

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

**Waste Class: All**

Nuclide	Activity (Curies)	Percent Abundance (Percent)
Cs-137	4.58E-01	4.82E+01
Co-60	2.67E-01	2.81E+01
Fe-55	1.08E-01	1.14E+01
Mn-54	3.66E-02	3.85E+00
Zn-65	2.95E-02	3.10E+00
C-14	2.05E-02	2.16E+00
Cs-134	1.61E-02	1.69E+00
Ni-63	7.54E-03	7.94E-01
H-3	2.07E-03	2.18E-01
Ce-144	1.91E-03	2.01E-01
Sr-90	1.33E-03	1.40E-01
Po-210	9.95E-04	1.05E-01
Sr-89	3.63E-04	3.82E-02
Other	1.97E-04	2.08E-02
<b>Total</b>	<b>9.50E-01</b>	<b>1.00E+02</b>

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 TABLE 3B (CONT.)  
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

**Waste Stream - Irradiated Fuel**

**Period of Performance: January 1, 2007 through December 31, 2007**

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft <sup>3</sup> )	(M <sup>3</sup> )		
A	0.0	0.0	0.0	
B	0.0	0.0	0.0	
C	0.0	0.0	0.0	
All	0.0	0.0	0.0	

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 TABLE 3B (cont.)  
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

**Estimate of Major Nuclide Composition - Irradiated Fuel**

**Period of Performance: January 1, 2007 through December 31, 2007**

**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)
---------	----------------------	-----------------------------------

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)
---------	----------------------	-----------------------------------

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

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 TABLE 3B (CONT.)  
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Waste Stream - Other Waste

Period of Performance: January 1, 2007 through December 31, 2007

Waste Class	Volume Shipped		Activity Shipped (Curies)	Percent Error (Percent)
	(Ft <sup>3</sup> )	(M <sup>3</sup> )		
A	2.70E+03	7.65E+01	1.11E+00	+/- 25
B	0.0	0.0	0.00E+00	
C	0.0	0.0	0.00E+00	
All	2.70E+03	7.65E+01	1.11E+00	+/- 25



OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 TABLE 3B (cont.)  
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

Estimate of Major Nuclide Composition - Other Waste

Period of Performance: January 1, 2007 through December 31, 2007

**Waste Class: A**

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

H-3	8.91E-01	8.05E+01
Cs-137	1.14E-01	1.03E+01
Co-60	6.09E-02	5.51E+00
Fe-55	1.82E-02	1.65E+00
Mn-54	5.97E-03	5.40E-01
C-14	5.06E-03	4.57E-01
Zn-65	4.86E-03	4.39E-01
Cs-134	3.93E-03	3.55E-01
Ni-63	1.47E-03	1.33E-01
Ce-144	4.14E-04	3.74E-02
Sr-90	3.17E-04	2.87E-02
Sr-89	1.72E-05	1.55E-03
Ag-110m	3.31E-06	2.99E-04
Other	5.94E-06	5.37E-04
Total	1.11E+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)
---------	----------------------	-----------------------------------

H-3	8.91E-01	8.05E+01
Cs-137	1.14E-01	1.03E+01
Co-60	6.09E-02	5.51E+00
Fe-55	1.82E-02	1.65E+00
Mn-54	5.97E-03	5.40E-01
C-14	5.06E-03	4.57E-01
Zn-65	4.86E-03	4.39E-01
Cs-134	3.93E-03	3.55E-01
Ni-63	1.47E-03	1.33E-01
Ce-144	4.14E-04	3.74E-02
Sr-90	3.17E-04	2.87E-02
Sr-89	1.72E-05	1.55E-03
Ag-110m	3.31E-06	2.99E-04
Other	5.94E-06	5.37E-04
Total	1.11E+00	1.00E+02

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class A  
 ELEVATION: 33 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	2	20	121	17	0	0	160
NNE	SSW	2	15	49	12	0	0	78
NE	SW	3	47	49	6	0	0	105
ENE	WSW	1	56	54	11	0	0	122
E	W	0	54	77	17	0	0	148
ESE	WNW	3	51	119	68	0	0	241
SE	NW	4	71	154	34	0	0	263
SSE	NNW	2	47	41	2	0	0	92
S	N	2	19	21	0	0	0	42
SSW	NNE	2	22	9	0	0	0	33
SW	NE	1	36	54	3	0	0	94
WSW	ENE	4	40	62	0	0	0	106
W	E	1	61	63	4	0	0	129
WNW	ESE	0	70	36	0	0	0	106
NW	SE	3	86	68	0	0	0	157
NNW	SSE	2	32	94	1	0	0	129
TOTAL		32	727	1071	175	0	0	2005

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
TABLE 4A  
HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class B  
ELEVATION: 33 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	3	17	22	0	0	0	42
NNE	SSW	2	7	11	5	0	0	25
NE	SW	0	13	11	0	0	0	24
ENE	WSW	3	11	8	0	0	0	22
E	W	3	13	11	2	0	0	29
ESE	WNW	0	17	22	13	0	0	52
SE	NW	6	21	22	6	0	0	55
SSE	NNW	3	8	13	1	0	0	25
S	N	2	7	1	0	0	0	10
SSW	NNE	7	10	1	0	0	0	18
SW	NE	2	17	8	0	0	0	27
WSW	ENE	2	15	10	0	0	0	27
W	E	1	12	12	2	0	0	27
WNW	ESE	2	8	4	0	0	0	14
NW	SE	1	7	1	0	0	0	9
NNW	SSE	0	17	2	0	0	0	19
TOTAL		37	200	159	29	0	0	425

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
TABLE 4A  
HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class C  
ELEVATION: 33 feet

SECTOR TO	WINDS FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	0	7	5	1	0	0	13
NNE	SSW	1	6	6	1	0	0	14
NE	SW	0	6	2	0	0	0	8
ENE	WSW	0	5	6	0	0	0	11
E	W	2	5	6	2	0	0	15
ESE	WNW	1	8	6	5	0	0	20
SE	NW	2	7	9	5	0	0	23
SSE	NNW	2	8	9	1	0	0	20
S	N	4	5	3	0	0	0	12
SSW	NNE	2	3	2	0	0	0	7
SW	NE	0	1	3	0	0	0	4
WSW	ENE	2	4	3	0	0	0	9
W	E	1	7	5	0	0	0	13
WNW	ESE	4	3	2	0	0	0	9
NW	SE	0	5	1	0	0	0	6
NNW	SSE	0	7	0	0	0	0	7
TOTAL		21	87	68	15	0	0	191

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class D  
 ELEVATION: 33 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	12	54	33	2	3	0	104
NNE	SSW	6	42	55	14	0	0	117
NE	SW	10	31	27	0	0	0	68
ENE	WSW	10	37	20	0	0	0	67
E	W	15	50	27	13	0	0	105
ESE	WNW	22	61	69	19	0	0	171
SE	NW	24	44	69	14	0	0	151
SSE	NNW	17	67	27	0	0	0	111
S	N	33	43	7	0	0	0	83
SSW	NNE	16	31	20	1	0	0	68
SW	NE	19	69	46	4	0	0	138
WSW	ENE	17	60	58	7	1	0	143
W	E	10	33	39	9	0	0	91
WNW	ESE	5	21	18	2	0	0	46
NW	SE	10	44	10	1	0	0	65
NNW	SSE	5	61	11	2	0	0	79
TOTAL		231	748	536	88	4	0	1607

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
TABLE 4A  
HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class E  
ELEVATION: 33 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	33	86	23	8	2	0	152
NNE	SSW	51	195	88	13	0	0	347
NE	SW	51	210	52	0	0	0	313
ENE	WSW	67	172	27	0	0	0	266
E	W	63	173	32	12	0	0	280
ESE	WNW	52	105	75	10	0	0	242
SE	NW	61	89	32	1	0	0	183
SSE	NNW	41	74	9	0	0	0	124
S	N	23	18	0	0	0	0	41
SSW	NNE	15	11	4	0	0	0	30
SW	NE	20	36	8	13	0	0	77
WSW	ENE	13	39	29	5	0	0	86
W	E	13	27	32	2	0	0	74
WNW	ESE	12	15	16	3	0	0	46
NW	SE	12	28	8	3	0	0	51
NNW	SSE	32	25	12	10	1	0	80
TOTAL		559	1303	447	80	3	0	2392

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
TABLE 4A  
HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class F  
ELEVATION: 33 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	20	11	0	0	0	0	31
NNE	SSW	34	17	0	0	0	0	51
NE	SW	50	32	0	0	0	0	82
ENE	WSW	60	92	0	0	0	0	152
E	W	47	87	0	0	0	0	134
ESE	WNW	42	51	0	0	0	0	93
SE	NW	58	34	0	0	0	0	92
SSE	NNW	28	36	0	0	0	0	64
S	N	11	8	0	0	0	0	19
SSW	NNE	6	2	0	0	0	0	8
SW	NE	10	2	0	0	0	0	12
WSW	ENE	5	3	0	0	0	0	8
W	E	5	2	0	0	0	0	7
WNW	ESE	8	0	0	0	0	0	8
NW	SE	5	1	2	0	0	0	8
NNW	SSE	8	1	0	0	0	0	9
TOTAL		397	379	2	0	0	0	778

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class G  
 ELEVATION: 33 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	11	1	0	0	0	0	12
NNE	SSW	25	6	0	0	0	0	31
NE	SW	44	10	0	0	0	0	54
ENE	WSW	199	88	0	0	0	0	287
E	W	331	65	0	0	0	0	396
ESE	WNW	172	18	0	0	0	0	190
SE	NW	98	47	0	0	0	0	145
SSE	NNW	55	33	0	0	0	0	88
S	N	16	2	0	0	0	0	18
SSW	NNE	6	0	0	0	0	0	6
SW	NE	1	1	0	0	0	0	2
WSW	ENE	1	2	0	0	0	0	3
W	E	2	0	0	0	0	0	2
WNW	ESE	2	0	0	0	0	0	2
NW	SE	5	0	0	0	0	0	5
NNW	SSE	12	1	0	0	0	0	13
TOTAL		980	274	0	0	0	0	1254



OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD - January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class All  
 ELEVATION: 33 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	81	196	204	28	5	0	514
NNE	SSW	121	288	209	45	0	0	663
NE	SW	158	349	141	6	0	0	654
ENE	WSW	340	461	115	11	0	0	927
E	W	461	447	153	46	0	0	1107
ESE	WNW	292	311	291	115	0	0	1009
SE	NW	253	313	286	60	0	0	912
SSE	NNW	148	273	99	4	0	0	524
S	N	91	102	32	0	0	0	225
SSW	NNE	54	79	36	1	0	0	170
SW	NE	53	162	119	20	0	0	354
WSW	ENE	44	163	162	12	1	0	382
W	E	33	142	151	17	0	0	343
WNW	ESE	33	117	76	5	0	0	231
NW	SE	36	171	90	4	0	0	301
NNW	SSE	59	144	119	13	1	0	336
TOTAL		2257	3718	2283	387	7	0	8652

Hours of Missing/Invalid Data: 107

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
TABLE 4A  
HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class A  
ELEVATION: 380 feet

SECTOR TO	WINDS FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	0	0	4	10	7	0	21
NNE	SSW	0	1	3	4	1	0	9
NE	SW	0	0	2	5	2	1	10
ENE	WSW	0	0	10	12	2	1	25
E	W	0	0	4	9	7	2	22
ESE	WNW	0	0	4	16	18	20	58
SE	NW	0	0	3	14	15	15	47
SSE	NNW	0	0	1	4	4	0	9
S	N	0	0	0	1	2	0	3
SSW	NNE	0	0	1	5	0	0	6
SW	NE	0	0	2	18	2	0	22
WSW	ENE	0	1	5	17	5	0	28
W	E	0	0	16	9	1	0	26
WNW	ESE	0	1	13	2	0	0	16
NW	SE	0	0	13	2	0	0	15
NNW	SSE	0	0	6	17	1	0	24
TOTAL		0	3	87	145	67	39	341

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class B  
 ELEVATION: 380 feet

SECTOR TO	WINDS FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	1	1	6	20	5	0	33
NNE	SSW	0	0	5	7	5	3	20
NE	SW	0	1	7	6	3	3	20
ENE	WSW	0	1	13	15	2	5	36
E	W	0	3	8	19	7	3	40
ESE	WNW	0	0	12	26	18	32	88
SE	NW	0	1	7	32	22	7	69
SSE	NNW	0	0	6	14	4	0	24
S	N	0	0	4	5	0	0	9
SSW	NNE	0	1	3	6	0	0	10
SW	NE	0	0	12	12	2	1	27
WSW	ENE	0	1	21	13	2	0	37
W	E	0	1	18	6	0	0	25
WNW	ESE	0	2	17	5	0	0	24
NW	SE	0	2	28	5	0	0	35
NNW	SSE	0	2	10	17	0	0	29
TOTAL		1	16	177	208	70	54	526

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class C  
 ELEVATION: 380 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	0	5	13	26	3	0	47
NNE	SSW	0	2	5	16	13	3	39
NE	SW	0	5	15	10	5	0	35
ENE	WSW	0	6	16	13	6	1	42
E	W	0	4	14	19	5	7	49
ESE	WNW	1	3	15	15	16	23	73
SE	NW	0	4	29	19	16	18	86
SSE	NNW	1	6	11	9	8	0	35
S	N	0	7	9	1	1	0	18
SSW	NNE	0	2	6	5	1	0	14
SW	NE	0	3	12	8	0	3	26
WSW	ENE	0	3	22	13	1	0	39
W	E	1	6	22	4	0	0	33
WNW	ESE	0	8	22	3	0	0	33
NW	SE	0	7	20	4	0	0	31
NNW	SSE	0	4	27	10	0	0	41
TOTAL		3	75	258	175	75	55	641

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
TABLE 4A  
HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class D  
ELEVATION: 380 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	4	31	66	80	8	3	192
NNE	SSW	1	14	45	97	36	17	210
NE	SW	2	19	30	53	19	3	126
ENE	WSW	6	15	26	44	29	3	123
E	W	3	22	42	60	36	26	189
ESE	WNW	4	23	40	84	94	114	359
SE	NW	3	28	33	74	90	77	305
SSE	NNW	4	14	34	44	35	8	139
S	N	3	21	24	36	5	3	92
SSW	NNE	2	27	44	31	13	4	121
SW	NE	3	35	66	71	37	30	242
WSW	ENE	0	14	41	49	42	33	179
W	E	4	21	49	37	53	45	209
WNW	ESE	4	14	49	20	11	5	103
NW	SE	1	24	51	13	2	0	91
NNW	SSE	1	14	66	29	1	0	111
TOTAL		45	336	706	822	511	371	2791

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class E  
 ELEVATION: 380 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	2	14	37	50	14	14	131
NNE	SSW	1	24	57	172	89	30	373
NE	SW	5	30	37	159	134	19	384
ENE	WSW	3	18	27	52	75	15	190
E	W	5	15	38	93	109	24	284
ESE	WNW	7	16	26	75	106	29	259
SE	NW	3	12	29	55	57	12	168
SSE	NNW	6	12	15	64	37	3	137
S	N	1	20	32	33	9	0	95
SSW	NNE	5	18	27	13	2	0	65
SW	NE	3	16	22	21	2	8	72
WSW	ENE	2	5	20	35	20	3	85
W	E	3	16	13	16	10	1	59
WNW	ESE	5	10	20	13	8	4	60
NW	SE	4	18	22	14	4	12	74
NNW	SSE	3	12	23	13	5	17	73
TOTAL		58	256	445	878	681	191	2509

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class F  
 ELEVATION: 380 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	1	1	12	16	1	0	31
NNE	SSW	2	3	16	23	7	1	52
NE	SW	0	4	18	48	68	15	153
ENE	WSW	1	2	9	39	39	19	109
E	W	2	6	16	43	43	15	125
ESE	WNW	0	1	12	59	70	17	159
SE	NW	0	3	12	28	55	9	107
SSE	NNW	0	4	17	25	52	11	109
S	N	2	4	16	31	28	2	83
SSW	NNE	1	3	13	13	3	0	33
SW	NE	1	2	18	12	1	0	34
WSW	ENE	2	2	5	4	1	0	14
W	E	1	9	2	2	0	0	14
WNW	ESE	2	10	2	1	0	0	15
NW	SE	0	3	8	3	0	0	14
NNW	SSE	3	3	10	3	4	1	24
TOTAL		18	60	186	350	372	90	1076

OYSTER CREEK GENERATING STATION  
 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – 2007  
 TABLE 4A  
 HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD – January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class G  
 ELEVATION: 380 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	1	5	12	14	1	0	33
NNE	SSW	5	5	10	15	1	0	36
NE	SW	2	11	15	26	12	0	66
ENE	WSW	4	4	18	22	19	3	70
E	W	1	5	16	27	22	9	80
ESE	WNW	2	11	12	19	41	10	95
SE	NW	0	19	9	25	19	1	73
SSE	NNW	3	7	17	21	19	3	70
S	N	3	11	27	25	15	1	82
SSW	NNE	3	8	16	14	8	0	49
SW	NE	2	14	15	18	0	0	49
WSW	ENE	1	8	5	6	0	0	20
W	E	0	4	4	2	0	0	10
WNW	ESE	0	7	7	0	0	0	14
NW	SE	3	5	19	1	0	0	28
NNW	SSE	2	2	6	4	0	0	14
TOTAL		32	126	208	239	157	27	789



OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007  
TABLE 4A  
HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD - January 01, 2007 through December 31, 2007

STABILITY CLASS: Pasquill Class All  
ELEVATION: 380 feet

SECTOR	WINDS TO FROM	WIND SPEED						TOTAL
		1-3	4-7	8-12	13-18	19-24	>24	
N	S	9	57	150	216	39	17	488
NNE	SSW	9	49	141	334	152	54	739
NE	SW	9	70	124	307	243	41	794
ENE	WSW	14	46	119	197	172	47	595
E	W	11	55	138	270	229	86	789
ESE	WNW	14	54	121	294	363	245	1091
SE	NW	6	67	122	247	274	139	855
SSE	NNW	14	43	101	181	159	25	523
S	N	9	63	112	132	60	6	382
SSW	NNE	11	59	110	87	27	4	298
SW	NE	9	70	147	160	44	42	472
WSW	ENE	5	34	119	137	71	36	402
W	E	9	57	124	76	64	46	376
WNW	ESE	11	52	130	44	19	9	265
NW	SE	8	59	161	42	6	12	288
NNW	SSE	9	37	148	93	11	18	316
TOTAL		157	872	2067	2817	1933	827	8673
Hours of Missing/Invalid Data:		86						

OYSTER CREEK GENERATING STATION  
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2007

TABLE 4B  
CLASSIFICATION OF ATMOSPHERIC STABILITY

Stability Classification	Pasquill Categories	Sigma-Theta <sup>a</sup> (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

<sup>a</sup> 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.