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U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

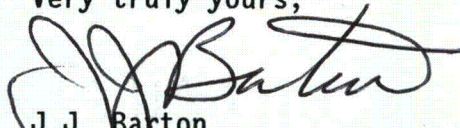
Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Semiannual Radiological Effluent Release Report

Attached is a copy of the Oyster Creek Effluent Release Report for the period covering January, 1991 through June, 1991. This submittal is made in accordance with 10 CFR 50.36a(a)(2) and our Operating License and Technical Specifications.

If you have any questions, please do not hesitate to contact Michael Heller, Oyster Creek Licensing Engineer at 609-971-4680.

Very truly yours,


J.J. Barton
Vice President and Director
Oyster Creek

JJB/MH/jc
Attachment

cc: Chief
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Oyster Creek

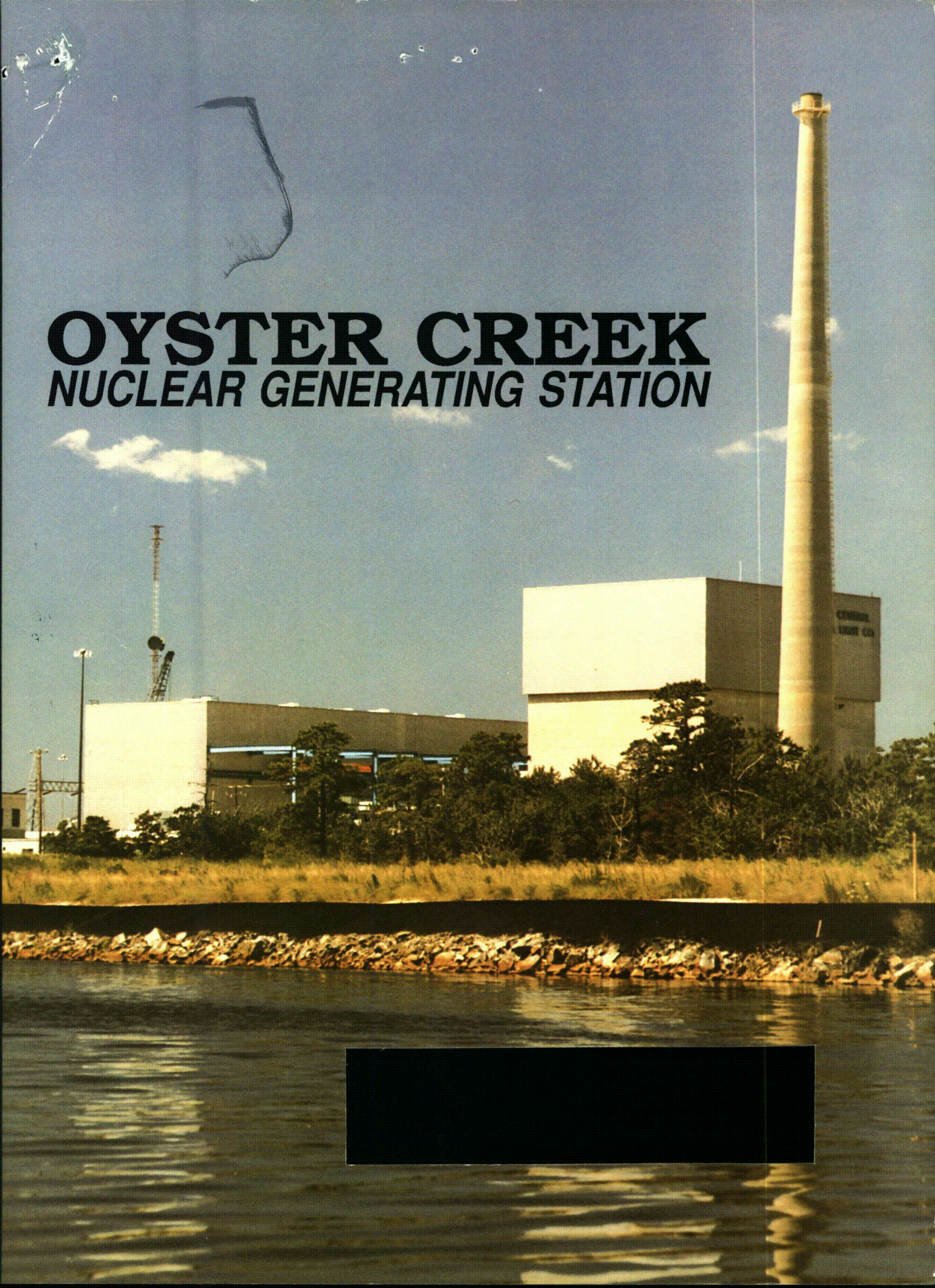
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OYSTER CREEK NUCLEAR GENERATING STATION



OYSTER CREEK NUCLEAR GENERATING STATION **Forked River, New Jersey**

The 650 MW plant is a single-unit, five-loop General Electric Boiling Water Reactor (BWR). The site, about 800 acres, is in Lacey and Ocean Townships of Ocean County. Located approximately nine miles south of Toms River, it is about 50 miles east of Philadelphia, and 60 miles south of Newark.

Construction began in December 1963. The station began commercial operation on December 23, 1969, and at that time was the largest nuclear facility in the United States solely financed by a private company.

The Reactor Building, Turbine Building and Ventilation Stack are the most prominent structures at the site. The Reactor Building stands approximately 150 feet high with 42 feet extending below grade. The Reactor Building serves as a secondary containment and houses the primary containment (drywell), the reactor vessel and its auxiliary systems which comprise the Nuclear Steam Supply System. The drywell, which houses the reactor vessel, is constructed of high-density reinforced concrete with an inner steel liner measuring 120 feet high and 70 feet in diameter.

The reactor vessel is 63 feet high and 18 feet in diameter. The 652-ton reactor contains 560 fuel assemblies, each with 62 fuel rods that are 12 feet long, and 137 control rods. The reactor operates at a nominal pressure of 1,020 pounds per square inch and an average temperature of 540 degrees Fahrenheit.

The Turbine Building houses the turbine-generator, control room, main condensers, power conversion equipment and auxiliary systems. The turbine-generator consists of one high-pressure turbine, three low-pressure turbines, a generator and an exciter. The turbines and generator turn at 1,800 revolutions per minute to generate three-phase, 60-cycle electricity at 24,000 volts. The electricity generated is provided to the grid by two transformers which boost the voltage to 230,000 volts.

Steam is supplied to the high pressure turbine from the reactor. After being used to drive the turbines and generator, the steam is condensed in the main condensers and returned to the reactor vessel in the form of water through the condensate and feedwater pumps.

The main condensers consist of three horizontal, single pass, divided water boxes containing 44,000 tubes having a total length of about 1,875,000 feet. Cooling water is provided from Barnegat Bay, through the South Branch of the Forked River and passes through the condensers and discharges into Oyster Creek for return to Barnegat Bay. The water is pumped by four 1,000-horsepower pumps, each of which moves about 115,000 gallons per minute through the 6-foot-diameter pipes that feed the condensers.

The ventilation stack is 368 feet high with 26 feet extending below grade. The stack provides ventilation for the Reactor Building, Turbine Building and Radwaste Facilities.

Oyster Creek is owned by Jersey Central Power & Light (JCP&L) Company and operated by GPU Nuclear (GPUN) Corporation. JCP&L and GPUN are units of the GPU System.



OYSTER CREEK NUCLEAR GENERATING STATION



prepared by
Radiological Engineering Dept
Oyster Creek

1991-1
SemiAnnual Effluent
Release Report

Executive Summary

The Semiannual Effluent Release Report is submitted to the United States Nuclear Regulatory Commission (NRC) every six months in accordance with the Oyster Creek Nuclear Generating Station (OCNGS) Technical Specifications (Tech Specs). It summarizes the radioactive gaseous and liquid effluents released and solid radioactive wastes shipped from the OCNGS. In addition, meteorological data are presented in joint frequency tables per atmospheric stability class.

For clarity, the report is organized into four sections. Section I itemizes gaseous releases of 68 curies of fission and activation gases, 0.042 curies of non-particulate halogens, 2.27 curies of tritium, and 0.01 curies of particulate radioactivity. There were no liquid releases for the reporting period. Tables 1, 2, 3, and 4 show that quantities of radioactive material released were well within the limits allowed by the OCNGS Tech Specs. Figure 1 shows a decreasing trend in the quantity of batch liquid releases, with the current reporting period showing the absence of liquid releases, compared to those in the past eight six-month reporting periods. Further limits for the release of radioactive effluents at OCNGS are based upon offsite exposure to members of the general public. These limits, outlined on pages 1-2, were compared to dose projections calculated using the methodology in the Offsite Dose Calculation Manual (ODCM). The results for the 1991-1 reporting period are shown in Figure 2. Section I also itemizes 646.37 curies of radioactivity, contained in 205.1 cubic meters of waste, which was shipped offsite in 46 shipments. These shipments are similar to those of nuclear plants of comparable type, age and size. The report summarizes the fact that all effluents released were within federal regulatory requirements of the OCNGS Technical Specifications.

Section II provides a summary of Oyster Creek's meteorological data for the reporting period in tabular form. Section III provides a detailed listing of all changes made to the Offsite Dose Calculation Manual (ODCM) and the Process Control Plan (PCP) during the reporting period. One change was made to the PCP. There were no changes made to the ODCM. Section IV reports any effluent monitoring instrumentation that was inoperative as per Technical Specification 3.15 for the reporting period.

Figure 1

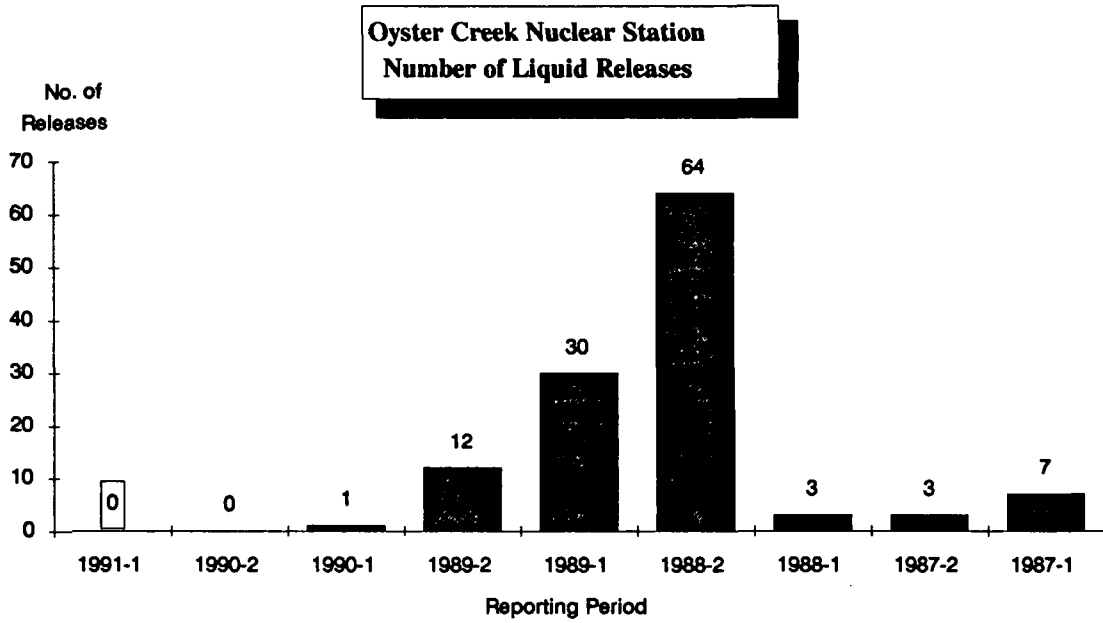


Figure 2

Maximum Offsite Exposure Due to Radionuclides in Radioactive Effluents							
Tech Spec Ref.	3.6.J.1	3.6.J.1	3.6.L.1	3.6.L.1	3.6.K.1	3.6.M.2	3.6.K.1
	Liquid Dose		Air Dose (Noble Gas)		Whole	(Thyroid)	Skin
	WB	Organ	Beta	Gamma	Body	Organ	Skin
	mrem	mrem	mrad	mrad	mrem	mrem	mrem
Jan-June Total	0.00E+00	0.00E+00	7.90E-03	2.81E-03	5.45E-04	1.61E-02	9.46E-04
1991 Total	0.00E+00	0.00E+00	7.90E-03	2.81E-03	5.45E-04	1.61E-02	9.46E-04
Tech Spec Limit	3.00E+00	1.00E+01	2.00E+01	1.00E+01	5.00E+02	1.50E+01	3.00E+03
Fraction of Annual Limit	NA	NA	3.95E-04	2.81E-04	1.09E-06	1.07E-03	3.15E-07

Table of Contents

Executive Summary i
Table of Contents iii
Effluent and Waste Disposal Supplemental Information 1
Section I: Effluent Summaries: Gases, Liquids, and Solid Waste 5
 Effluent Summaries: Gaseous Effluents 6
 Table 1- First Quarter Summary - Elevated 6
 Table 2- Second Quarter Summary - Elevated 7
 Table 3- First Quarter Summary - Ground Level 8
 Table 4- Second Quarter Summary - Ground Level 9
 Solid Waste Summaries 10
 Table 5- Solid Waste Shipped Offsite For Disposal 10
 Estimates of Major Nuclides by Waste Class and Stream 11
 Table 6 - Waste Stream: Resins, Filters, Evaporator Bottoms 11
 Table 7 - Waste Stream: Dry Activated Waste 12
 Table 8 - Waste Stream: Irradiated Components 13
 Table 9 - Waste Stream: Sum of All Four Categories 14
 Table 10 - Solid Waste Disposition Summary 15
Section II: Meteorological Data 16
Section III: Changes to PCP and ODCM 25
Section IV: Effluent Monitoring Instrumentation Inoperability 27
Appendix: Corrections to Previous SemiAnnual Effluent Reports 29

Effluent and Waste Disposal Supplemental Information

FACILITY: Oyster Creek Nuclear Generating Station
LICENSEE: Owner - Jersey Central Power and Light Company
Operator - GPU Nuclear Corporation

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 a $0.21/E$ Ci/sec after the holdup line ,where E is the average gamma energy (Mev per atomic transformation).

Technical Specification 3.6.K.1

The dose equivalent rate outside of the EXCLUSION 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.

Technical Specification 3.6.L.1

The air dose outside of the EXCLUSION 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*

Technical Specification 3.6.N.1

The annual dose to a MEMBER OF THE PUBLIC due to radiation and radioactive material in effluents from the OCNGS outside of the EXCLUSION AREA shall not exceed 75 mrem to his thyroid or 25 mrem to his total body or to any other organ.

b. Iodines and Particulates

Technical Specification 3.6.K.2

The dose equivalent rate outside of the EXCLUSION AREA due to H-3, I-131, I-133, and to radioactive material in particulates 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.

Technical Specification 3.6.M.1

The dose to a MEMBER OF THE PUBLIC from iodine-131, iodine-133, and from radionuclides in particulate form having half-lives of 8 days or more in gaseous effluents, outside of the EXCLUSION 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. Liquid Effluents

Technical Specification 3.6.I.1

The concentration of radioactive material, other than noble gases, in liquid effluent in the discharge canal at the Route 9 bridge shall not exceed the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2.

Technical Specification 3.6.I.2

The concentration of noble gases dissolved or entrained in liquid effluent in the discharge canal at the Route 9 bridge shall not exceed 2×10^{-4} microcuries/milliliter.

Technical Specification 3.6.J.2

The dose to a MEMBER OF THE PUBLIC due to radioactive material in liquid effluents beyond the outside of the EXCLUSION AREA shall not exceed:

*1.5 mrem to the total body during any calendar quarter,
5 mrem to any body organ during any calendar quarter,
3 mrem to the total body during any calendar year, or
10 mrem to any body organ during any calendar year.*

2.) Maximum Permissible Concentrations (MPC)

a. Fission and Activation Gases:

Appendix B, Table II, Column 2 of 10 CFR 20

b. Iodines and Particulates:

Appendix B, Table II, Column 2 of 10 CFR 20

c. Liquid Effluents:

Appendix B, Table II, Column 2 of 10 CFR 20, except for dissolved or entrained noble gases where the limit is 2×10^{-4} uCi/ml

3.) Measurements and Approximation of Total Radioactivity

a. Fission and Activation Gases:

1. Stack

The continuous recording of gross activity 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 monthly grab sample analyzed using gamma spectroscopy.

b. Iodines

1. Stack

Filters are changed twice weekly and analyzed using gamma spectroscopy.

2. AOG Vent

Filters are changed twice weekly and analyzed using gamma spectroscopy.

3. Turbine Building Stack and Feedpump Room Vent

Filters are changed twice weekly and analyzed using gamma spectroscopy.

c. Particulates

1. Stack

Filters are changed twice weekly and analyzed using a low background beta counter and gamma spectroscopy.

2. AOG Vent

Filters are changed twice weekly and analyzed using gamma spectroscopy.

3. Turbine Building Stack and Feedpump Room Vent

Filters are changed twice 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.

Section I: Effluent Summaries: Gases, Liquids, and Solid Waste

Effluent Summaries: Gaseous Effluents

Table 1- First Quarter Summary - Elevated

Gaseous Effluents	Nuclide	Elevated Release Curies Released
<i>Fission and Activation Gases</i>		
	Ar-41	2.46E-02
	Kr-85m	2.75E-02
	Kr-87	2.53E+01
	Kr-88	6.53E-03
	Xe-133	1.60E-01
	Xe-135	3.90E+01
	Total Released	6.45E+01
	Average Release Rate	8.29E+00 uCi/sec
	E-bar	0.8471 MeV
	Percent Tech Spec Limit	0.00%
<i>Iodines</i>		
	I-131	6.07E-03
	I-133	1.40E-02
	I-135	3.85E-04
	Total Released	2.05E-02
	Average Release Rate	2.63E-03 uCi/sec
<i>Particulates</i>		
	Sr-89	9.54E-04
	Sr-90	2.59E-06
	Tc-99m	8.84E-03
	Co-60	1.21E-05
	Gross Alpha	3.96E-06
	Total Released	9.81E-03
	Average Release Rate	1.26E-03 uCi/sec
<i>Tritium</i>		
	H-3	2.06E+00
	Total Released	2.06E+00
	Average Release Rate	2.65E-01 uCi/sec

Table 2- Second Quarter Summary - Elevated

Gaseous Effluents	Nuclide	Elevated Release Curies Released
<i>Fission and Activation Gases</i>		
	Total Released	< LLD
	Average Release Rate	< LLD uCi/sec
	E-bar	NA MeV
	Percent Tech Spec Limit	NA
 <i>Iodines</i>		
	I-131	1.02E-03
	I-133	1.35E-02
	I-135	1.50E-02
	Total Released	2.95E-02
	Average Release Rate	3.76E-03 uCi/sec
 <i>Particulates</i>		
	Sr-89	1.13E-04
	Sr-90	8.40E-06
	Co-60	7.63E-05
	Gross Alpha	5.23E-06
	Total Released	2.03E-04
	Average Release Rate	2.58E-05 uCi/sec
 <i>Tritium</i>		
	H-3	2.36E-01
	Total Released	2.36E-01
	Average Release Rate	3.00E-02 uCi/sec

Table 3- First Quarter Summary - Ground Level

Gaseous Effluents	Nuclide	Ground Level Release Curies Released
<i>Fission and Activation Gases</i>		
	Xe-133	3.96E+00
	Total Released	3.96E+00
	Average Release Rate	5.15E-01 uCi/sec
<i>Iodines</i>		
	I-131	1.98E-04
	I-133	1.55E-05
	Total Released	2.14E-04
	Average Release Rate	2.74E-05 uCi/sec
<i>Particulates</i>		
	Sr-89	1.86E-06
	Sr-90	5.10E-07
	Total Released	2.37E-06
	Average Release Rate	3.05E-07 uCi/sec
<i>Tritium</i>		
	H-3	< LLD
	Total Released	< LLD
	Average Release Rate	< LLD uCi/sec

Table 4- Second Quarter Summary - Ground Level

Gaseous Effluents	Nuclide	Ground Level Release Curies Released
<i>Fission and Activation Gases</i>		< LLD
	Total Released	< LLD
	Average Release Rate	< LLD uCi/sec
 <i>Iodines</i>		
	I-133	4.86E-06
	Total Released	4.86E-06
	Average Release Rate	6.18E-07 uCi/sec
 <i>Particulates</i>		
		< LLD
	Total Released	< LLD
	Average Release Rate	< LLD uCi/sec
 <i>Tritium</i>		
	H-3	< LLD
	Total Released	< LLD
	Average Release Rate	< LLD uCi/sec

Solid Waste Summaries

Table 5- Solid Waste Shipped Offsite For Disposal

Waste Stream: Resins, Filters, Evaporator Bottoms

Waste Class	Cubic Feet	Cubic Meters	Curies Shipped	% Error (Curies)
A	3876.3	109.8	1.24E+02	25%
B	908.5	25.7	4.91E+02	25%
C	0.0	0.0	0.00E+00	25%
ALL	4784.8	135.5	6.15E+02	25%

Waste Stream: Dry Activated Waste

Waste Class	Cubic Feet	Cubic Meters	Curies Shipped	% Error (Curies)
A	180.1	5.1	1.56E+00	25%
B	0.0	0.0	0.00E+00	25%
C	0.0	0.0	0.00E+00	25%
ALL	180.1	5.1	1.56E+00	25%

Waste Stream: Irradiated Components

Waste Class	Cubic Feet	Cubic Meters	Curies Shipped	% Error (Curies)
A	728.4	20.6	2.76E+01	25%
B	0.0	0.0	0.00E+00	25%
C	0.0	0.0	0.00E+00	25%
ALL	728.4	20.6	2.76E+01	25%

Waste Stream: Other Waste

Waste Class	Cubic Feet	Cubic Meters	Curies Shipped	% Error (Curies)
A	0.0	0.0	0.00E+00	25%
B	0.0	0.0	0.00E+00	25%
C	0.0	0.0	0.00E+00	25%
ALL	0	0.0	0.00E+00	25%

Waste Stream: Sum of All Four Categories

Waste Class	Cubic Feet	Cubic Meters	Curies Shipped	% Error (Curies)
A	4784.8	135.5	1.53E+02	25%
B	908.5	25.7	4.91E+02	25%
C	0.0	0.0	0.00E+00	25%
ALL	5693.3	161.2	6.44E+02	25%

Waste Stream: SEG (Dry Activated Waste)

Waste Class	Cubic Feet	Cubic Meters	Curies Shipped	% Error (Curies)
A	1553.7	44.0	2.37E+00	25%

Estimates of Major Nuclides by Waste Class and Stream
Table 6 - Waste Stream: Resins, Filters, Evaporator Bottoms

Waste Class	Nuclide Name	PerCent	
		Abundance	Curies
A	Co-60	41.275%	5.05E+01
	Fe-55	27.217%	3.33E+01
	Cs-137	18.799%	2.30E+01
	Mn-54	5.509%	6.74E+00
	Cs-134	3.359%	4.11E+00
	Co-58	1.528%	1.87E+00
	Cr-51	1.308%	1.60E+00
	Ni-63	0.485%	5.93E-01
	C-14	0.210%	2.57E-01
	Sr-90	0.141%	1.73E-01
	Pu-241	0.127%	1.55E-01
	H-3	0.041%	4.98E-02
	Cm-242	0.001%	9.44E-04
	I-129	0.000%	0.00E+00
	I-131	0.000%	0.00E+00
	Nb-94	0.000%	0.00E+00
	Ni-59	0.000%	0.00E+00
	Tc-99	0.000%	0.00E+00

Waste Class	Nuclide Name	PerCent	
		Abundance	Curies
B	Co-60	37.933%	1.82E+02
	Fe-55	35.849%	1.72E+02
	Cs-137	11.734%	5.63E+01
	Mn-54	5.461%	2.62E+01
	Cs-134	3.522%	1.69E+01
	Co-58	2.855%	1.37E+01
	Cr-51	1.922%	9.22E+00
	Ni-63	0.415%	1.99E+00
	Sr-90	0.151%	7.24E-01
	Pu-241	0.145%	6.98E-01
	H-3	0.010%	4.70E-02
	C-14	0.001%	5.48E-03
	Cm-242	0.001%	4.96E-03
	I-129	0.000%	0.00E+00
	I-131	0.000%	0.00E+00
	Nb-94	0.000%	0.00E+00
	Ni-59	0.000%	0.00E+00
	Tc-99	0.000%	0.00E+00

Waste Class	Nuclide Name	PerCent	
		Abundance	Curies
ALL	Co-60	38.628%	2.33E+02
	Fe-55	34.151%	2.06E+02
	Cs-137	13.130%	7.92E+01
	Mn-54	5.454%	3.29E+01
	Cs-134	3.481%	2.10E+01
	Co-58	2.586%	1.56E+01
	Cr-51	1.790%	1.08E+01
	Ni-63	0.428%	2.58E+00
	Sr-90	0.149%	8.96E-01
	Pu-241	0.141%	8.53E-01
	C-14	0.044%	2.63E-01
	H-3	0.016%	9.68E-02
	Cm-242	0.001%	5.91E-03
	I-129	0.000%	0.00E+00
	I-131	0.000%	0.00E+00
	Nb-94	0.000%	0.00E+00
	Ni-59	0.000%	0.00E+00
	Tc-99	0.000%	0.00E+00

Table 7 - Waste Stream: Dry Activated Waste

Waste Class	Nuclide Name	PerCent Abundance	Curies	Waste Class	Nuclide Name	PerCent Abundance	Curies
A	Fe-55	48.009%	7.48E-01	All	Fe-55	48.009%	7.48E-01
	Co-60	35.558%	5.54E-01		Co-60	35.558%	5.54E-01
	Cs-137	7.574%	1.18E-01		Cs-137	7.574%	1.18E-01
	Mn-54	3.427%	5.34E-02		Mn-54	3.427%	5.34E-02
	Cs-134	2.118%	3.30E-02		Cs-134	2.118%	3.30E-02
	Cr-51	2.028%	3.16E-02		Cr-51	2.028%	3.16E-02
	La-140	1.136%	1.77E-02		La-140	1.136%	1.77E-02
	Sr-90	0.140%	2.18E-03		Sr-90	0.140%	2.18E-03
	H-3	0.009%	1.41E-04		H-3	0.009%	1.41E-04
	C-14	0.001%	1.45E-05		C-14	0.001%	1.45E-05
	Ni-63	0.000%	0.00E+00		Ni-59	0.000%	0.00E+00
	Nb-94	0.000%	0.00E+00		Ni-63	0.000%	0.00E+00
	Tc-99	0.000%	0.00E+00		Tc-99	0.000%	0.00E+00
	I-129	0.000%	0.00E+00		I-129	0.000%	0.00E+00
	Pu-241	0.000%	0.00E+00		Pu-241	0.000%	0.00E+00
	Cm-242	0.000%	0.00E+00		Cm-242	0.000%	0.00E+00

Waste Stream: Dry Activated Waste (SEG)

Waste Class	Nuclide Name	PerCent Abundance	Curies	Waste Class	Nuclide Name	PerCent Abundance	Curies
A	Fe-55	46.956%	1.11E+00	A	Ce-141	0.021%	5.00E-04
	Co-60	34.688%	8.20E-01		Ce-144	0.008%	2.00E-04
	Cs-137	7.192%	1.70E-01		H-3	0.008%	2.00E-04
	Mn-54	3.384%	8.00E-02		Am-241	0.000%	0.00E+00
	Cs-134	2.115%	5.00E-02		C-14	0.000%	0.00E+00
	Cr-51	1.988%	4.70E-02		Cm-242	0.000%	0.00E+00
	La-140	1.100%	2.60E-02		Cm-243/44	0.000%	0.00E+00
	Co-58	0.931%	2.20E-02		I-129	0.000%	0.00E+00
	Ni-63	0.508%	1.20E-02		Nb-94	0.000%	0.00E+00
	Zn-65	0.338%	8.00E-03		Ni-59	0.000%	0.00E+00
	Fe-59	0.296%	7.00E-03		Np-237	0.000%	0.00E+00
	Sr-89	0.212%	5.00E-03		Pu-238	0.000%	0.00E+00
	Pu-241	0.127%	3.00E-03		Pu-239/40	0.000%	0.00E+00
	Sr-90	0.127%	3.00E-03		Tc-99	0.000%	0.00E+00

Table 8 - Waste Stream: Irradiated Components

Waste Class	Nuclide Name	PerCent Abundance	Curies	Waste Class	Nuclide Name	PerCent Abundance	Curies
A	Fe-55	59.629%	1.65E+01	ALL	Fe-55	59.629%	1.65E+01
	Co-60	26.382%	7.30E+00		Co-60	26.382%	7.30E+00
	Cr-51	7.770%	2.15E+00		Cr-51	7.770%	2.15E+00
	Mn-54	2.598%	7.19E-01		Mn-54	2.598%	7.19E-01
	Co-58	2.317%	6.41E-01		Co-58	2.317%	6.41E-01
	Ni-63	1.254%	3.47E-01		Ni-63	1.254%	3.47E-01
	Pu-241	0.032%	8.83E-03		Pu-241	0.032%	8.83E-03
	Cs-137	0.010%	2.74E-03		Cs-137	0.010%	2.74E-03
	Ni-59	0.005%	1.34E-03		Ni-59	0.005%	1.34E-03
	H-3	0.003%	6.95E-04		H-3	0.003%	6.95E-04
	C-14	0.001%	1.70E-04		C-14	0.001%	1.70E-04
	Sr-90	0.000%	6.75E-05		Sr-90	0.000%	6.75E-05
	Cm-242	0.000%	4.10E-05		Cm-242	0.000%	4.10E-05
	Nb-94	0.000%	3.26E-06		Nb-94	0.000%	3.26E-06
	Tc-99	0.000%	1.13E-06		Tc-99	0.000%	1.13E-06
	Cs-134	0.000%	0.00E+00		Cs-134	0.000%	0.00E+00
	I-129	0.000%	0.00E+00		I-129	0.000%	0.00E+00
	I-131	0.000%	0.00E+00		I-131	0.000%	0.00E+00

Table 9 - Waste Stream: Sum of All Four Categories

Waste Class	Nuclide Name	PerCent Abundance	Curies
A	Co-60	38.495%	5.83E+01
	Fe-55	33.344%	5.05E+01
	Cs-137	15.253%	2.31E+01
	Mn-54	4.959%	7.51E+00
	Cs-134	2.740%	4.15E+00
	Cr-51	2.496%	3.78E+00
	Co-58	1.664%	2.52E+00
	Ni-63	0.621%	9.40E-01
	C-14	0.170%	2.58E-01
	Sr-90	0.116%	1.75E-01
	Pu-241	0.108%	1.64E-01
	H-3	0.033%	5.07E-02
	Ni-59	0.001%	1.34E-03
	Cm-242	0.001%	9.85E-04
	Nb-94	0.000%	3.26E-06
	Tc-99	0.000%	1.13E-06
	I-129	0.000%	0.00E+00
	I-131	0.000%	0.00E+00

Waste Class	Nuclide Name	PerCent Abundance	Curies
B	Co-60	37.933%	1.82E+02
	Fe-55	35.849%	1.72E+02
	Cs-137	11.734%	5.63E+01
	Mn-54	5.461%	2.62E+01
	Cs-134	3.522%	1.69E+01
	Co-58	2.855%	1.37E+01
	Cr-51	1.922%	9.22E+00
	Ni-63	0.415%	1.99E+00
	Sr-90	0.151%	7.24E-01
	Pu-241	0.145%	6.98E-01
	H-3	0.010%	4.70E-02
	C-14	0.001%	5.48E-03
	Cm-242	0.001%	4.96E-03
	I-129	0.000%	0.00E+00
	I-131	0.000%	0.00E+00
	Nb-94	0.000%	0.00E+00
	Ni-59	0.000%	0.00E+00
	Tc-99	0.000%	0.00E+00

Waste Class	Nuclide Name	PerCent Abundance	Curies
ALL	Co-60	38.111%	2.41E+02
	Fe-55	35.265%	2.23E+02
	Cs-137	12.556%	7.94E+01
	Mn-54	5.329%	3.37E+01
	Cs-134	3.321%	2.10E+01
	Co-58	2.562%	1.62E+01
	Cr-51	2.056%	1.30E+01
	Ni-63	0.463%	2.93E+00
	Sr-90	0.142%	8.98E-01
	Pu-241	0.136%	8.62E-01
	C-14	0.042%	2.63E-01
	H-3	0.015%	9.76E-02
	Cm-242	0.001%	5.95E-03
	Ni-59	0.000%	1.34E-03
	Nb-94	0.000%	3.26E-06
	Tc-99	0.000%	1.13E-06
	I-129	0.000%	0.00E+00

Table 10 - Solid Waste Disposition Summary

Number of Shipments	Mode of Transportation	Destination
28	Truck	Barnwell, SC
18	Truck	Oak Ridge, TN (SEG)

SEG = Scientific Ecology Group, Inc.

Section II: Meteorological Data

First Quarter, 1991

33-Foot Level

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: A DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	3	3	0	0	0	6
NNE	0	0	3	0	0	0	3
NE	0	4	0	0	0	0	4
ENE	0	1	1	0	0	0	2
E	0	1	1	0	0	0	2
ESE	0	2	1	0	0	0	3
SE	0	1	2	0	0	0	3
SSE	0	0	0	0	0	0	0
S	0	1	0	0	0	0	1
SSW	0	1	4	2	0	0	7
SW	0	0	0	0	0	0	0
WSW	0	0	2	1	0	0	3
W	0	0	6	0	0	0	6
WNW	0	1	8	5	0	0	14
NW	0	7	28	11	0	0	46
NNW	0	3	17	1	0	0	21
TOTAL	0	25	76	20	0	0	121

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: C DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:D

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	3	2	0	0	0	5
NNE	0	2	0	0	0	0	2
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	3	0	0	0	0	3
ESE	0	1	0	0	0	0	1
SE	0	0	1	0	0	0	1
SSE	0	1	1	0	0	0	2
S	0	1	2	0	0	0	3
SSW	0	0	1	0	0	0	1
SW	0	0	0	2	0	0	2
WSW	0	0	2	1	0	0	3
W	0	0	5	1	0	0	6
WNW	0	0	5	3	0	0	8
NW	0	1	4	2	0	0	7
NNW	0	2	4	0	0	0	6
TOTAL	0	15	27	9	0	0	51

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: B DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	1	2	0	0	0	3
NNE	1	0	1	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	1	1	0	0	0	2
E	0	0	2	0	0	0	2
ESE	0	4	2	0	0	0	6
SE	1	3	1	0	0	0	5
SSE	0	0	2	0	0	0	2
S	0	0	2	1	0	0	3
SSW	0	0	1	1	0	0	2
SW	0	2	2	2	0	0	6
WSW	0	0	4	3	0	0	7
W	0	0	4	2	0	0	6
WNW	0	2	6	5	2	0	15
NW	0	2	13	3	0	0	18
NNW	0	0	6	0	0	0	6
TOTAL	2	15	49	17	2	0	85

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: D DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:D

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	5	5	0	0	0	10
NNE	1	7	1	0	0	0	9
NE	1	6	4	0	0	0	11
ENE	0	5	0	1	0	0	6
E	1	4	1	0	0	0	6
ESE	1	3	3	0	0	0	7
SE	0	8	8	0	0	0	16
SSE	0	2	6	1	0	0	9
S	0	7	9	2	0	0	18
SSW	2	2	8	5	0	0	17
SW	2	9	2	3	0	0	16
WSW	0	9	11	3	0	0	23
W	1	5	17	8	0	0	31
WNW	0	14	12	10	0	0	36
NW	3	18	26	4	0	0	51
NNW	1	13	9	1	0	0	24
TOTAL	13	117	122	38	0	0	290

Hours of Missing Data: 3

First Quarter, 1991

33-Foot Level

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: E DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	27	5	0	0	0	37
NNE	5	10	8	0	0	0	23
NE	3	27	39	0	0	0	69
ENE	6	19	27	3	0	0	55
E	5	11	7	10	0	0	33
ESE	3	12	2	2	0	0	19
SE	9	18	11	4	0	0	42
SSE	4	20	10	5	1	0	40
S	3	23	29	9	1	0	65
SSW	4	32	39	4	1	0	80
SW	6	24	15	1	0	0	46
WSW	3	19	9	3	0	0	34
W	2	17	36	2	0	0	57
WNW	7	52	42	12	0	0	113
NW	17	54	40	4	0	0	115
NNW	16	36	11	1	0	0	64
TOTAL	98	401	330	60	3	0	892

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: G DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:D

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	3	2	0	0	0	0	5
NNE	5	0	0	0	0	0	5
NE	0	0	0	0	0	0	0
ENE	2	0	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	1	1	0	0	0	0	2
SE	5	0	0	0	0	0	5
SSE	5	1	0	0	0	0	6
S	11	2	0	0	0	0	13
SSW	11	2	0	0	0	0	13
SW	24	7	0	0	0	0	31
WSW	50	45	0	1	0	0	96
W	59	31	0	0	0	0	90
WNW	28	19	1	1	0	0	49
NW	26	19	0	0	0	0	45
NNW	13	8	0	0	0	0	21
TOTAL	243	137	1	2	0	0	383

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: F DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	6	8	0	0	0	0	14
NNE	5	2	0	0	0	0	7
NE	5	2	1	0	0	0	8
ENE	2	3	2	0	0	0	7
E	3	8	0	0	0	0	11
ESE	4	0	0	0	0	0	4
SE	4	2	1	0	0	0	7
SSE	3	7	1	1	0	0	12
S	3	8	3	0	0	0	14
SSW	5	11	7	2	0	0	25
SW	4	31	10	0	0	0	45
WSW	10	31	0	0	0	0	41
W	8	17	1	1	0	0	27
WNW	12	38	9	0	0	0	59
NW	13	20	0	0	0	0	33
NNW	10	11	0	0	0	0	21
TOTAL	97	199	35	4	0	0	335

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 91010100-91033123
Stability Class: ALL DT/DZ
Elevation: Speed:SPD33A Direction:DIR33A Lapse:D

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	14	49	17	0	0	0	80
NNE	17	21	13	0	0	0	51
NE	9	40	44	0	0	0	93
ENE	10	29	31	4	0	0	74
E	9	27	11	10	0	0	57
ESE	9	23	8	2	0	0	42
SE	19	32	24	4	0	0	79
SSE	12	31	20	7	1	0	71
S	17	42	45	12	1	0	117
SSW	22	48	60	14	1	0	145
SW	36	73	29	8	0	0	146
WSW	63	104	28	12	0	0	207
W	70	70	69	14	0	0	223
WNW	47	126	83	36	2	0	294
NW	59	121	111	24	0	0	315
NNW	40	73	47	3	0	0	163
TOTAL	453	909	640	150	5	0	2157

Hours of Missing Data: 3

Second Quarter, 1991

33-Foot Level

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: A DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	6	4	0	0	0	10
NNE	0	4	3	0	0	0	7
NE	1	3	11	0	0	0	15
ENE	0	13	17	1	0	0	31
E	0	8	9	0	0	0	17
ESE	0	13	9	0	0	0	22
SE	0	9	19	0	0	0	28
SSE	0	2	14	0	0	0	16
S	1	2	22	8	0	0	33
SSW	0	1	3	2	0	0	6
SW	0	3	11	0	0	0	14
WSW	0	13	25	1	0	0	39
W	0	10	14	1	0	0	25
WNW	0	9	20	3	0	0	32
NW	1	13	19	5	0	0	38
NNW	0	8	10	0	0	0	18
TOTAL	3	117	210	21	0	0	351

Hours of Missing Data: 49

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: B DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	3	4	0	0	0	7
NE	0	1	4	0	0	0	5
ENE	0	5	6	1	0	0	12
E	0	2	5	0	0	0	7
ESE	0	2	5	0	0	0	7
SE	0	2	6	1	0	0	9
SSE	0	4	2	0	0	0	6
S	0	0	5	5	0	0	10
SSW	0	0	2	2	0	0	4
SW	0	2	4	0	0	0	6
WSW	0	2	10	0	0	0	12
W	0	1	9	1	0	0	11
WNW	1	1	6	3	0	0	11
NW	0	2	4	2	0	0	8
NNW	0	2	3	0	0	0	5
TOTAL	1	29	75	15	0	0	120

Hours of Missing Data: 49

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: C DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT1

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	1	0	0	0	0	1
NE	0	2	2	0	0	0	4
ENE	0	4	6	0	0	0	10
E	0	1	0	0	0	0	1
ESE	0	1	1	0	0	0	2
SE	0	0	1	0	0	0	1
SSE	0	0	2	1	0	0	3
S	0	2	2	5	0	0	9
SSW	1	0	1	0	0	0	2
SW	0	0	1	1	0	0	2
WSW	0	1	2	0	0	0	3
W	0	5	1	0	0	0	6
WNW	0	1	5	1	0	0	7
NW	1	0	6	0	0	0	7
NNW	0	2	2	0	0	0	4
TOTAL	2	20	32	8	0	0	62

Hours of Missing Data: 49

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: D DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT1

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	3	3	3	0	0	0	9
NNE	4	8	2	0	0	0	14
NE	5	24	20	0	0	0	49
ENE	3	22	25	0	0	0	50
E	2	9	4	0	0	0	15
ESE	0	11	3	0	0	0	14
SE	0	4	5	0	0	0	9
SSE	1	5	6	0	0	0	12
S	1	10	15	7	0	0	33
SSW	3	5	9	2	0	0	19
SW	0	6	4	1	0	0	11
WSW	2	14	8	3	0	0	27
W	0	14	14	2	0	0	30
WNW	2	4	15	0	0	0	21
NW	1	8	12	0	0	0	21
NNW	0	6	4	0	0	0	10
TOTAL	27	153	149	15	0	0	344

Hours of Missing Data: 49

Second Quarter, 1991

33-Foot Level

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: E DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	4	5	1	0	0	15
NNE	3	5	9	0	0	0	17
NE	6	23	46	1	0	0	76
ENE	6	31	27	0	0	0	64
E	7	28	13	0	0	0	48
ESE	4	11	3	0	0	0	18
SE	2	8	0	0	0	0	10
SSE	2	13	9	1	0	0	25
S	5	11	9	7	0	0	32
SSW	7	27	35	3	0	0	72
SW	13	35	18	0	0	0	66
WSW	6	45	9	0	0	0	60
W	7	24	11	0	0	0	42
WNW	6	14	9	2	0	0	31
NW	7	17	15	4	0	0	43
NNW	3	8	0	0	0	0	11
TOTAL	89	304	218	19	0	0	630

Hours of Missing Data: 49

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: G DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT1

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	1	0	0	0	0	2
NNE	3	0	0	0	0	0	3
NE	2	0	0	0	0	0	2
ENE	0	0	0	0	0	0	0
E	1	0	0	0	0	0	1
ESE	1	0	0	0	0	0	1
SE	3	0	0	0	0	0	3
SSE	3	0	0	0	0	0	3
S	3	0	0	0	0	0	3
SSW	14	5	0	0	0	0	19
SW	21	10	0	0	0	0	31
WSW	28	57	0	1	0	0	86
W	44	13	0	0	0	0	57
WNW	31	9	0	0	0	0	40
NW	32	13	0	0	0	0	45
NNW	13	10	0	0	0	0	23
TOTAL	200	118	0	1	0	0	319

Hours of Missing Data: 49

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: F DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT150.

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	1	0	0	0	0	6
NNE	3	0	0	0	0	0	3
NE	1	2	0	0	0	0	3
ENE	1	6	0	0	0	0	7
E	2	5	0	0	0	0	7
ESE	0	0	0	0	0	0	0
SE	1	2	0	0	0	0	3
SSE	2	2	0	0	0	0	4
S	9	3	1	0	0	0	13
SSW	12	38	4	0	0	0	54
SW	6	27	7	0	0	0	40
WSW	8	70	0	0	0	0	78
W	10	29	0	0	0	0	39
WNW	7	14	0	0	0	0	21
NW	6	12	0	0	0	0	18
NNW	2	11	0	0	0	0	13
TOTAL	75	222	12	0	0	0	309

Hours of Missing Data: 49

Hours at Each Wind Speed and Direction

Period of Record = 91040100-91063023

Stability Class: ALL DT/DZ

Elevation: Speed:SPD33A Direction:DIR33A Lapse:DT1

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	14	15	12	1	0	0	42
NNE	13	21	18	0	0	0	52
NE	15	55	83	1	0	0	154
ENE	10	81	81	2	0	0	174
E	12	53	31	0	0	0	96
ESE	5	38	21	0	0	0	64
SE	6	25	31	1	0	0	63
SSE	8	26	33	2	0	0	69
S	19	28	54	32	0	0	133
SSW	37	76	54	9	0	0	176
SW	40	83	45	2	0	0	170
WSW	44	202	54	5	0	0	305
W	61	96	49	4	0	0	210
WNW	47	52	55	9	0	0	163
NW	48	65	56	11	0	0	180
NNW	18	47	19	0	0	0	84
TOTAL	397	963	696	79	0	0	2135

Hours of Missing Data: 49

First Quarter, 1991 380-foot Level

Hours at Each Wind Speed and Direction
Period of Record = 910100-91033123
Stability Class: A DT/DZ
Elevation: Speed:SPD380A Direction:DIR380A Lapse:DT380A

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	2	2	1	0	5
NNE	0	0	0	1	0	0	1
NE	0	2	1	0	0	0	3
ENE	0	0	1	0	0	0	1
E	0	0	2	0	0	0	2
ESE	0	0	0	1	0	0	1
SE	0	0	0	0	0	0	0
SSE	0	0	1	0	0	0	1
S	0	0	0	0	0	0	0
SSW	0	1	1	0	2	0	4
SW	0	0	2	0	0	0	2
WSW	0	0	0	0	0	1	1
W	0	0	0	2	1	1	4
WNW	0	0	0	3	5	2	10
NW	0	0	2	12	7	9	30
NNW	0	0	0	4	3	2	9
TOTAL	0	3	12	25	19	15	74

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 910100-91033123
Stability Class: C DT/DZ
Elevation: Speed:SPD380A Direction:DIR380A Lapse:D

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	1	2	1	0	4
NNE	0	0	1	1	0	0	2
NE	0	1	0	0	0	0	1
ENE	0	1	2	0	0	0	3
E	0	1	0	1	0	0	2
ESE	0	0	2	1	0	0	3
SE	0	2	2	2	0	0	6
SSE	0	3	0	1	0	0	4
S	0	1	1	6	0	0	8
SSW	0	0	0	2	1	0	3
SW	0	0	0	1	5	0	6
WSW	0	0	4	5	5	3	17
W	0	0	1	1	4	3	9
WNW	0	1	2	6	8	6	23
NW	0	1	3	11	5	4	24
NNW	0	0	2	2	2	1	7
TOTAL	0	11	21	42	31	17	122

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 910100-91033123
Stability Class: B DT/DZ
Elevation: Speed:SPD380A Direction:DIR380A Lapse:DT380A

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	2	0	0	2
NNE	0	0	1	1	0	0	2
NE	0	0	1	0	0	0	1
ENE	0	0	2	0	0	0	2
E	0	1	3	0	0	0	4
ESE	0	0	0	1	0	0	1
SE	0	0	1	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	1	0	0	1
SSW	0	0	0	1	0	0	1
SW	0	1	1	0	0	0	2
WSW	0	0	0	1	2	2	5
W	0	0	0	3	0	2	5
WNW	0	0	1	5	2	9	17
NW	0	0	0	13	7	3	23
NNW	0	0	0	7	1	1	9
TOTAL	0	2	10	35	12	17	76

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction
Period of Record = 910100-91033123
Stability Class: D DT/DZ
Elevation: Speed:SPD380A Direction:DIR380A Lapse:D

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	22	10	2	2	38
NNE	1	3	6	10	5	0	25
NE	0	4	5	23	21	13	66
ENE	0	4	1	4	7	12	28
E	0	2	9	3	0	5	19
ESE	0	9	6	7	0	0	22
SE	2	9	10	6	1	0	28
SSE	0	6	11	3	0	1	21
S	3	1	7	16	6	3	36
SSW	1	5	7	14	11	4	42
SW	0	4	8	10	7	1	30
WSW	0	2	2	10	2	5	21
W	1	1	3	12	32	11	60
WNW	2	2	13	21	18	34	90
NW	1	7	16	35	24	22	105
NNW	2	5	11	21	16	4	59
TOTAL	13	66	137	205	152	117	690

Hours of Missing Data: 3

First Quarter, 1991 380-foot Level

Hours at Each Wind Speed and Direction

Period of Record = 910100-91033123

Stability Class: E DT/DZ

Elevation: Speed:SPD380A Direction:DIR380A Lapse:DT380A

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	2	10	17	5	0	36
NNE	0	3	6	8	1	0	18
NE	1	2	8	9	2	3	25
ENE	0	1	3	8	4	19	35
E	0	2	5	7	1	11	26
ESE	0	1	1	3	3	3	11
SE	0	0	6	3	6	10	25
SSE	0	1	0	12	8	7	28
S	0	1	7	17	15	11	51
SSW	0	4	5	22	28	12	71
SW	0	4	4	16	24	28	76
WSW	0	1	3	14	13	3	34
W	2	1	2	13	23	8	49
WNW	0	0	6	26	45	11	88
NW	1	3	6	44	45	8	107
NNW	1	5	4	10	6	1	27
TOTAL	7	31	76	229	229	135	707

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction

Period of Record = 910100-91033123

Stability Class: G DT/DZ

Elevation: Speed:SPD380A Direction:DIR380A Lapse:D

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	1	1	2	0	6
NNE	0	3	5	1	0	0	9
NE	1	1	1	0	0	0	3
ENE	1	0	0	0	0	0	1
E	0	0	1	2	0	0	3
ESE	1	1	3	0	0	0	5
SE	0	0	2	4	0	0	6
SSE	0	1	3	1	2	0	7
S	0	2	3	1	2	0	8
SSW	0	1	1	3	3	0	8
SW	0	2	2	1	3	0	8
WSW	0	2	7	3	4	5	21
W	0	2	3	10	6	12	33
WNW	1	1	6	3	3	8	22
NW	2	6	2	6	5	2	23
NNW	0	1	3	12	7	0	23
TOTAL	6	25	43	48	37	27	186

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction

Period of Record = 910100-91033123

Stability Class: F DT/DZ

Elevation: Speed:SPD380A Direction:DIR380A Lapse:DT380A

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	0	4	7	3	0	15
NNE	0	1	4	8	1	0	14
NE	1	1	2	3	0	0	7
ENE	1	0	2	3	0	0	6
E	0	0	0	1	0	0	1
ESE	0	0	2	2	0	0	4
SE	0	2	1	3	2	1	9
SSE	1	1	0	1	1	0	4
S	0	1	1	0	6	0	8
SSW	0	0	0	2	3	3	8
SW	1	1	6	5	3	9	25
WSW	0	1	3	14	8	19	45
W	0	1	2	8	9	4	24
WNW	0	0	7	15	17	4	43
NW	0	0	6	10	18	7	41
NNW	0	1	5	11	27	4	48
TOTAL	5	10	45	93	98	51	302

Hours of Missing Data: 3

Hours at Each Wind Speed and Direction

Period of Record = 910100-91033123

Stability Class: ALL DT/DZ

Elevation: Speed:SPD380A Direction:DIR380A Lapse:D

Wind Direction	Wind Speed(mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	3	6	40	41	14	2	106
NNE	1	10	23	30	7	0	71
NE	3	11	18	35	23	16	106
ENE	2	6	11	15	11	31	76
E	0	6	20	14	1	16	57
ESE	1	11	14	15	3	3	47
SE	2	13	22	18	9	11	75
SSE	1	12	15	18	11	8	65
S	3	6	19	41	29	14	112
SSW	1	11	14	44	48	19	137
SW	1	12	23	33	42	38	149
WSW	0	6	19	47	34	38	144
W	3	5	11	49	75	41	184
WNW	3	4	35	79	98	74	293
NW	4	17	35	131	111	55	353
NNW	3	12	25	67	62	13	182
TOTAL	31	148	344	677	578	379	2157

Hours of Missing Data: 3

Second Quarter, 1991

380-Foot Level

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: A DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT380A

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	2	0	0	2
NE	0	0	2	5	2	0	9
ENE	0	0	0	5	2	0	7
E	0	0	4	5	0	0	9
ESE	0	0	9	0	0	0	9
SE	0	1	4	2	0	0	7
SSE	0	2	1	2	0	0	5
S	0	0	2	8	0	0	10
SSW	0	0	1	1	0	0	2
SW	0	1	0	0	0	0	1
WSW	0	0	4	12	2	0	18
W	0	0	4	9	4	0	17
WNW	0	0	2	7	10	4	23
NW	0	1	3	12	5	5	26
NNW	0	0	0	6	1	1	8
TOTAL	0	5	36	76	26	10	153

Hours of Missing Data: 46

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: C DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT3

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	1	0	1	0	4
NNE	0	2	4	1	0	0	7
NE	0	3	2	2	1	0	8
ENE	0	2	7	3	4	0	16
E	0	1	8	1	0	0	10
ESE	0	3	4	0	0	0	7
SE	0	0	5	2	0	0	7
SSE	0	2	6	1	0	0	9
S	0	0	6	9	1	0	16
SSW	0	0	0	7	6	1	14
SW	0	1	1	1	1	0	4
WSW	0	1	8	10	2	2	23
W	0	2	8	6	1	1	18
WNW	0	0	6	3	5	1	15
NW	0	1	9	7	1	2	20
NNW	0	1	0	5	0	0	6
TOTAL	0	21	75	58	23	7	184

Hours of Missing Data: 46

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: B DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT380A

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	1	1	0	0	0	2
NNE	0	0	0	4	0	0	4
NE	0	0	1	1	1	1	4
ENE	0	0	10	7	4	0	21
E	0	1	10	1	0	0	12
ESE	0	0	7	0	0	0	7
SE	0	0	12	0	0	0	12
SSE	0	0	3	5	0	0	8
S	0	0	0	9	7	0	16
SSW	0	0	1	4	4	0	9
SW	0	0	3	3	0	0	6
WSW	0	1	3	11	2	0	17
W	0	0	8	5	0	3	16
WNW	0	0	4	8	3	3	18
NW	0	0	2	11	4	1	18
NNW	0	0	2	4	1	0	7
TOTAL	0	3	67	73	26	8	177

Hours of Missing Data: 46

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: D DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT3

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	3	3	3	2	13
NNE	1	10	10	9	3	1	34
NE	1	7	15	27	36	10	96
ENE	1	7	31	48	35	10	132
E	0	5	25	23	4	0	57
ESE	1	8	13	10	0	0	32
SE	1	7	11	1	0	0	20
SSE	1	1	22	8	3	0	35
S	1	6	15	11	2	4	39
SSW	0	4	5	30	13	2	54
SW	1	4	6	6	2	0	19
WSW	0	2	8	23	8	1	42
W	0	3	8	21	16	1	49
WNW	1	3	6	11	9	5	35
NW	1	1	4	17	9	9	41
NNW	0	4	4	6	2	0	16
TOTAL	10	74	186	254	145	45	714

Hours of Missing Data: 46

Second Quarter, 1991

380-Foot Level

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: E DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT380A

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: G DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT3

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	2	1	4	2	0	10
NNE	1	3	1	6	0	0	11
NE	0	3	0	2	1	0	6
ENE	2	4	4	14	2	0	26
E	1	3	2	2	0	0	8
ESE	1	0	4	1	0	0	6
SE	0	1	5	2	0	0	8
SSE	1	1	3	4	1	0	10
S	0	1	8	2	2	2	15
SSW	0	0	10	18	34	2	64
SW	0	2	3	21	35	14	75
WSW	1	0	4	10	25	12	52
W	0	4	3	15	25	0	47
WNW	0	1	6	4	14	1	26
NW	0	4	5	11	7	5	32
NNW	0	2	1	3	13	3	22
TOTAL	8	31	60	119	161	39	418

Hours of Missing Data: 46

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	0	1	6	6	0	14
NNE	0	1	0	2	0	0	3
NE	0	4	3	3	0	0	10
ENE	0	0	1	0	0	0	1
E	0	0	1	0	0	0	1
ESE	0	0	2	0	0	0	2
SE	0	3	0	0	0	0	3
SSE	0	1	4	1	0	0	6
S	1	1	6	2	0	0	10
SSW	0	0	4	4	0	0	8
SW	0	0	2	10	2	1	15
WSW	0	2	5	14	12	5	38
W	0	1	3	10	12	10	36
WNW	0	1	4	12	5	3	25
NW	0	0	3	12	0	0	15
NNW	0	1	2	10	6	0	19
TOTAL	2	15	41	86	43	19	206

Hours of Missing Data: 46

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: F DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT380A

Hours at Each Wind Speed and Direction
Period of Record = 91040100-91063023
Stability Class: ALL DT/DZ
Elevation: Speed:SP380A Direction:DIR380A Lapse:DT3

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	2	3	2	2	9
NNE	0	0	2	0	0	0	2
NE	0	0	5	2	1	0	8
ENE	0	0	3	0	0	0	3
E	0	1	1	0	0	0	2
ESE	0	0	0	0	0	0	0
SE	1	0	2	0	0	0	3
SSE	0	0	0	1	0	0	1
S	0	2	3	11	1	0	17
SSW	0	2	2	12	14	3	33
SW	0	0	1	6	15	7	29
WSW	0	1	3	17	21	20	62
W	0	2	5	10	23	3	43
WNW	0	1	1	5	12	3	22
NW	0	0	6	14	14	3	37
NNW	0	0	1	3	9	2	15
TOTAL	1	9	37	84	112	43	286

Hours of Missing Data: 46

Wind Direction	Wind Speed (mph)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	7	9	16	14	4	52
NNE	2	16	17	24	3	1	63
NE	1	17	28	42	42	11	141
ENE	3	13	56	77	47	10	206
E	1	11	51	32	4	0	99
ESE	2	11	39	11	0	0	63
SE	2	12	39	7	0	0	60
SSE	2	7	39	22	4	0	74
S	2	10	40	52	13	6	123
SSW	0	6	23	76	71	8	184
SW	1	8	16	47	55	22	149
WSW	1	7	35	97	72	40	252
W	0	12	39	76	81	18	226
WNW	1	6	29	50	58	20	164
NW	1	7	32	84	40	25	189
NNW	0	8	10	37	32	6	93
TOTAL	21	158	502	750	536	171	2138

Hours of Missing Data: 46

Section III: Changes to PCP and ODCM

Change Number 1

Procedure Title: Process Control Plan for Transfer and Solidification of Solid Wet Waste via CNSI Cement Solidification System (Procedure 351.36, Rev.10)

Effective Date: February 14, 1991

Description of Change: To incorporate the CNSI Rapid Dewatering System (RDS-1000) Unit #5 into this procedure to dewater filter media instead of cement solidification. NRC approval by Topical Report RN-1000-01-P-A.

Radwaste Programs

Manager: A.H. Wacha

Section IV: Effluent Monitoring Instrumentation Inoperability

EFFLUENT MONITORING INSTRUMENTATION INOPERABILITY

Section 3.15 of the Technical Specifications requires that "instrumentation to monitor radioactive effluents [must be] operable when effluent is discharged or that [some] means of measuring effluent is provided." Furthermore, sections 3.15.A and 3.15.B for liquid and gaseous effluent monitoring instrumentation, respectively, state that when "less than the minimum number of ... channels are operable, ... make every reasonable effort to restore the instrument to operable status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner."

During the reporting period, January 1, 1991 through June 30, 1991, the following effluent monitoring instrumentation inoperabilities greater than 30 days were recorded:

Failure to maintain operability of:

1. Liquid Radwaste Effluent Line Monitor (Table 3.15.1a)
2. Reactor Building Service Water System Effluent Line Monitor (Table 3.15.1b)
3. Stack Effluent Flow Measuring Device (Table 3.15.2.2d)

Corrective Action: The corrective actions in Tables 3.15.1 and 3.15.2 of the OC Technical Specifications were implemented. Daily overboard discharge samples of the Reactor Building Closed Cooling Water (RBCCW) System service water were taken and analyzed from the beginning of the reporting period since the RBCCW service water monitor was taken out of service. Item 3 was taken out of service on February 14 of this year. Since then, stack flow rate is calculated using designed exhaust fan flow rates. Both items 2 and 3 above are currently in the process of being repaired and tested. Item 1 has been requested to be deleted from the Technical Specifications by GPU Nuclear in a letter dated April 29, 1991 to the Nuclear Regulatory Commission.

Appendix: Corrections to Previous SemiAnnual Effluent Reports

Due to a laboratory analysis error, the gross alpha activity in Table 1 of the 1990-2 SemiAnnual Effluent Release Report was in error. A corrected table is shown below.

Table 1
1990-2 SemiAnnual Effluent Release Report
Third Quarter Summary

Gaseous Effluents	Nuclide	Elevated Release	
		Curies Released	
<i>Fission and Activation Gases</i>			
	Kr-85m	3.25E+00	
	Kr-87	1.41E+01	
	Kr-88	1.36E+01	
	Xe-133	3.28E+01	
	Xe-135	7.33E+01	
	Total Released	1.37E+02	
	Average Release Rate	1.72E+01 uCi/sec	
	E-bar	0.7578 MeV	
	Percent Tech Spec Limit	0.01%	
<i>Iodines</i>			
	I-131	5.43E-03	
	I-133	2.87E-02	
	I-135	9.21E-03	
	Total Released	4.33E-02	
	Average Release Rate	5.45E-03 uCi/sec	
<i>Particulates</i>			
	Sr-89	1.93E-03	
	Sr-90	2.73E-06	
	Tc-99m	2.36E-03	
	Ba-140	1.20E-04	
	Gross Alpha	< LLD	Revised
	Total Released	4.41E-03	Revised
	Average Release Rate	5.55E-04 uCi/sec	Revised
<i>Tritium</i>			
	H-3	3.24E+00	
	Total Released	3.24E+00	
	Average Release Rate	4.08E-01 uCi/sec	

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