Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 736.8001

New York Power Authority

Robert J. Barrett
Site Executive Officer

February 18, 2000
IPN-00-012

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Radioactive Effluent Release and Waste Disposal Semi-Annual Report for the period July 1, 1999 through December 31, 1999

Dear Sir:

Enclosed is the Semi-Annual Report of Radioactivity in Solid Wastes and Releases of Radioactive Material in Liquid and Gaseous Effluents for Indian Point 3 as required by the Environmental Technical Specifications Section 5.3.2.1. The enclosed report covers the period July 1, 1999 through December 31, 1999 for Indian Point 3. It would include those releases from Indian Point 1 or 2 resulting from processing waste from Indian Point 3 if this pathway was utilized. During this reporting period, no waste was transferred from Indian Point 3 to Indian Point 1 or 2. Additionally, the liquid waste tie line to Indian Point 1 or 2 was permanently capped during this reporting period, as discussed in Section 7 of this report. The Authority is making no commitments in this submittal.

Very truly yours,

R. J. Barrett
Site Executive Officer
Indian Point 3 Nuclear Power Plant

Attachment

cc: See next page

cc: Mr. Hubert J. Miller
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Mr. George Wunder, Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
U.S. Nuclear Regulatory Commission
Mail Stop 8C4
Washington, DC 20555

U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

Mr. Paul Kolakowski
Division of Water
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-3505

Mr. Joseph Marcogliese
Regional Water Engineer, Region 3
Department of Environmental Conservation
5th Floor
200 White Plains Road
Tarrytown, New York 10591-5805

Mr. Robert A. Oliveira
American Nuclear Insurers
Town Center, Suite 300S
29 South Main Street
West Hartford, Connecticut 06107-2445

Mr. John McCann
Manager, Nuclear Safety and Licensing
Consolidated Edison Co. of New York, Inc.
Indian Point Station
Broadway and Bleakley Avenue
Buchanan, New York 10511

Mr. Michael Miele
Manager, Radiation Protection
Consolidated Edison Co. of New York, Inc.
Indian Point Station
Broadway and Bleakley Avenue
Buchanan, New York 10511

Mr. Reynolds Burns
Manager, Chemistry
Consolidated Edison Co. of New York, Inc.
Indian Point Station
Broadway and Bleakley Avenue
Buchanan, New York 10511

Effluent and Waste Disposal

Semi-Annual Report

July 1, 1999 - December 31, 1999

Facility Indian Point 3

Licensee New York Power Authority

This information is provided in accordance with the requirements of Regulatory Guide 1.21. The numbered sections of this report reference corresponding sections of the subject Regulatory Guide, pages 10 to 12.

A. Supplemental Information

1. Regulatory Limits

Indian Point 3 is presently subject to limits on radioactive waste releases that are set forth in sections 2.3.1, 2.3.2, 2.3.3, 2.4.1, 2.4.2, 2.4.3 and 2.4.4 of Appendix B to Docket No. 50-286 entitled "Environmental Technical Specification Requirements Part II Radiological Environmental" (ETSR). The percentages of the technical specification limits reported in Tables 1A and 2A are the percent of the quarterly limits specified in the ETSR. If more than one limit applies to the release, the most restrictive limit is reported.

2. Maximum Permissible Concentration

a) Fission and Activation Gases

The quarterly dose resulting from release of fission and activation gases is calculated in accordance with the methodology stated in the Offsite Dose Calculation Manual (ODCM). The specific isotopes listed in Table 1C are used to determine the effective dose factors for the time period.

b/c) Iodines, Tritium and Particulates

The quarterly organ dose limit for Iodine 131, tritium and particulates with half-lives greater than eight days is calculated in accordance with the methodology stated in the ODCM.

d) Liquid Effluents

The quarterly dose limit for liquid isotopic releases is calculated in accordance with the methodology stated in the ODCM. The concentration limit for noble gases dissolved in liquid releases is calculated based upon a maximum permissible concentration of 2.00E-4 uCi/ml as required by section 2.3.1.A of the ETSR.

3. Average Energy

The average energies ($\bar{E}$) of the radionuclide mixtures in releases of fission and activation gases were as follows:

3rd Quarter $\bar{E}_\beta$ = 2.77E-01 Mev/dis $\bar{E}_\gamma$ = 5.13E-01 Mev/dis

4th Quarter $\bar{E}_\beta$ = 3.72E-01 Mev/dis $\bar{E}_\gamma$ = 9.36E-01 Mev/dis

4. Measurements and Approximations of Total Radioactivity

a) Fission and Activation Gases

Analysis of effluent gases has been performed in compliance with the requirements of Table 3.4-1 of the ETSR. In the case of isolated tanks (batch release), the total activity discharged is based on an isotopic analysis of each batch with the volume of gas in the batch corrected to standard temperature and pressure.

Vapor containment purge discharges that are less than 150 hours/quarter in duration have been treated as batch releases. Vapor Containment pressure relief discharges are performed routinely and are therefore quantified as continuous releases. Both types of releases from the Vapor Containment are performed randomly with regard to time of day and duration (release periods were not dependant solely on time of day or atmospheric condition). Therefore, determination of doses due to Vapor Containment releases includes the use of annual average dispersion data, as defined in NUREG 0133, Section 3.3.

At least one complete isotopic concentration analysis of containment air is performed monthly. This analysis is used in conjunction with a process monitor to obtain the isotopic mixture and quantification of each pressure relief. Isotopic analyses for each vapor containment purge are taken prior to and during the purge. This information is combined with the volume of air in each discharge to calculate the quantity of activity released from these discharges.

The continuous building discharges are based on weekly samples of ventilation air analyzed for isotopic content. This information is combined with total air volume discharged and the process radiation monitor readings to determine the quantity of activity from continuous discharges.

When no gaseous activity is identified for an entire quarter, a "less than" value is reported. This value is determined from the established Xe-133 minimum detectable concentration and the total volume of air released from all continuous release points for the quarter.

b/c) Iodines and Particulates

Iodine-131 and particulate releases are quantified by collecting a continuous sample of ventilation air on a TEDA impregnated, activated charcoal cartridge and a glass-fiber filter paper. These samples are changed weekly as required in Table 3.4-1 of the ETSR and the concentration of isotopes found by analysis of these samples is combined with the volume of air discharged during the sampling period to calculate the quantity of activity discharged.

For other iodine isotopes, concentrations are determined monthly on a 24-hour sample. The concentration of each isotope is analytically determined and combined with the volume of air discharged during the sampling period to calculate the quantity of activity discharged.

When no iodine is identified for an entire quarter, a "less than" value is reported. The "less than" value (in curies) is derived from the established minimum detectable concentration of I-131 and the total volume of air released from all continuous release points.

d) Liquid Effluents

A sample of each batch discharge is taken and an isotopic analysis is performed in compliance with requirements specified in Table 3.3-I of the ETSR. These isotopic concentration data are combined with the information on volume discharged to determine the amount of each isotope discharged.

Proportional composite samples of continuous discharges are taken and analyzed in compliance with Table 3.3-I of the ETSR. These concentration data are combined with the volume discharged to calculate the total activity discharged.

5. Batch Releases

a) Liquid Releases

	1999	
	3rd Quarter	4th Quarter
Number of Batch Releases	74	59
Total Time Period Batch Releases (min)	8030	6850
Maximum Time Period Batch Releases (min)	136	138
Average Time Period Batch Releases (min)	109	116
Minimum Time Period Batch Releases (min)	56	101
Average Stream Flow (cfs)	Note *	Note *

Note:*

Hudson River flow information is obtained from the Department of the Interior, United States Geological Survey (USGS). These data are received after review from the USGS, approximately 18 months after initial data collection. This information is included in semi-annual reports as the data become available.

Estimated Average Stream Flows of the Hudson River at Indian Point

Year	Quarter	Flow (cfs)
1997	Fourth	11,750
1998	First	35,633
1998	Second	30,100
1998	Third	7,707

b) Gaseous Releases

	1999 3rd Quarter	4th Quarter
Number of Batch Releases	13	8
Total Time Period Batch Releases (min)	2283	744
Maximum Time Period Batch Releases (min)	643	137
Average Time Period Batch Releases (min)	176	93
Minimum Time Period Batch Releases (min)	40	19

6. Abnormal Releases

a) Liquid
None

b) Gaseous
None

7. Radiological Environmental Technical Specifications

The Radiological Environmental Technical Specifications (RETS) require reporting of prolonged outages of effluent monitoring equipment (Sections 2.1.C and 2.2.B) and significant changes in the land use census, Radiological Environmental Monitoring Program (REMP), or exceeding the total curie content limitations in outdoor tanks (Sections 2.8.A, 2.8.B, 2.7.C and 2.3.4.B).

During this reporting period, no required Technical Specification Effluent Monitoring equipment was out of service (OOS) for periods greater than 30 consecutive days.

During this reporting period, the total curie content limit in outdoor tanks was not exceeded.

The Offsite Dose Calculation Manual, REMP, and Process Control Program were updated during this reporting period. Changes are identified in Section G.

During this reporting period, a modification was performed to permanently cap the liquid waste processing tie line from Unit 3 to Indian Point 1/2. Notification of the capped line is included here for purposes of clarification and consistency only.

Indian Point 3

EFFLUENT AND WASTE DISPOSAL

SEMI-ANNUAL REPORT

B. GASEOUS EFFLUENTS

THIRD AND FOURTH QUARTERS, 1999

TABLE 1A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (Jul - Dec 1999)

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter 3rd	Quarter 4th	Est. Total Error %
A. Fission & Activation Gases				
1. Total Release	Ci	2.42E+00	3.14E-02	±25
2. Average release rate	µCi/sec	3.05E-01	3.95E-03	
3. Percent of Tech Spec Limit	%	7.62E-03	1.28E-04	
B. Iodines				
1. Total Iodine-131	Ci	<3.52E-06	<3.52E-06	±25
2. Average release rate	µCi/sec	<4.43E-07	<4.43E-07	
C. Particulates				
1. Total release, with half-life > 8 days	Ci	1.12E-05	7.91E-07	±25
2. Average release rate	µCi/sec	1.41E-06	9.95E-08	
3. Gross alpha radioactivity	Ci	<2.50E-07	<2.79E-07	
D. Tritium				
1. Total release	Ci	7.34E-01	5.81E-01	±25
2. Average release rate	µCi/sec	9.23E-01	7.31E-02	
E. Percent Tech Spec limit, I & P with half-life > 8 days, including H-3	%	1.51E-03	1.19E-03	±25

TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (Jul - Dec 1999)
GASEOUS EFFLUENTS - GROUND RELEASES

Nuclides Released	Unit	CONTINUOUS MODE Quarter 3rd	CONTINUOUS MODE Quarter 4th	BATCH MODE Quarter 3rd	BATCH MODE Quarter 4th
1) Fission Gases					
Kr-85m	Ci			2.31E-02	1.58E-05
Kr-85	Ci				
Kr-87	Ci			1.34E-02	
Kr-88	Ci			3.88E-02	2.25E-05
Xe-131m	Ci			4.13E-04	
Xe-133m	Ci			1.26E-02	
Xe-133	Ci	5.35E-03	7.50E-03	1.21E+00	1.13E-03
Xe-135m	Ci			1.86E-02	
Xe-135	Ci			3.13E-01	2.13E-04
Xe-138	Ci				
Ar-41	Ci	2.72E-02	2.11E-02	7.60E-01	1.40E-03
Total for Period	Ci	3.25E-02	2.86E-02	2.39E+00	2.78E-03
2) Iodines					
I-131	Ci				
I-133	Ci				
I-135	Ci				
Total for Period	Ci	<3.52E-06	<3.52E-06		
3) Particulates					
Co-58	Ci	1.12E-05	7.91E-07		
Total for Period	Ci	1.12E-05	7.91E-07		

Indian Point 3

EFFLUENT AND WASTE DISPOSAL

SEMI-ANNUAL REPORT

C. LIQUID EFFLUENTS

THIRD AND FOURTH QUARTERS, 1999

TABLE 2A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (Jul - Dec 1999)

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter 3rd	Quarter 4th	Est. Total Error %
A. Fission & Activation Products				
1. Total Release (excluding tritium, gases, alpha)	Ci	1.88E-02	1.98E-02	±25
2. Avg diluted concentration during period	µCi/ml	5.31E-11	6.57E-11	
B. Tritium				
1. Total Release	Ci	1.92E+02	3.33E+01	±25
2. Avg diluted concentration during period	µCi/ml	5.42E-07	1.11E-07	
C. Dissolved and entrained gases				
1. Total release	Ci	3.72E-02	4.09E-04	±25
2. Avg diluted concentration during period	µCi/ml	1.05E-10	1.36E-12	
D. Gross Alpha radioactivity				
1. Total release	Ci	<9.76E-05	<8.13E-05	±25
E. Volume of waste released prior to dilution	liters	1.81E+06	1.56E+06	±10
F. Volume of dilution water used during period	liters	3.54E+11	3.01E+11	±10
G. Percent of liquid effluent limit	%	1.87E-02	7.70E-03	±25

TABLE 2B

LIQUID EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (Jul - Dec 1999)

1) Fission and Activation Products (excluding gases)

Nuclides Released	Unit	CONTINUOUS MODE Quarter 3rd	CONTINUOUS MODE Quarter 4th	BATCH MODE Quarter 3rd	BATCH MODE Quarter 4th
Na-24	Ci				2.21E-05
Cr-51	Ci			4.80E-04	5.56E-04
Mn-54	Ci			7.56E-05	2.95E-05
Fe-55	Ci			2.50E-03	1.30E-03
Co-58	Ci			6.95E-03	1.22E-02
Co-60	Ci			2.82E-03	1.31E-03
Ni-63	Ci			2.78E-03	9.68E-04
Zr-95	Ci			2.74E-05	
Nb-95	Ci			5.25E-05	
Ag-110m	Ci			7.64E-05	2.83E-04
Sb-124	Ci			1.34E-05	1.35E-03
Sb-125	Ci			4.78E-04	6.48E-04
Te-123m	Ci				7.65E-04
I-131	Ci			4.69E-05	
Cs-134	Ci			5.48E-04	4.44E-05
Cs-137	Ci			1.94E-03	2.88E-04
Total for Period	Ci			1.88E-02	1.98E-02

2) Dissolved and Entrained Gases

Xe-133m	Ci			2.91E-04	
Xe-133	Ci			3.64E-02	4.09E-04
Xe-135	Ci			4.60E-04	
Xe-135m	Ci			2.24E-06	
Total for Period	Ci			3.72E-02	4.09E-04

Indian Point 3

EFFLUENT AND WASTE DISPOSAL

SEMI-ANNUAL REPORT

D. SOLID WASTE

THIRD AND FOURTH QUARTERS, 1999

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SOLID WASTE SHIPMENTS
July 1, 1999 - December 31, 1999

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

1. **Type of Waste**	Unit	6 Month Period Class A	Class B	Class C	Est. Total Error, %
a. Spent resins, filter sludges, etc.	m^3	0	4.48E+00	0	
	Ci	0	2.40E+00	0	±25
b. Dry compressible, contam. equipment for burial	m^3	0	0	0	
	Ci	0	0	0	±25
c. Irradiated Components	m^3	0	0	0	
	Ci	0	0	0	±25
d. Other: Dry compressible, contaminated equip. for volume reduction at offsite facility	m^3	3.51E+02	0	0	
	Ci	7.78E-01	0	0	±25

2. **Estimate of major nuclide composition (by type of waste)**

NUCLIDE	UNIT	Class A Dry Vol Reduction	Class B Resins,Filters, etc
H-3	%	0.0053	0.4540
Be-7	%	<0.0001	0.0016
C-14	%	<0.0001	0.2733
Cr-51	%	0.9520	<0.0001
Mn-54	%	0.3863	0.8914
Fe-55	%	3.0168	19.8278
Co-57	%	0.0001	0.0145
Co-58	%	3.0556	0.4095
Fe-59	%	<0.0001	<0.0001
Ni-59	%	<0.0001	0.0683
Co-60	%	19.1854	15.6206
Ni-63	%	62.6626	5.9150
Zn-65	%	<0.0001	0.0144
Sr-89	%	<0.0001	<0.0001
Sr-90	%	0.0004	0.0112
Nb-95	%	0.5705	0.0002
Zr-95	%	0.2692	<0.0001
Tc-99	%	<0.0001	0.0065
Ru-106	%	<0.0001	<0.0001
Ag-110m	%	<0.0001	0.0215
Sn-113	%	<0.0001	0.0015
Sb-124	%	0.0003	0.0003
Sb-125	%	0.0172	1.2038
I-129	%	<0.0001	<0.0001
Ba-131	%	0.0124	<0.0001
Cs-134	%	0.4482	12.3299
Cs-137	%	9.2623	42.9046
Ce-144	%	0.0347	0.0141
Hg-203	%	<0.0001	<0.0001
Pu-238	%	<0.0001	0.0011
Pu-239/240	%	0.0263	0.0003
Pu-241	%	<0.0001	0.0130
Am-241	%	<0.0001	0.0002
Am-243	%	<0.0001	0.0001
Cm-242	%	0.0943	0.0002
Cm-243/244	%	<0.0001	0.0011

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SOLID WASTE SHIPMENTS

July 1, 1999 - December 31, 1999

3. **Solid Waste Disposition**

# of Shipments	Mode of Transport	Destination	Disposition
1	Truck	CNS, Barnwell, SC	direct burial
4	Truck	G.T.S. Duratek, Oak Ridge, TN	volume reduction
4	Truck	American Ecology, Oak Ridge, TN	volume reduction

4. **Containers Shipped**

Container	Class A Number	Class A Solid. Media	Class B Number	Class B Solid. Media	Class C Number	Class C Solid Media
For Burial:						
Poly HIC	0	N/A	1	N/A	0	N/A
Drums	0	N/A	0	N/A	0	N/A
Steel Liner	0	N/A	0	N/A	0	N/A
Crates	0	N/A	0	N/A	0	N/A
Volume Reduction:						
Sea Land Cont.	9	N/A	0	N/A	0	N/A
Crate	7	N/A	0	N/A	0	N/A
Six Pack	0	N/A	0	N/A	0	N/A
Drums	24	N/A	0	N/A	0	N/A

Indian Point 3

EFFLUENT AND WASTE DISPOSAL

SEMI-ANNUAL REPORT

E. RADIOLOGICAL IMPACT ON MAN

Jan 1, 1999 - Dec 31, 1999

RADIOLOGICAL IMPACT ON MAN

The radiological impact on man is determined by conservatively calculating doses to a hypothetical maximally exposed individual offsite based on plant effluents. These calculations are divided into 3 categories:

- Noble Gases
- Particulates and Iodine
- Liquid Releases (fish and invertebrate consumption)

An annual average dispersion factor is used in the calculations, the details of which are presented in the Offsite Dose Calculation Manual (ODCM).

The computer code used to perform gaseous dose calculations incorporates the models and parameters presented in the Indian Point 3 ODCM which utilizes the assumptions in Regulatory Guide 1.109 and NUREG 0133.

These doses were calculated using radioactive releases from the Indian Point #3 Nuclear Power Plant. Indian Point is a multi-unit site, with Unit 3 owned and operated by the New York Power Authority. Doses resulting from releases from Indian Point Units 1 and 2 are independently reported by the owner and licensee, Consolidated Edison.

Doses to individuals from liquid pathways for the fish and invertebrate consumption pathways are computed using the methodology and parameters in the Indian Point 3 ODCM, which incorporates the calculational models that are present in Regulatory Guide 1.109 and NUREG 0133 where site specific data do not exist.

Carbon 14 release concentration and resulting dose have been estimated using data generated at Indian Point 3 from August 1980 to June 1982 after a study conducted by the New York State Department of Health. These estimates are consistent with NUREG 0017, Rev. 1. The maximum expected annual dose from Carbon 14 releases at IP3 has been calculated using the maximum dependable gross electrical capacity of Indian Point 3, which is 1000 MW(e) maintained for the entire year. The resultant worst case doses are based upon site specific assumptions of source term outlined in the ODCM released for an entire year, at 1000 MW(e) output.

The annual dose to the maximally exposed individual (child) from gaseous releases of Carbon-14 is 0.254 mRem to the critical organ (bone) and 0.0508 mRem to the total body. The annual dose to the maximally exposed individual (child) from liquid releases of Carbon-14 is 0.00583 mRem to the critical organ (bone) and 0.00117 mRem to the total body.

INDIAN POINT 3 NUCLEAR POWER PLANT
RADIOLOGICAL IMPACT ON MAN
JANUARY - DECEMBER 1999

Maximum exposed individual doses in mrem or mrad

A. LIQUID DOSES

		Qtr 1	Qtr 2	Qtr 3	Qtr 4	ANNUAL
Adult Bone	(mrem)	4.98E-04	2.54E-04	4.29E-04	1.66E-04	1.35E-03
Applicable Limit		5	5	5	5	10
Percent of Limit		9.95E-03	5.08E-03	8.59E-03	3.31E-03	1.35E-02
Adult Total Body	(mrem)	2.42E-04	1.43E-04	2.81E-04	7.97E-05	7.46E-04
Applicable Limit		1.5	1.5	1.5	1.5	3
Percent of Limit		1.62E-02	9.56E-03	1.87E-02	5.31E-03	2.49E-02

note : The Adult Bone was the critical organ for liquid pathways in 1999.

B. NOBLE GAS DOSES

	Qtr 1	Qtr 2	Qtr 3	Qtr 4	ANNUAL
Gamma Air (mrad)	2.25E-05	2.25E-05	6.49E-04	1.45E-05	7.09E-04
Applicable Limit	5	5	5	5	10
Percent of Limit	4.49E-04	4.51E-04	1.30E-02	2.89E-04	7.09E-03
Beta Air (mrad)	2.05E-05	1.94E-05	7.62E-04	1.28E-05	8.15E-04
Applicable Limit	10	10	10	10	20
Percent of Limit	2.05E-04	1.94E-04	7.62E-03	1.28E-04	4.07E-03

C. IODINE and PARTICULATE DOSES

	Qtr 1	Qtr 2	Qtr 3	Qtr 4	ANNUAL
Iodine/Part (mrem)	1.36E-04	1.07E-04	1.13E-04	8.91E-05	4.44E-04
Applicable Limit	7.5	7.5	7.5	7.5	15
Age Group	Child	Child	Child	Child	Child
Critical Organ	Liver	Liver	Lung	Lung	Liver
Percent of Limit	1.81E-03	1.42E-03	1.51E-03	1.19E-03	2.96E-03

Indian Point 3

EFFLUENT AND WASTE DISPOSAL

SEMI-ANNUAL REPORT

F. METEOROLOGICAL DATA

Jan 1, 1999 - Dec 31, 1999

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: A

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.2	1.0	15.0	35.0	6.0	.0	.0	57.2
NNE	.2	1.0	1.0	.0	1.0	.0	.0	3.2
NE	.0	.0	.0	.0	.0	.0	.0	.0
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.2	1.0	.0	.0	.0	.0	.0	1.2
SE	.5	2.0	.0	.0	.0	.0	.0	2.5
SSE	.9	4.0	5.0	2.0	.0	.0	.0	11.9
S	.2	1.0	4.0	1.0	.0	.0	.0	6.2
SSW	.0	.0	.0	.0	.0	.0	.0	.0
SW	.5	2.0	3.0	3.0	.0	.0	.0	8.5
WSW	.0	.0	3.0	3.0	.0	.0	.0	6.0
W	.0	.0	3.0	6.0	.0	.0	.0	9.0
WNW	.2	1.0	8.0	13.0	.0	.0	.0	22.2
NW	.0	.0	12.0	17.0	.0	.0	.0	29.0
NNW	.0	.0	14.0	6.0	.0	.0	.0	20.0
TOTAL	3.0	13.0	68.0	86.0	7.0	.0	.0	177.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: B

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	2.0	11.0	13.0	1.0	.0	.0	27.0
NNE	.0	1.0	2.0	1.0	.0	.0	.0	4.0
NE	.0	1.0	.0	3.0	.0	.0	.0	4.0
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.0	1.0	.0	.0	.0	.0	.0	1.0
ESE	.0	1.0	.0	.0	.0	.0	.0	1.0
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	.0	9.0	.0	.0	.0	.0	9.0
S	.0	.0	1.0	3.0	.0	.0	.0	4.0
SSW	.0	1.0	1.0	1.0	.0	.0	.0	3.0
SW	.0	.0	.0	.0	.0	.0	.0	.0
WSW	.0	2.0	4.0	.0	.0	.0	.0	6.0
W	.0	1.0	3.0	5.0	.0	.0	.0	9.0
WNW	.0	1.0	2.0	5.0	.0	.0	.0	8.0
NW	.0	.0	5.0	5.0	.0	.0	.0	10.0
NNW	.0	2.0	6.0	4.0	.0	.0	.0	12.0
TOTAL	.0	13.0	44.0	40.0	1.0	.0	.0	98.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: C

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.3	3.0	20.0	10.0	1.0	.0	.0	34.3
NNE	.1	1.0	4.0	2.0	.0	.0	.0	7.1
NE	.2	2.0	.0	2.0	.0	.0	.0	4.2
ENE	.1	1.0	1.0	.0	.0	.0	.0	2.1
E	.2	2.0	.0	.0	.0	.0	.0	2.2
ESE	.1	1.0	.0	.0	.0	.0	.0	1.1
SE	.2	2.0	.0	.0	.0	.0	.0	2.2
SSE	.0	.0	1.0	.0	.0	.0	.0	1.0
S	.1	1.0	7.0	2.0	.0	.0	.0	10.1
SSW	.0	.0	2.0	1.0	.0	.0	.0	3.0
SW	.3	3.0	.0	3.0	.0	.0	.0	6.3
WSW	.0	.0	1.0	1.0	.0	.0	.0	2.0
W	.0	.0	2.0	2.0	.0	.0	.0	4.0
WNW	.1	1.0	4.0	3.0	.0	.0	.0	8.1
NW	.2	2.0	6.0	7.0	.0	.0	.0	15.2
NNW	.1	1.0	8.0	2.0	.0	.0	.0	11.1
TOTAL	2.0	20.0	56.0	35.0	1.0	.0	.0	114.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: D

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.1	22.0	159.0	104.0	7.0	.0	.0	292.1
NNE	.1	28.0	90.0	40.0	4.0	.0	.0	162.1
NE	.1	15.0	16.0	2.0	.0	.0	.0	33.1
ENE	.1	15.0	2.0	.0	.0	.0	.0	17.1
E	.0	10.0	.0	.0	.0	.0	.0	10.0
ESE	.0	6.0	.0	.0	.0	.0	.0	6.0
SE	.0	11.0	4.0	1.0	.0	.0	.0	16.0
SSE	.1	20.0	19.0	13.0	1.0	.0	.0	53.1
S	.1	12.0	34.0	10.0	4.0	.0	.0	60.1
SSW	.1	16.0	26.0	4.0	.0	.0	.0	46.1
SW	.1	16.0	11.0	6.0	.0	.0	.0	33.1
WSW	.1	14.0	17.0	4.0	1.0	.0	.0	36.1
W	.0	11.0	48.0	11.0	.0	.0	.0	70.0
WNW	.0	6.0	41.0	29.0	1.0	.0	.0	77.0
NW	.0	11.0	67.0	50.0	4.0	.0	.0	132.0
NNW	.1	12.0	90.0	41.0	.0	.0	.0	143.1
TOTAL	1.0	225.0	624.0	315.0	22.0	.0	.0	1187.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: E

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.3	13.0	9.0	11.0	.0	.0	.0	33.3
NNE	1.0	39.0	31.0	9.0	.0	.0	.0	80.0
NE	.5	18.0	14.0	.0	.0	.0	.0	32.5
ENE	.3	13.0	4.0	.0	.0	.0	.0	17.3
E	.2	8.0	1.0	.0	.0	.0	.0	9.2
ESE	.2	6.0	.0	.0	.0	.0	.0	6.2
SE	.2	9.0	.0	.0	.0	.0	.0	9.2
SSE	.3	12.0	13.0	3.0	.0	.0	.0	28.3
S	.4	14.0	24.0	2.0	3.0	.0	.0	43.4
SSW	.4	14.0	5.0	1.0	.0	.0	.0	20.4
SW	.2	9.0	2.0	.0	.0	.0	.0	11.2
WSW	.2	8.0	2.0	.0	.0	.0	.0	10.2
W	.2	9.0	4.0	1.0	1.0	.0	.0	15.2
WNW	.2	6.0	9.0	.0	.0	.0	.0	15.2
NW	.2	8.0	12.0	4.0	.0	.0	.0	24.2
NNW	.3	10.0	10.0	.0	.0	.0	.0	20.3
TOTAL	5.0	196.0	140.0	31.0	4.0	.0	.0	376.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: F

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	1.3	19.0	.0	.0	.0	.0	.0	20.3
NNE	2.7	39.0	7.0	.0	.0	.0	.0	48.7
NE	.6	8.0	7.0	.0	.0	.0	.0	15.6
ENE	.4	6.0	.0	.0	.0	.0	.0	6.4
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.2	3.0	.0	.0	.0	.0	.0	3.2
SSE	.6	8.0	1.0	.0	.0	.0	.0	9.6
S	.1	2.0	1.0	.0	.0	.0	.0	3.1
SSW	.3	4.0	.0	.0	.0	.0	.0	4.3
SW	.3	4.0	1.0	.0	.0	.0	.0	5.3
WSW	.5	7.0	.0	1.0	.0	.0	.0	8.5
W	.3	4.0	2.0	.0	.0	.0	.0	6.3
WNW	.1	2.0	.0	.0	.0	.0	.0	2.1
NW	.0	.0	.0	.0	.0	.0	.0	.0
NNW	.6	8.0	1.0	.0	.0	.0	.0	9.6
TOTAL	8.0	114.0	20.0	1.0	.0	.0	.0	143.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: G

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	1.0	11.0	.0	.0	.0	.0	.0	12.0
NNE	1.5	16.0	2.0	.0	.0	.0	.0	19.5
NE	.2	2.0	.0	.0	.0	.0	.0	2.2
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.1	1.0	.0	.0	.0	.0	.0	1.1
ESE	.1	1.0	.0	.0	.0	.0	.0	1.1
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	.0	.0	.0	.0	.0	.0	.0
S	.0	.0	.0	.0	.0	.0	.0	.0
SSW	.2	2.0	.0	.0	.0	.0	.0	2.2
SW	.1	1.0	.0	.0	.0	.0	.0	1.1
WSW	.1	1.0	1.0	.0	.0	.0	.0	2.1
W	.1	1.0	.0	.0	.0	.0	.0	1.1
WNW	.1	1.0	.0	.0	.0	.0	.0	1.1
NW	.1	1.0	.0	.0	.0	.0	.0	1.1
NNW	.4	4.0	.0	.0	.0	.0	.0	4.4
TOTAL	4.0	42.0	3.0	.0	.0	.0	.0	49.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JAN/FEB/MAR 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 1/ 1/ 0] TO [1999/ 3/31/23]

PASQUILL STABILITY: ALL

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	3.3	71.0	214.0	173.0	15.0	.0	.0	476.3
NNE	5.7	125.0	137.0	52.0	5.0	.0	.0	324.7
NE	1.5	46.0	37.0	7.0	.0	.0	.0	91.5
ENE	.9	35.0	7.0	.0	.0	.0	.0	42.9
E	.5	22.0	1.0	.0	.0	.0	.0	23.5
ESE	.6	16.0	.0	.0	.0	.0	.0	16.6
SE	1.2	27.0	4.0	1.0	.0	.0	.0	33.2
SSE	1.9	44.0	48.0	18.0	1.0	.0	.0	112.9
S	.9	30.0	71.0	18.0	7.0	.0	.0	126.9
SSW	.9	37.0	34.0	7.0	.0	.0	.0	78.9
SW	1.4	35.0	17.0	12.0	.0	.0	.0	65.4
WSW	.9	32.0	28.0	9.0	1.0	.0	.0	70.9
W	.7	26.0	62.0	25.0	1.0	.0	.0	114.7
WNW	.7	18.0	64.0	50.0	1.0	.0	.0	133.7
NW	.5	22.0	102.0	83.0	4.0	.0	.0	211.5
NNW	1.4	37.0	129.0	53.0	.0	.0	.0	220.4
TOTAL	23.0	623.0	955.0	508.0	35.0	.0	.0	2144.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 15
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2144

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: A

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	.0	32.0	37.0	1.0	.0	.0	70.0
NNE	.0	.0	.0	.0	.0	.0	.0	.0
NE	.0	.0	.0	.0	.0	.0	.0	.0
ENE	.0	.0	1.0	2.0	.0	.0	.0	3.0
E	.0	.0	1.0	.0	.0	.0	.0	1.0
ESE	.0	.0	1.0	.0	.0	.0	.0	1.0
SE	.0	1.0	4.0	.0	.0	.0	.0	5.0
SSE	.0	2.0	33.0	7.0	.0	.0	.0	42.0
S	.0	1.0	32.0	37.0	.0	.0	.0	70.0
SSW	.0	.0	8.0	5.0	.0	.0	.0	13.0
SW	.0	1.0	9.0	1.0	.0	.0	.0	11.0
WSW	.0	4.0	15.0	1.0	.0	.0	.0	20.0
W	.0	.0	25.0	6.0	.0	.0	.0	31.0
WNW	.0	.0	16.0	7.0	.0	.0	.0	23.0
NW	.0	.0	8.0	18.0	.0	.0	.0	26.0
NNW	.0	.0	30.0	7.0	.0	.0	.0	37.0
TOTAL	.0	9.0	215.0	128.0	1.0	.0	.0	353.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: B

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	3.0	26.0	7.0	.0	.0	.0	36.0
NNE	.0	.0	1.0	1.0	.0	.0	.0	2.0
NE	.0	1.0	1.0	.0	.0	.0	.0	2.0
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	2.0	.0	.0	.0	.0	.0	2.0
SE	.0	3.0	.0	.0	.0	.0	.0	3.0
SSE	.0	4.0	10.0	.0	.0	.0	.0	14.0
S	.0	2.0	16.0	2.0	.0	.0	.0	20.0
SSW	.0	2.0	9.0	3.0	.0	.0	.0	14.0
SW	.0	1.0	2.0	.0	.0	.0	.0	3.0
WSW	.0	.0	4.0	.0	.0	.0	.0	4.0
W	.0	.0	3.0	.0	.0	.0	.0	3.0
WNW	.0	1.0	1.0	1.0	.0	.0	.0	3.0
NW	.0	.0	2.0	2.0	.0	.0	.0	4.0
NNW	.0	1.0	5.0	4.0	.0	.0	.0	10.0
TOTAL	.0	20.0	80.0	20.0	.0	.0	.0	120.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: C

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.1	2.0	21.0	5.0	1.0	.0	.0	29.1
NNE	.1	3.0	8.0	2.0	1.0	.0	.0	14.1
NE	.0	1.0	.0	1.0	.0	.0	.0	2.0
ENE	.1	2.0	.0	.0	.0	.0	.0	2.1
E	.1	3.0	.0	.0	.0	.0	.0	3.1
ESE	.1	4.0	.0	.0	.0	.0	.0	4.1
SE	.1	2.0	.0	.0	.0	.0	.0	2.1
SSE	.1	2.0	14.0	1.0	.0	.0	.0	17.1
S	.2	6.0	17.0	3.0	.0	.0	.0	26.2
SSW	.1	4.0	5.0	1.0	.0	.0	.0	10.1
SW	.0	1.0	1.0	3.0	.0	.0	.0	5.0
WSW	.0	.0	2.0	.0	.0	.0	.0	2.0
W	.1	2.0	3.0	1.0	.0	.0	.0	6.1
WNW	.0	1.0	1.0	1.0	.0	.0	.0	3.0
NW	.1	2.0	5.0	1.0	.0	.0	.0	8.1
NNW	.1	2.0	4.0	1.0	.0	.0	.0	7.1
TOTAL	1.0	37.0	81.0	20.0	2.0	.0	.0	141.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: D

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.8	40.0	102.0	52.0	5.0	.0	.0	199.8
NNE	.3	17.0	78.0	43.0	1.0	.0	.0	139.3
NE	.5	24.0	9.0	.0	.0	.0	.0	33.5
ENE	.5	26.0	2.0	.0	.0	.0	.0	28.5
E	.4	20.0	2.0	.0	.0	.0	.0	22.4
ESE	.6	30.0	3.0	.0	.0	.0	.0	33.6
SE	.6	32.0	1.0	.0	.0	.0	.0	33.6
SSE	.8	41.0	54.0	4.0	.0	.0	.0	99.8
S	.6	30.0	50.0	4.0	.0	.0	.0	84.6
SSW	.3	14.0	12.0	3.0	.0	.0	.0	29.3
SW	.3	14.0	6.0	2.0	.0	.0	.0	22.3
WSW	.1	3.0	6.0	.0	.0	.0	.0	9.1
W	.1	3.0	11.0	2.0	.0	.0	.0	16.1
WNW	.1	3.0	5.0	3.0	.0	.0	.0	11.1
NW	.2	8.0	10.0	11.0	.0	.0	.0	29.2
NNW	.3	14.0	20.0	8.0	.0	.0	.0	42.3
TOTAL	6.0	319.0	371.0	132.0	6.0	.0	.0	834.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: E

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	1.6	18.0	15.0	1.0	.0	.0	.0	35.6
NNE	3.9	44.0	72.0	1.0	.0	.0	.0	120.9
NE	1.4	16.0	10.0	.0	.0	.0	.0	27.4
ENE	1.2	14.0	1.0	.0	.0	.0	.0	16.2
E	1.5	17.0	.0	.0	.0	.0	.0	18.5
ESE	1.9	21.0	.0	.0	.0	.0	.0	22.9
SE	1.9	21.0	.0	.0	.0	.0	.0	22.9
SSE	3.5	39.0	15.0	.0	.0	.0	.0	57.5
S	3.5	39.0	21.0	3.0	.0	.0	.0	66.5
SSW	2.0	22.0	6.0	.0	.0	.0	.0	30.0
SW	.8	9.0	1.0	.0	.0	.0	.0	10.8
WSW	.8	9.0	3.0	.0	.0	.0	.0	12.8
W	.5	6.0	11.0	.0	.0	.0	.0	17.5
WNW	.3	3.0	10.0	5.0	.0	.0	.0	18.3
NW	.4	5.0	8.0	.0	.0	.0	.0	13.4
NNW	.8	9.0	7.0	1.0	.0	.0	.0	17.8
TOTAL	26.0	292.0	180.0	11.0	.0	.0	.0	509.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: F

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	3.9	17.0	.0	.0	.0	.0	.0	20.9
NNE	9.6	42.0	28.0	.0	.0	.0	.0	79.6
NE	3.2	14.0	6.0	.0	.0	.0	.0	23.2
ENE	1.6	7.0	1.0	.0	.0	.0	.0	9.6
E	1.1	5.0	.0	.0	.0	.0	.0	6.1
ESE	.9	4.0	.0	.0	.0	.0	.0	4.9
SE	.2	1.0	.0	.0	.0	.0	.0	1.2
SSE	3.0	13.0	.0	.0	.0	.0	.0	16.0
S	.7	3.0	.0	.0	.0	.0	.0	3.7
SSW	2.1	9.0	.0	.0	.0	.0	.0	11.1
SW	.9	4.0	.0	.0	.0	.0	.0	4.9
WSW	.5	2.0	.0	.0	.0	.0	.0	2.5
W	.2	1.0	.0	.0	.0	.0	.0	1.2
WNW	.9	4.0	.0	.0	.0	.0	.0	4.9
NW	.2	1.0	.0	.0	.0	.0	.0	1.2
NNW	.9	4.0	.0	.0	.0	.0	.0	4.9
TOTAL	30.0	131.0	35.0	.0	.0	.0	.0	196.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: G

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.5	6.0	.0	.0	.0	.0	.0	6.5
NNE	.9	12.0	1.0	.0	.0	.0	.0	13.9
NE	.1	1.0	1.0	.0	.0	.0	.0	2.1
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.2	2.0	.0	.0	.0	.0	.0	2.2
SSE	.0	.0	.0	.0	.0	.0	.0	.0
S	.1	1.0	.0	.0	.0	.0	.0	1.1
SSW	.1	1.0	.0	.0	.0	.0	.0	1.1
SW	.0	.0	.0	.0	.0	.0	.0	.0
WSW	.0	.0	.0	.0	.0	.0	.0	.0
W	.0	.0	.0	.0	.0	.0	.0	.0
WNW	.1	1.0	.0	.0	.0	.0	.0	1.1
NW	.1	1.0	.0	.0	.0	.0	.0	1.1
NNW	.1	1.0	.0	.0	.0	.0	.0	1.1
TOTAL	2.0	26.0	2.0	.0	.0	.0	.0	30.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - APR/MAY/JUN 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 4/ 1/ 0] TO [1999/ 6/30/23]

PASQUILL STABILITY: ALL

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	6.8	86.0	196.0	102.0	7.0	.0	.0	397.8
NNE	14.9	118.0	188.0	47.0	2.0	.0	.0	369.9
NE	5.2	57.0	27.0	1.0	.0	.0	.0	90.2
ENE	3.4	49.0	5.0	2.0	.0	.0	.0	59.4
E	3.1	45.0	3.0	.0	.0	.0	.0	51.1
ESE	3.5	61.0	4.0	.0	.0	.0	.0	68.5
SE	2.9	62.0	5.0	.0	.0	.0	.0	69.9
SSE	7.3	101.0	126.0	12.0	.0	.0	.0	246.3
S	5.0	82.0	136.0	49.0	.0	.0	.0	272.0
SSW	4.5	52.0	40.0	12.0	.0	.0	.0	108.5
SW	2.0	30.0	19.0	6.0	.0	.0	.0	57.0
WSW	1.3	18.0	30.0	1.0	.0	.0	.0	50.3
W	.9	12.0	53.0	9.0	.0	.0	.0	74.9
WNW	1.3	13.0	33.0	17.0	.0	.0	.0	64.3
NW	1.0	17.0	33.0	32.0	.0	.0	.0	83.0
NNW	2.1	31.0	66.0	21.0	.0	.0	.0	120.1
TOTAL	65.0	834.0	964.0	311.0	9.0	.0	.0	2183.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2183

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: A

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	.0	44.0	5.0	1.0	1.0	.0	51.0
NNE	.0	1.0	5.0	1.0	.0	1.0	.0	8.0
NE	.0	1.0	.0	.0	.0	.0	.0	1.0
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	3.0	.0	.0	.0	.0	.0	3.0
SE	.0	1.0	1.0	.0	.0	.0	.0	2.0
SSE	.0	3.0	40.0	6.0	.0	.0	.0	49.0
S	.0	3.0	46.0	5.0	.0	.0	.0	54.0
SSW	.0	2.0	11.0	1.0	.0	.0	.0	14.0
SW	.0	.0	21.0	.0	.0	.0	.0	21.0
WSW	.0	.0	16.0	.0	.0	.0	.0	16.0
W	.0	.0	19.0	.0	.0	.0	.0	19.0
WNW	.0	1.0	26.0	1.0	.0	.0	.0	28.0
NW	.0	.0	27.0	2.0	.0	.0	.0	29.0
NNW	.0	.0	25.0	4.0	.0	.0	.0	29.0
TOTAL	.0	15.0	281.0	25.0	1.0	2.0	.0	324.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: B

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	.0	23.0	4.0	.0	2.0	.0	29.0
NNE	.0	.0	8.0	5.0	4.0	.0	.0	17.0
NE	.0	.0	1.0	.0	.0	.0	.0	1.0
ENE	.0	.0	1.0	.0	.0	.0	.0	1.0
E	.0	.0	3.0	.0	.0	.0	.0	3.0
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	6.0	13.0	.0	.0	.0	.0	19.0
S	.0	6.0	35.0	3.0	.0	.0	.0	44.0
SSW	.0	2.0	4.0	.0	.0	.0	.0	6.0
SW	.0	1.0	4.0	.0	.0	.0	.0	5.0
WSW	.0	.0	1.0	.0	.0	.0	.0	1.0
W	.0	.0	4.0	.0	.0	.0	.0	4.0
WNW	.0	.0	1.0	.0	.0	.0	.0	1.0
NW	.0	2.0	1.0	1.0	.0	.0	.0	4.0
NNW	.0	1.0	4.0	.0	.0	.0	.0	5.0
TOTAL	.0	18.0	103.0	13.0	4.0	2.0	.0	140.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: C

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	2.0	21.0	4.0	.0	.0	.0	27.0
NNE	.0	1.0	7.0	4.0	.0	.0	.0	12.0
NE	.0	1.0	8.0	.0	.0	.0	.0	9.0
ENE	.0	.0	4.0	.0	.0	.0	.0	4.0
E	.0	.0	1.0	.0	.0	.0	.0	1.0
ESE	.0	2.0	1.0	.0	.0	.0	.0	3.0
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	6.0	19.0	1.0	.0	.0	.0	26.0
S	.0	5.0	20.0	1.0	.0	.0	.0	26.0
SSW	.0	1.0	4.0	.0	.0	.0	.0	5.0
SW	.0	1.0	.0	.0	.0	.0	.0	1.0
WSW	.0	.0	4.0	.0	.0	.0	.0	4.0
W	.0	.0	1.0	.0	.0	.0	.0	1.0
WNW	.0	1.0	2.0	.0	.0	.0	.0	3.0
NW	.0	1.0	1.0	1.0	.0	.0	.0	3.0
NNW	.0	.0	2.0	.0	.0	.0	.0	2.0
TOTAL	.0	21.0	95.0	11.0	.0	.0	.0	127.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: D

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.6	23.0	110.0	31.0	3.0	1.0	.0	168.6
NNE	1.1	45.0	105.0	23.0	2.0	.0	.0	176.1
NE	1.0	39.0	15.0	.0	.0	.0	.0	55.0
ENE	.3	13.0	10.0	.0	.0	.0	.0	23.3
E	.6	26.0	1.0	.0	.0	.0	.0	27.6
ESE	.2	8.0	1.0	.0	.0	.0	.0	9.2
SE	.7	27.0	.0	.0	.0	.0	.0	27.7
SSE	1.0	41.0	58.0	3.0	.0	.0	.0	103.0
S	.5	22.0	55.0	22.0	.0	.0	.0	99.5
SSW	.3	14.0	18.0	1.0	.0	.0	.0	33.3
SW	.1	5.0	7.0	1.0	.0	.0	.0	13.1
WSW	.1	5.0	8.0	.0	.0	.0	.0	13.1
W	.0	2.0	4.0	.0	.0	.0	.0	6.0
WNW	.0	2.0	1.0	1.0	.0	.0	.0	4.0
NW	.0	2.0	8.0	2.0	.0	.0	.0	12.0
NNW	.2	7.0	19.0	2.0	.0	.0	.0	28.2
TOTAL	7.0	281.0	420.0	86.0	5.0	1.0	.0	800.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: E

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	1.4	15.0	12.0	.0	.0	.0	.0	28.4
NNE	6.6	73.0	59.0	2.0	.0	.0	.0	140.6
NE	4.3	47.0	11.0	.0	.0	.0	.0	62.3
ENE	2.3	25.0	2.0	.0	.0	.0	.0	29.3
E	2.2	24.0	.0	.0	.0	.0	.0	26.2
ESE	2.9	32.0	.0	.0	.0	.0	.0	34.9
SE	2.9	32.0	.0	.0	.0	.0	.0	34.9
SSE	4.3	48.0	14.0	1.0	.0	.0	.0	67.3
S	3.1	34.0	40.0	3.0	.0	.0	.0	80.1
SSW	3.3	37.0	5.0	.0	.0	.0	.0	45.3
SW	.7	8.0	1.0	.0	.0	.0	.0	9.7
WSW	.7	8.0	3.0	1.0	.0	.0	.0	12.7
W	.3	3.0	7.0	.0	.0	.0	.0	10.3
WNW	.3	3.0	4.0	1.0	.0	.0	.0	8.3
NW	.3	3.0	6.0	1.0	.0	.0	.0	10.3
NNW	.5	6.0	3.0	1.0	.0	.0	.0	10.5
TOTAL	36.0	398.0	167.0	10.0	.0	.0	.0	611.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: F

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	1.1	15.0	.0	.0	.0	.0	.0	16.1
NNE	3.5	48.0	25.0	.0	.0	.0	.0	76.5
NE	1.7	24.0	8.0	.0	.0	.0	.0	33.7
ENE	.4	5.0	.0	.0	.0	.0	.0	5.4
E	.5	7.0	.0	.0	.0	.0	.0	7.5
ESE	.2	3.0	.0	.0	.0	.0	.0	3.2
SE	.3	4.0	.0	.0	.0	.0	.0	4.3
SSE	.5	7.0	.0	.0	.0	.0	.0	7.5
S	.8	11.0	.0	.0	.0	.0	.0	11.8
SSW	.5	7.0	.0	.0	.0	.0	.0	7.5
SW	.5	7.0	.0	.0	.0	.0	.0	7.5
WSW	.1	2.0	.0	.0	.0	.0	.0	2.1
W	.2	3.0	.0	.0	.0	.0	.0	3.2
WNW	.1	1.0	.0	.0	.0	.0	.0	1.1
NW	.3	4.0	.0	.0	.0	.0	.0	4.3
NNW	.2	3.0	.0	.0	.0	.0	.0	3.2
TOTAL	11.0	151.0	33.0	.0	.0	.0	.0	195.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: G

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.4	3.0	.0	.0	.0	.0	.0	3.4
NNE	.1	1.0	.0	.0	.0	.0	.0	1.1
NE	.1	1.0	1.0	.0	.0	.0	.0	2.1
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.1	1.0	.0	.0	.0	.0	.0	1.1
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	.0	.0	.0	.0	.0	.0	.0
S	.0	.0	.0	.0	.0	.0	.0	.0
SSW	.0	.0	.0	.0	.0	.0	.0	.0
SW	.0	.0	.0	.0	.0	.0	.0	.0
WSW	.0	.0	.0	.0	.0	.0	.0	.0
W	.0	.0	.0	.0	.0	.0	.0	.0
WNW	.0	.0	.0	.0	.0	.0	.0	.0
NW	.0	.0	.0	.0	.0	.0	.0	.0
NNW	.3	2.0	.0	.0	.0	.0	.0	2.3
TOTAL	1.0	8.0	1.0	.0	.0	.0	.0	10.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - JUL/AUG/SEP 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/ 7/ 1/ 0] TO [1999/ 9/30/23]

PASQUILL STABILITY: ALL

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	3.4	58.0	210.0	44.0	4.0	4.0	.0	323.4
NNE	11.3	169.0	209.0	35.0	6.0	1.0	.0	431.3
NE	7.1	113.0	44.0	.0	.0	.0	.0	164.1
ENE	2.9	43.0	17.0	.0	.0	.0	.0	62.9
E	3.5	58.0	5.0	.0	.0	.0	.0	66.5
ESE	3.3	48.0	2.0	.0	.0	.0	.0	53.3
SE	3.9	64.0	1.0	.0	.0	.0	.0	68.9
SSE	5.9	111.0	144.0	11.0	.0	.0	.0	271.9
S	4.4	81.0	196.0	34.0	.0	.0	.0	315.4
SSW	4.2	63.0	42.0	2.0	.0	.0	.0	111.2
SW	1.4	22.0	33.0	1.0	.0	.0	.0	57.4
WSW	1.0	15.0	32.0	1.0	.0	.0	.0	49.0
W	.5	8.0	35.0	.0	.0	.0	.0	43.5
WNW	.4	8.0	34.0	3.0	.0	.0	.0	45.4
NW	.6	12.0	43.0	7.0	.0	.0	.0	62.6
NNW	1.2	19.0	53.0	7.0	.0	.0	.0	80.2
TOTAL	55.0	892.0	1100.0	145.0	10.0	5.0	.0	2207.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 1
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2207

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: A

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	.0	2.0	4.0	1.0	.0	.0	7.0
NNE	.0	.0	.0	3.0	1.0	.0	.0	4.0
NE	.0	.0	.0	.0	.0	.0	.0	.0
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	.0	20.0	.0	.0	.0	.0	20.0
S	.0	4.0	8.0	5.0	.0	.0	.0	17.0
SSW	.0	3.0	3.0	1.0	.0	.0	.0	7.0
SW	.0	2.0	2.0	1.0	.0	.0	.0	5.0
WSW	.0	1.0	.0	1.0	.0	.0	.0	2.0
W	.0	1.0	5.0	3.0	.0	.0	.0	9.0
WNW	.0	1.0	7.0	1.0	.0	.0	.0	9.0
NW	.0	.0	8.0	3.0	.0	.0	.0	11.0
NNW	.0	.0	3.0	6.0	.0	.0	.0	9.0
TOTAL	.0	12.0	58.0	28.0	2.0	.0	.0	100.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: B

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	.0	10.0	3.0	5.0	.0	.0	18.0
NNE	.0	.0	.0	4.0	1.0	.0	.0	5.0
NE	.0	.0	.0	.0	.0	.0	.0	.0
ENE	.0	.0	.0	.0	.0	.0	.0	.0
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	5.0	10.0	1.0	.0	.0	.0	16.0
S	.0	2.0	12.0	6.0	.0	.0	.0	20.0
SSW	.0	3.0	4.0	.0	.0	.0	.0	7.0
SW	.0	.0	4.0	.0	.0	.0	.0	4.0
WSW	.0	.0	3.0	1.0	.0	.0	.0	4.0
W	.0	.0	7.0	1.0	.0	.0	.0	8.0
WNW	.0	.0	8.0	2.0	.0	.0	.0	10.0
NW	.0	.0	5.0	4.0	.0	.0	.0	9.0
NNW	.0	.0	5.0	2.0	.0	.0	.0	7.0
TOTAL	.0	10.0	68.0	24.0	6.0	.0	.0	108.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: C

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	.0	13.0	6.0	4.0	.0	.0	23.0
NNE	.0	1.0	4.0	1.0	.0	.0	.0	6.0
NE	.0	.0	.0	.0	.0	.0	.0	.0
ENE	.0	1.0	1.0	.0	.0	.0	.0	2.0
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.0	1.0	.0	.0	.0	.0	.0	1.0
SSE	.0	3.0	7.0	.0	.0	.0	.0	10.0
S	.0	2.0	18.0	7.0	.0	.0	.0	27.0
SSW	.0	1.0	6.0	.0	.0	.0	.0	7.0
SW	.0	3.0	3.0	1.0	.0	.0	.0	7.0
WSW	.0	1.0	4.0	1.0	.0	.0	.0	6.0
W	.0	.0	4.0	1.0	.0	.0	.0	5.0
WNW	.0	.0	8.0	1.0	.0	.0	.0	9.0
NW	.0	.0	3.0	2.0	1.0	.0	.0	6.0
NNW	.0	.0	6.0	2.0	.0	.0	.0	8.0
TOTAL	.0	13.0	77.0	22.0	5.0	.0	.0	117.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: D

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.0	24.0	111.0	64.0	6.0	.0	.0	205.0
NNE	.0	29.0	99.0	28.0	8.0	.0	.0	164.0
NE	.0	8.0	20.0	.0	.0	.0	.0	28.0
ENE	.0	6.0	2.0	.0	.0	.0	.0	8.0
E	.0	2.0	.0	.0	.0	.0	.0	2.0
ESE	.0	1.0	.0	.0	.0	.0	.0	1.0
SE	.0	2.0	.0	.0	.0	.0	.0	2.0
SSE	.0	13.0	26.0	5.0	1.0	.0	.0	45.0
S	.0	18.0	59.0	31.0	.0	.0	.0	108.0
SSW	.0	13.0	19.0	1.0	.0	.0	.0	33.0
SW	.0	6.0	12.0	1.0	.0	.0	.0	19.0
WSW	.0	4.0	16.0	2.0	.0	.0	.0	22.0
W	.0	3.0	43.0	3.0	.0	.0	.0	49.0
WNW	.0	5.0	48.0	13.0	1.0	.0	.0	67.0
NW	.0	2.0	38.0	19.0	4.0	.0	.0	63.0
NNW	.0	10.0	56.0	24.0	1.0	.0	.0	91.0
TOTAL	.0	146.0	549.0	191.0	21.0	.0	.0	907.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: E

WIND FROM	WIND SPEED (MPH) CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.4	23.0	14.0	.0	.0	.0	.0	37.4
NNE	.7	39.0	33.0	.0	.0	.0	.0	72.7
NE	.8	46.0	37.0	.0	.0	.0	.0	83.8
ENE	.3	16.0	3.0	.0	.0	.0	.0	19.3
E	.2	11.0	.0	.0	.0	.0	.0	11.2
ESE	.1	8.0	1.0	.0	.0	.0	.0	9.1
SE	.2	13.0	.0	.0	.0	.0	.0	13.2
SSE	.5	28.0	19.0	10.0	1.0	.0	.0	58.5
S	.8	47.0	69.0	17.0	.0	.0	.0	133.8
SSW	.6	36.0	22.0	2.0	.0	.0	.0	60.6
SW	.4	24.0	8.0	.0	.0	.0	.0	32.4
WSW	.3	18.0	10.0	.0	.0	.0	.0	28.3
W	.2	14.0	17.0	2.0	.0	.0	.0	33.2
WNW	.2	11.0	13.0	.0	.0	.0	.0	24.2
NW	.2	9.0	9.0	.0	.0	.0	.0	18.2
NNW	.1	7.0	10.0	.0	.0	.0	.0	17.1
TOTAL	6.0	350.0	265.0	31.0	1.0	.0	.0	653.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE) 10.00
TEMPERATURE SENSOR SEPARATION (METERS) 50.90

MISSING OBS. DURING THIS PERIOD (ALL STABILITIES) 87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES) 2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: F

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.3	23.0	1.0	.0	.0	.0	.0	24.3
NNE	.7	64.0	14.0	.0	.0	.0	.0	78.7
NE	.2	17.0	14.0	.0	.0	.0	.0	31.2
ENE	.1	11.0	1.0	.0	.0	.0	.0	12.1
E	.1	6.0	1.0	.0	.0	.0	.0	7.1
ESE	.0	2.0	1.0	.0	.0	.0	.0	3.0
SE	.1	7.0	.0	.0	.0	.0	.0	7.1
SSE	.1	8.0	.0	.0	.0	.0	.0	8.1
S	.1	8.0	3.0	.0	.0	.0	.0	11.1
SSW	.1	10.0	.0	.0	.0	.0	.0	10.1
SW	.1	5.0	.0	.0	.0	.0	.0	5.1
WSW	.0	2.0	.0	.0	.0	.0	.0	2.0
W	.0	2.0	.0	.0	.0	.0	.0	2.0
WNW	.0	1.0	.0	.0	.0	.0	.0	1.0
NW	.0	1.0	.0	.0	.0	.0	.0	1.0
NNW	.1	8.0	.0	.0	.0	.0	.0	8.1
TOTAL	2.0	175.0	35.0	.0	.0	.0	.0	212.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: G

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	.4	7.0	.0	.0	.0	.0	.0	7.4
NNE	.3	6.0	2.0	.0	.0	.0	.0	8.3
NE	.1	2.0	3.0	.0	.0	.0	.0	5.1
ENE	.1	1.0	.0	.0	.0	.0	.0	1.1
E	.0	.0	.0	.0	.0	.0	.0	.0
ESE	.0	.0	.0	.0	.0	.0	.0	.0
SE	.0	.0	.0	.0	.0	.0	.0	.0
SSE	.0	.0	.0	.0	.0	.0	.0	.0
S	.0	.0	.0	.0	.0	.0	.0	.0
SSW	.1	1.0	.0	.0	.0	.0	.0	1.1
SW	.1	1.0	.0	.0	.0	.0	.0	1.1
WSW	.0	.0	.0	.0	.0	.0	.0	.0
W	.0	.0	.0	.0	.0	.0	.0	.0
WNW	.0	.0	.0	.0	.0	.0	.0	.0
NW	.0	.0	.0	.0	.0	.0	.0	.0
NNW	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL	1.0	18.0	5.0	.0	.0	.0	.0	24.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

INDIAN POINT (UNITS 2 & 3) - JOINT FREQUENCY DISTRIBUTIONS - OCT/NOV/DEC 1999

BASIC METEOROLOGICAL OBSERVATIONS AT 10.0 (M)
FOR PERIOD [Year/Month/Day/Hour]
[1999/10/ 1/ 0] TO [1999/12/31/23]

PASQUILL STABILITY: ALL

	WIND SPEED (MPH)							
WIND FROM	CALMS	.60 - 3.50	3.50 - 7.50	7.50 - 12.50	12.50 - 18.50	18.50 - 24.00	24.00 - 80.00	TOTAL
N	1.0	77.0	151.0	77.0	16.0	.0	.0	322.0
NNE	1.7	139.0	152.0	36.0	10.0	.0	.0	338.7
NE	1.1	73.0	74.0	.0	.0	.0	.0	148.1
ENE	.5	35.0	7.0	.0	.0	.0	.0	42.5
E	.3	19.0	1.0	.0	.0	.0	.0	20.3
ESE	.2	11.0	2.0	.0	.0	.0	.0	13.2
SE	.3	23.0	.0	.0	.0	.0	.0	23.3
SSE	.6	57.0	82.0	16.0	2.0	.0	.0	157.6
S	.9	81.0	169.0	66.0	.0	.0	.0	316.9
SSW	.8	67.0	54.0	4.0	.0	.0	.0	125.8
SW	.5	41.0	29.0	3.0	.0	.0	.0	73.5
WSW	.3	26.0	33.0	5.0	.0	.0	.0	64.3
W	.3	20.0	76.0	10.0	.0	.0	.0	106.3
WNW	.2	18.0	84.0	17.0	1.0	.0	.0	120.2
NW	.2	12.0	63.0	28.0	5.0	.0	.0	108.2
NNW	.2	25.0	80.0	34.0	1.0	.0	.0	140.2
TOTAL	9.0	724.0	1057.0	296.0	35.0	.0	.0	2121.0

DATA MEASUREMENT HEIGHT (M ABOVE GRADE)	10.00
TEMPERATURE SENSOR SEPARATION (METERS)	50.90
MISSING OBS. DURING THIS PERIOD (ALL STABILITIES)	87
VALID OBSER. DURING THIS PERIOD (ALL STABILITIES)	2121

NOTE: CALMS WERE DISTRIBUTED IN PROPORTION TO THE FREQUENCY OF WINDS IN THE LOWEST WIND SPEED GROUP WITH NON-ZERO ENTRIES IN EACH STABILITY.

Indian Point 3

EFFLUENT AND WASTE DISPOSAL

SEMI-ANNUAL REPORT

G. OFFSITE DOSE CALCULATION MANUAL,
PROCESS CONTROL PROGRAM, OR LAND USE CENSUS LOCATION CHANGES

THIRD AND FOURTH QUARTERS, 1999

The ODCM, REMP, and the Process Control Program were updated during this reporting period as per the following Justification Packages.

No new locations for dose calculations and/or environmental monitoring were identified by the land use census.

ODCM Revision 12 Justification Package
Effective Date: October 25, 1999

item 1

OBJECTIVE:

Modify the description of the calculated Radiation Monitor setpoints in Section 1.

DESCRIPTION OF CHANGES:

- Inserted the word "Maximum" in the description of variable (S), in Sections 1.2.1.2 and 1.2.2.2.
- Replaced the Alert setpoint adjustment factor from 1.25 to a variable "M" in section 1.2.2.3. Added a sentence to the note following this step to identify that the factor is applied and defined in lower tier documents.

IMPACT:

None. Lower tier documents already in place have instructions to use this calculation as a bounding limit.

JUSTIFICATION:

The inserted word "Maximum" in the description of variable (S) identifies this calculation to be a bounding limit, not necessarily the value used. This method is in keeping with Technical Specifications, Appendix B, NuReg 0133, and Reg Guide 1.109 for effluent management. Lower tier documents use the calculated alarm setpoint as a bounding limit. Actual setpoints are routinely more conservative. The conservative factor applied to the Alert setpoint is also identified in lower tier documents.

item 2

OBJECTIVE:

Updated the reference to Rad Monitors on Table 1-1, to include the new units and ranges for a recently completed modification.

DESCRIPTION OF CHANGES:

These monitors were upgraded to digital readout, eliminating the previous type which read out in "cpm". The new monitor ranges and units were updated in the table as follows:

Monitor	Range	units
R-14	1E-6 to 1E-1	uCi/cc
R-17A	1E-6 to 1E-1	uCi/ml
R-17B	1E-6 to 1E-1	uCi/ml

R-17A and R-17B (Component Cooling System Monitors) were added to this table.

IMPACT:

None

JUSTIFICATION:

These monitor placements and descriptions do not change. They were upgraded to a digital format.

R-17A and R-17B (Component Cooling System Monitors) were added to this table due to their potential use as Technical Specification or Effluent monitors in a primary to component cooling leak which may eventually discharge to the environment.

item 3

OBJECTIVE:

Identify and describe the back-up Spent Fuel Pool Heat Exchanger secondary system as a potential release pathway per Generic Letter 80-10 in Section 2 of the ODCM.

DESCRIPTION OF CHANGES:

Added words to section 2.1.18 to specifically identify examples of systems effected by Generic Letter 80-10, including the SFP back-up heat exchanger secondary system (Modification 98-3-019 SFPC). Also added the sampling requirement when this system is in use.

IMPACT:

None. Lower tier documents have been updated to describe sampling schedules when this system is in service, per the Generic Letter.

JUSTIFICATION:

This system was installed to provide additional cooling for the SFP. Since the secondary cooling loop has a remote potential for contamination, the criteria in Generic Letter 80-10 already located in this section was applied to this system.

item 4

OBJECTIVE:

Include in the ODCM a discussion of Hafnium isotopes and their potential for identification in Reactor Coolant consistent with cycle 11 core reload design. Identify the method of offsite dose quantification should isotopes be identified in waste streams.

DESCRIPTION OF CHANGES:

Added Section 2.1.20 to identify the addition of Hafnium control rods for cycle 11 per Modificaton 98-3-138. In the absence of specific dose factors for Hafnium, factors for Zirconium are used. Dose calculations for Hafnium are to be performed per Section 2.5 and manually added to totals, if required.

Unclad Hafnium is not expected to result in rod swelling problems that were identified at plants (eg, Callaway) that had used clad Hafnium. Nonetheless, the presence of approximately eight Hafnium assemblies is expected to generate some Hafnium isotopes in Reactor Coolant. Reactor Engineering and Chemists from Callaway identified Hf-181 (T1/2 = 42.4 days) as the only significant isotope identified. As a result, the possibility of the presence of Hafnium isotopes in waste streams was also considered.

No dose factors are provided in Reg Guide 1.109 for Hafnium. However, bioaccumulation factors and stable element transfer coefficients suggested in the original draft Reg Guide 1.109 published in 1976 indicate factors consistent with those of Zirconium. Furthermore, ICRP 30, Volume 6, (published in 1981) directs the use of Zirconium factors, due to the absence of data for Hafnium. Should effluent dose calculations for Hafnium become necessary, the backup calculation methods outlined in Section 2.5 will be employed to determine the offsite dose. This data will then be manually added to other totals.

IMPACT:

It is expected that the dose consequence of this change will be an addition of less than 5% of the reportable dose via liquid pathways and no significant increase in airborne pathways.

JUSTIFICATION:

Since site-specific dose factors for Hafnium are not provided in source documents for offsite dose calculations (NuReg 0133 and Reg Guide 1.109), a timely and direct method is required in the absence of site-specific data. Due to the chemical and physical similarities of these elements, the use of Zirconium data as directed in ICRP 30 and discussed above is justifiable.

item 5

OBJECTIVE:

Correct typographical errors in Sections 3.5.1 and 3.5.4 referencing Table 3-11, which should be referencing Table 3-9.

DESCRIPTION OF CHANGES:

The Table references were corrected to identify Table 3-9.

IMPACT:

None.

JUSTIFICATION:

Typographical correction only.

item 6

OBJECTIVE:

Correct an error in a measured distance to the nearest resident in Table 3-9 for the ESE direction.

DESCRIPTION OF CHANGES:

The ESE direction distance to the nearest residence was corrected to 704 meters, replacing the incorrectly listed 1070 meters.

IMPACT:

None. Dose calculations for the ODCM are performed per Reg Guide 1.109 and NuReg 0133 and use "Maximum Individual" methodology. ODCM dose calculations for the nearest resident are performed in the worst case meteorological sectors, which are the South and South-South-West sectors. Therefore, there is no impact on previous or current offsite dose calculations.

JUSTIFICATION:

The incorrect distance was identified during an audit comparing the ODCM and REMP. The correction to the ODCM was made for consistency between these programs.

item 7

OBJECTIVE:

Update Figure 4-2 to comply with the updated REMP guidance.

DESCRIPTION OF CHANGES:

Modified the indicated position of direct radiation sample location #24 and added location #41 to Figure 4-2.

IMPACT:

None.

JUSTIFICATION:

This update is in keeping with a REMP upgrade and included in the ODCM per Technical Specifications. DR #24 was relocated from Croton Point to Warren Road, consistent with the range of Table 2.7-1 of Technical Specifications. The Croton Point direct radiation location continues to exist, now denoted as DR #41, due to the value in continuing the historical record with many years of data.

item 8

OBJECTIVE:

Update Table 4.1 to comply with the updated REMP guidance.

DESCRIPTION OF CHANGES:

Updated several specific names and exact locations on Table 4.1 for greater accuracy and consistency with REMP procedures. These are administrative changes only. Two physical changes are included:

1) A new location was added for DR #24 at Warren Road.

2) DR #24's old location was maintained, but identified as new DR #41.

Also added is a note identifying the fact that the distances in this Table are measured from the superheater stack. This was necessary to preclude confusion due to different points of origin for the two units on site.

IMPACT:

None.

JUSTIFICATION:

As a result of the updated REMP, data is now being obtained in location #24, as well as the old location, now identified as # 41. This updated REMP guidance is included in the ODCM as per Technical Specifications.

Process Control Program, Revision 5
Effective Date: December 14, 1999

This report summarizes the changes incorporated into Revision 5 of the Solid Radioactive Waste Process Control program (PCP). Each change is listed with a justification for the change and it's impact on the process control program. When the impact is described as "None" it is to be interpreted as having no impact on the process control program or compliance with regulatory requirements.

1. a. Description
Deleted the definition for "density correction" from section 5, Definitions.

b. Justification
This term is not used in this document.

c. Impact
None.

2. a. Description
Updated the reference to the applicable QA procedure in section 9.4,Quality Control for sampling and Classification.

b. Justification
The requirements of Quality Assurance Procedure 18.1 have been incorporated into QA-AD-03.

c. Impact
None.

3. a. Description
Revised Section 5 and Section 9 to refer to the applicable section of 10 CFR 20.

b. Justification
Steps 5.1.21 and 9.4.2 incorrectly referred to Appendix F of 10 CFR 20. The Correct reference is Appendix G of 10 CFR 20.

c. Impact
None.