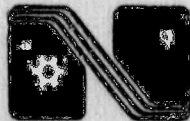


NEBRASKA PUBLIC POWER DISTRICT

**COOPER NUCLEAR STATION  
SEMI-ANNUAL OPERATING REPORT  
RADIOACTIVE EFFLUENTS  
DOCKET NUMBER 50-298**

January 1, 1990 through June 30, 1990



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## Nebraska Public Power District

GENERAL OFFICE  
P.O. BOX 499, COLUMBUS, NEBRASKA 68602-0499  
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NLS9000350

August 22, 1990

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

Subject: Semi-Annual Radioactive Material Release Report  
Cooper Nuclear Station  
NRC Docket No. 50-298, DPR-46

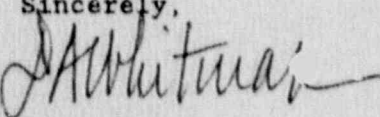
Gentlemen:

In accordance with Specification 6.5.1.F of the Cooper Nuclear Station Technical Specifications, the Nebraska Public Power District submits the Cooper Nuclear Station Semi-Annual Radioactive Material Release Report for the period January 1, 1990 through June 30, 1990.

In accordance with 10 CFR 50.4(b)(1), we are enclosing one signed original of the report for your use, one copy to the Regional Office, and one copy to the NRC Resident Inspector.

Should you have any questions or comments regarding this report, please contact my office.

Sincerely,

*for*   
G. A. Trevors  
Senior Staff Advisor  
Nuclear Power Group

GAT/jms:gl  
Enclosures

cc: U.S. Nuclear Regulatory Commission  
Regional Office - Region IV

NRC Senior Resident Inspector  
Cooper Nuclear Station

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*TEA 8*  
*11*



NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

SEMIANNUAL OPERATING REPORT

RADIOACTIVE EFFLUENTS

January 1, 1990, through June 30, 1990

USNRC Docket 50-298

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Appendix B: Meteorology

Appendix C: Dose Calculations

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## INTRODUCTION

This report summarizes meteorological data and doses from radioactive effluents for the Cooper Nuclear Station for the period January through June 1990. The data presented meet the reporting requirements of Regulatory Guide 1.21 of the U.S. Nuclear Regulatory Commission (Revision 1, June 1974).

The report is organized into three parts. Appendix A presents the effluent and waste disposal source term data. Appendix B presents a summary of onsite meteorological data for the report period, including atmospheric diffusion estimates and a description of the atmospheric diffusion model. Appendix C presents the doses from liquid and gaseous radioactive effluents. Descriptions of the dose calculation models are also included.



APPENDIX A  
SOURCE TERMS  
EFFLUENT AND WASTE DISPOSAL REPORTS

EFFLUENT AND WASTE DISPOSAL  
January - June, 1990

Cooper Nuclear Station effluent and waste disposal data are presented in the format prescribed by Regulatory Guide 1.21. Meteorological data required by Table 4A&B of Regulatory Guide 1.21 is included in the Meteorological Section of the Semiannual Radioactive Material Release Report - Radioactive Effluents.  
Facility Cooper Nuclear Station License DPR-46

A. Regulatory Limits

1. Gaseous waste effluents

- a. The dose rates due to radioactive materials released in gaseous effluents offsite shall be limited to the following:
  1. Noble Gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin.
  2. I-131, I-133, tritium, and all ~~beta~~ radionuclides in particulate form with half-lives greater than or equal to 8 days: Less than or equal to 1500 mrem/yr to any organ.
- b. The air dose due to noble gases released in gaseous effluents offsite shall be limited to the following:
  1. During any calendar quarter: Less than or equal to 5 mrad from gamma radiation and less than or equal to 10 mrad from beta radiation.
  2. During any calendar year: Less than or equal to 10 mrad from gamma radiation and less than or equal to 20 mrad from beta radiation.
- c. The dose to a member of the public due to I-131, I-133, and radioactive materials in particulate form with half-lives greater than 8 days in gaseous effluents offsite shall be limited to the following:
  1. During any calendar quarter: Less than or equal to 7.5 mrem to any organ.
  2. During any calendar year: Less than or equal to 15 mrem to any organ.

2. Liquid waste effluents

- a. The concentration of radioactive material in water offsite due to radioactive liquid effluents shall not exceed the concentration specified in 10 CFR Part 20.106 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall not exceed  $2 \times 10^{-4}$   $\mu\text{Ci/ml}$  total activity.

- b. The dose to a member of the public due to radioactive material in liquid effluents offsite shall be limited to the following:
  - 1. During any calendar quarter: Less than or equal to 1.5 mrem to the total body and less than or equal to 5 mrem to any organ.
  - 2. During any calendar year: Less than or equal to 3 mrem to the total body and less than or equal to 10 mrem to any organ.

B. Maximum Permissible Concentrations

- 1. Water - Covered in Section A.2.
- 2. Air - Covered in Section A.1.

C. Average Energy

The average energy ( $\bar{E}$ ) of the radionuclide mixtures of fission and activation gases released is not applicable. This information is not utilized for dose or release calculations.

D. Measurements and Approximations of Total Radioactivity

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

1. Gaseous effluents

a. Fission and activation gases:

Radioactivity and radionuclide composition is determined by laboratory GeLi detector analysis in correlation with continuous gross radioactivity monitoring by a beta scintillation detector in the release pathway.

b. Iodines:

Charcoal cartridges provide continuous sample collection. These cartridges are analyzed for radioactivity and radionuclide composition in the laboratory by a GeLi detector gamma spectrometer.

c. Particulates:

Particulate filters provide continuous sample collection. These filters are analyzed for radioactivity and radionuclide composition in the laboratory by a GeLi detector gamma spectrometer. An aliquot of a filter composite from each release point is analyzed for Sr-89, Sr-90 by chemical separation and gas flow proportional counting. An aliquot of each composite is also analyzed for gross alpha by gas flow proportional counting.

d. Tritium:

A portable sampling apparatus is utilized to collect a quarterly sample of each radioactive vent effluent. These samples are analyzed using a liquid scintillation counter.



## 2. Liquid effluents

### a. Principal gamma emitters and dissolved and entrained gases:

Each batch of liquid effluent is analyzed for radioactivity and radionuclide composition in the laboratory by a GeLi detector gamma spectrometer. In addition, each batch is monitored for gross gamma radioactivity by a NaI detector in-line with the release pathway.

### b. Tritium:

An aliquot of a monthly composite is analyzed using a liquid scintillation counter.

### c. Sr-89 and Sr-90:

An aliquot from a quarterly composite is analyzed by chemical separation and gas flow proportional counting.

### d. Gross alpha:

An aliquot from a monthly composite is analyzed by gas flow proportional counting.

### e. Fe-55:

An aliquot from a quarterly composite is analyzed by an offsite laboratory.

## E. Batch Releases

The following information relates to batch releases of radioactive materials in liquid and gaseous effluents:

### a. Liquid

1. Number of batch releases: 84
2. Total time period for batch releases: 2.20 E+04 minutes
3. Maximum time period for batch release: 3.09 E+02 minutes
4. Average time period for batch releases: 2.62 E+02 minutes
5. Minimum time period for a batch release: 6.60 E+01 minutes
6. Average stream flow during periods of release of effluent into a flowing stream: 4.91 E+07 liters/minute

### b. Gaseous

1. Number of batch releases: None
2. Total time period for batch releases: N/A

3. Maximum time period for a batch release: N/A
4. Average time period for batch releases: N/A
5. Minimum time period for a batch release: N/A

F. Abnormal Release

a. Liquid

1. Number of releases: 0
2. Total activity released: None

b. Gaseous

1. Number of releases: 0
2. Total activity released: None

TABLE 1A  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	<u>Unit</u>	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>EST. TOTAL ERROR ±</u>
A. Fission and activation gases				
1. Total release	Ci	2.19 E+01	9.75 E+01	2.0 E+01
2. Average release rate for period	μCi/sec	2.82 E+00	1.24 E+01	
B. Iodines				
1. Total iodine 131	Ci	3.43 E-05	2.18 E-04	3.0 E+01
2. Average release rate for period	μCi/sec	4.41 E-06	2.77 E-05	
C. Particulates				
1. Particulates with half-lives >8 days	Ci	1.54 E-04	5.18 E-04	5.0 E+01
2. Average release rate for period	μCi/sec	1.98 E-05	6.59 E-05	
3. Gross alpha radioactivity	Ci	0.00 E+00	0.00 E+00	
D. Tritium				
1. Total release	Ci	0.00 E+00	0.00 E+00	3.0 E+01
2. Average release rate for period	μCi/sec	0.00 E+00	0.00 E+00	



TABLE 1B  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
GASEOUS EFFLUENT-ELEVATED RELEASE

1.	NUCLIDES RELEASED	UNIT	CONTINUOUS MOLE		*BATCH
			1st QUARTER	2nd QUARTER	
	Fission gases.				
	krypton-83m	Ci	1.10 E-01	5.70 E-01	
	krypton-85m	Ci	2.00 E-01	1.00 E+00	
	krypton-85	Ci	6.30 E-01	3.20 E+00	
	krypton-87	Ci	6.70 E-01	3.40 E+00	
	krypton-88	Ci	6.70 E-01	3.40 E+00	
	krypton-89	Ci	3.10 E+00	1.60 E+01	
	xenon-133m	Ci	9.40 E-03	4.80 E-02	
	xenon-133	Ci	4.70 E-01	2.40 E+00	
	xenon-135m	Ci	2.30 E-01	1.20 E+00	
	xenon-135	Ci	8.30 E-01	4.20 E+00	
	xenon-137	Ci	3.80 E+00	1.90 E+01	
	xenon-138	Ci	2.70 E+00	1.40 E+01	
	Total for period	Ci	1.34 E+01	6.84 E+01	
2.	Iodines.				
	iodine-131	Ci	3.43 E-05	2.18 E-04	
	iodine-132	Ci	0.00 E+00	3.98 E-05	
	iodine-133	Ci	0.00 E+00	4.23 E-04	
	iodine-135	Ci	0.00 E-05	2.25 E-04	
	Total for period	Ci	3.43 E-05	9.06 E-04	

\* No batch discharges were made

TABLE 1B  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
GASEOUS EFFLUENT-ELEVATED RELEASE (continued)

		CONTINUOUS MODE		*BATCH
		<u>1st QUARTER</u>	<u>2nd QUARTER</u>	
3.	Particulates.			
	cesium-138	Ci	0.00 E+00	5.18 E-04
	Total for period	Ci	0.00 E+00	5.18 E-04

\*No batch discharges were made.

TABLE 1C  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
GASEOUS EFFLUENT-BUILDING VENT RELEASES

	<u>NUCLIDES RELEASED</u>	<u>UNIT</u>	<u>1st QUARTER</u>	<u>2nd QUARTER</u>
1.	Fission gases.			
	krypton-85m	Ci	9.60 E-02	3.40 E-01
	krypton-87	Ci	1.80 E-01	6.30 E-01
	krypton-88	Ci	3.20 E-01	1.10 E+00
	xenon-133	Ci	3.60 E+00	1.20 E+01
	xenon-135m	Ci	9.50 E-01	3.30 E+00
	xenon-135	Ci	1.40 E+00	5.00 E+00
	xenon-138	Ci	1.90 E+00	6.70 E+00
	Total for period	Ci	8.45 E+00	2.91 E+01
2.	Iodines.			
	iodine-131	Ci	0.00 E+00	0.00 E+00
	iodine-133	Ci	0.00 E+00	0.00 E+00
	Total for period	Ci	0.00 E+00	0.00 E+00
3.	Particulates.			
	strontium - 91	Ci	1.54 E-04	0.00 E+00
	Total for period	Ci	1.54 E-04	0.00 E+00



TABLE 2A  
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT  
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT	1st QUARTER	2nd QUARTER	EST. TOTAL ERROR %
A. Fission and activation products.				
1. Total release (not including tritium, gases, alpha)	CI	5.67 E-01	1.20 E+00	2.0 E+01
2. Average diluted concentration during period	μCi/ml	6.34 E-08	7.06 E-08	
Tritium.				
1. Total release	CI	9.98 E-01	2.04 E+00	2.0 E+01
2. Average diluted concentration during period	μCi/ml	1.12 E-07	1.20 E-07	
C. Dissolved and entrained gases.				
1. Total release	CI	0.00 E+00	0.00 E+00	5.0 E+01
2. Average diluted concentration during period	μCi/ml	0.00 E+00	0.00 E+00	
D. Gross alpha radioactivity.				
1. Total release	CI	2.52 E-04	0.00 E+00	5.0 E+01
E. Volume of waste released (prior to dilution).	liters	2.36 E+06	3.35 E+06	1.0 E+01
F. Volume of dilution water used during period.	liters	8.95 E+09	1.70 E+10	1.0 E+01

TABLE 2B  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
LIQUID EFFLUENTS

<u>NUCLIDES RELEASED</u>	<u>UNIT</u>	CONTINUOUS MODE*	BATCH MODE
		<u>1st QUARTER</u>	<u>2nd QUARTER</u>
chromium-51	CI	2.18 E-02	3.65 E-03
manganese-54	CI	1.23 E-01	3.01 E-01
iron-55	CI	1.48 E-02	3.65 E-02
cobalt-58	CI	5.57 E-02	9.59 E-02
cobalt-60	CI	2.92 E-01	6.46 E-01
strontium-89	CI	3.50 E-03	4.12 E-03
strontium-90	CI	1.74 E-04	7.10 E-04
cesium-134	CI	1.80 E-02	3.67 E-02
cesium-137	CI	3.18 E-02	5.59 E-02
sodium-24	CI	0.00 E+00	2.53 E-04
silver-110m	CI	3.74 E-03	1.72 E-02
cesium-136	CI	0.00 E+00	1.11 E-04
iron-59	CI	6.65 E-04	1.25 E-03
zinc-65	CI	3.90 E-04	1.49 E-04
antimony-124	CI	6.25 E-04	0.00 E+00
iodine-131	CI	5.53 E-04	0.00 E+00
Total for period above	CI	5.67 E-01	1.20 E+00
xenon-133	CI	0.00 E+00	0.00 E+00
xenon-135	CI	0.00 E+00	0.00 E+00

\*No continuous mode discharges made

TABLE 3  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS  
PERIOD January 1, 1990 TO June 30, 1990

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not Irradiated Fuel).

1.	Type of Waste	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR%
a.	Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup> Ci	5.16 E+01 1.67 E+02	15%
b.	Dry compressible waste, con- taminated equip, etc.	m <sup>3</sup> Ci	1.48 E+02 6.39 E+00	25%
c.	Irradiated components, con- trol rods, etc.	m <sup>3</sup> Ci		
d.	Other.	m <sup>3</sup> Ci		

2. Estimate of Major Nuclide Composition (By Type of Waste), Percent %

a.	cobalt-60	4.86 E+01
	cobalt-58	3.29 E+00
	manganese-54	1.33 E+01
	silver-110m	1.49 E+00
	iodine-131	1.36 E-02
	cesium-137	7.50 E+00
	cesium-134	3.87 E+00
	iron-55	1.94 E+01
	carbon-14	5.14 E-01
	technetium-99	7.74 E-04
	tritium	1.15 E-02
	plutonium-241	2.40 E-03
	curium-242	2.97 E-05
	nickel-63	1.36 E+00
	strontium-90	1.00 E-02
	chromium-51	2.49 E-01
	nickel-59	1.36 E-02
	zinc-65	2.45 E-01
	iron-59	1.83 E-01



2. Estimate of Major Nuclide Composition (By Type of Waste), Percent  $\lambda$   
(continued)

b. cobalt-60	6.38 E+01
manganese-54	4.04 E+00
antimony-125	6.51 E-02
cesium-137	5.20 E+00
cesium-134	3.29 E+00
iron-55	2.13 E+01
plutonium-241	5.40 E-03
curium-242	5.46 E-05
nickel-63	1.64 E+00
strontium-90	8.86 E-05
cobalt-58	3.63 E-02
silver-110m	2.89 E-01
tritium	4.16 E-02
nickel-59	2.54 E-01
technetium-99	2.16 E-04
carbon-14	2.05 E-02

3. Solid Waste Disposition

<u>NUMBER OF SHIPMENTS</u>	<u>MODE OF TRANSPORTATION</u>	<u>DESTINATION</u>
16	Exclusive Use Vehicle	Richland, WA
1	Exclusive Use Vehicle	Beatty, NV

4. Solidification Agent

All waste requiring solidification for burial was solidified with cement.

B. IRRADIATED FUEL SHIPMENTS (Disposition)

<u>NUMBER OF SHIPMENTS</u>	<u>MODE OF TRANSPORTATION</u>	<u>DESTINATION</u>
0	N/A	N/A

# GASEOUS RADIOACTIVE WASTES

## CUMMULATIVE DOSE DATA

### A. Maximum gamma air dose

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Annual
--	---------	---------	---------	---------	--------

Site boundary (0.67 miles North)

1. Total	mrad	1.24E-2	7.94E-1		
2. Percent of Technical					
Specification Limit	%	0.25	15.88		

Most Exposed Resident (0.9 miles Northwest)

1. Total	mrad	3.22E-3	5.55E-1		
2. Percent of Technical					
Specification Limit	%	0.06	11.10		

### B. Maximum beta air dose

Site boundary (0.67 miles North)

1. Total	mrad	1.14E-2	4.17E-1		
2. Percent of Technical					
Specification Limit	%	0.11	4.17		

Most Exposed Resident (0.9 miles Northwest)

1. Total	mrad	3.27E-3	2.89E-1		
2. Percent of Technical					
Specification Limit	%	0.03	2.89		

### C. Maximum organ dose due to I-131, I-133, and particulates (>8 day half lives)

Site boundary (0.67 miles North)

1. Total	mrem	1.23E-3	3.18E-2		
2. Percent of Technical					
Specification Limit	%	0.02	0.42		
3. Organ		Thyroid	Thyroid		
4. Exposed Individual		Infant	Infant		

Most Exposed Resident (0.9 miles Northwest)

1. Total	mrem	9.86E-4	9.64E-3		
2. Percent of Technical					
Specification Limit	%	0.01	0.13		
3. Organ		Thyroid	Thyroid		
4. Exposed Individual		Infant	Infant		

- D. Maximum organ dose rate due to I-131, I-133, tritium, and particulates (> 8 day half-lives) was  $3.18 \times 10^{-2}$  mrem/quarter which was 0.42 % of the Technical Specification Limit.
- E. All radioactive noble gas effluent monitors were set to automatically alarm when the monitor alarm setpoint, determined as specified in the Offsite Dose Assessment Manual (ODAM), was exceeded. This is required to ensure that the limits to the total body (500 mrem/yr) and the limits to the skin (3000 mrem/yr) are not exceeded.

## LIQUID RADIOACTIVE WASTES

### CUMMULATIVE DOSE DATA

A. Maximum whole body dose		<u>1st Qtr</u>	<u>2nd Qtr</u>
1. Total	mrem	7.97E-3	2.17E-2
2. Percent of Technical Specification Limit	%	0.53	1.45

B. Maximum organ dose			
1. Total	mrem	1.84E-2	3.10E-2
2. Percent of Technical Specification Limit	%	0.37	0.62

- C. All radioactive liquid effluents were diluted, at time of discharge, to concentrations below the concentrations specified in 10 CFR Part 20.106 for radionuclides other than dissolved and entrained noble gases. For dissolved and entrained noble gases the concentrations were diluted below  $2.00 \times 10^{-4}$  uCi/ml total activity.



SUPPLEMENTAL INFORMATION

A. Unplanned Releases:

None

B. District Initiated Changes to the Process Control Program:

During this period, there were no changes to the CNS Process Control Program.

C. District Initiated Changes to the Offsite Dose Assessment Manual:

During this period, there were no changes to the CNS Offsite Dose Assessment Manual.

APPENDIX B  
METEOROLOGY

## CONTENTS

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ATMOSPHERIC DIFFUSION MODEL	B153



## METEOROLOGICAL DATA SUMMARIES

Meteorological data collected onsite for the period January 1, 1990, through June 31, 1990, were reduced, validated, summarized for analysis, and included in appropriate dose calculations. Hourly data summaries are provided for all pertinent parameters and for the joint frequency distributions (JFDs) of wind speed and wind direction by atmospheric stability class.

DATA RECOVERY: Data recovery statistics are provided in Table 1 for all pertinent meteorological parameters.

January 1 - March 31, 1990 (Q1)	≥ 78.5%
April 1 - June 30, 1990 (Q2)	≥ 79.7%
First Semiannual Period -	
January 1 - June 30, 1990 (SEM1)	≥ 79.1%

### WIND AT 100-METER LEVEL AND 10-METER LEVEL

	<u>Predominant Wind Direction at 100m Level</u>		<u>Predominant Wind Direction at 10m Level</u>	
Q1	South	14.3%	South	15.9%
Q2	South	17.5%	South	17.2%
SEM1	South	15.9%	South	16.6%
	<u>Mean Wind Speed at 100m Level</u>		<u>Mean Wind Speed at 10m Level</u>	
Q1	13.9 MPH		7.3 MPH	
Q2	14.2 MPH		9.0 MPH	
SEM1	14.0 MPH		8.1 MPH	
	<u>Maximum Hourly Average Wind Speed/(Date at 100m Level)</u>		<u>Maximum Hourly Average Wind Speed/(Date at 10m Level)</u>	
Q1	35.7 MPH/(90/03/13)		27.2 MPH/(90/01/27)	
Q2	38.3 MPH/(90/06/19)		27.9 MPH/(90/06/19)	
SEM1	38.3 MPH/(90/06/19)		27.9 MPH/(90/06/19)	

### TEMPERATURE AT 10-METER LEVEL

	<u>Mean Hourly Average Temperature</u>	<u>Average Daily Maximum</u>	<u>Average Daily Minimum</u>
Q1	2.4 Degrees Celsius	7.6 Degrees Celsius	-2.2 Degrees Celsius
Q2	17.0 Degrees Celsius	21.3 Degrees Celsius	12.4 Degrees Celsius
SEM1	9.8 Degrees Celsius	14.9 Degrees Celsius	5.5 Degrees Celsius

	<u>Maximum Temperature Date</u>	<u>Minimum Temperature Date</u>
Q1	24.4 Degrees Celsius 90/03/12	-17.2 Degrees Celsius 90/02/17
Q2	34.8 Degrees Celsius 90/06/28	-3.9 Degrees Celsius 90/04/12
SEM1	34.8 Degrees Celsius 90/06/28	-17.2 Degrees Celsius 90/02/17

### PRECIPITATION

	<u>Total Precipitation</u>	<u>Maximum Daily Precipitation Total/(Date)</u>	<u>Maximum Hourly Precipitation Total/(Date)</u>
Q1	4.74 Inches	0.63 Inches (90/03/28)	0.20 Inches (90/03/15)
Q2	5.20 Inches	0.80 Inch (90/05/09)	0.30 Inch (90/05/24)
SEM1	9.94 Inches	0.80 Inches (90/05/09)	0.30 Inches (90/05/24)



## METEOROLOGICAL DATA SUMMARIES

Meteorological data collected onsite for the period January 1, 1990, through June 31, 1990, were reduced, validated, summarized for analysis, and included in appropriate dose calculations. Hourly data summaries are provided for all pertinent parameters and for the joint frequency distributions (JFDs) of wind speed and wind direction by atmospheric stability class.

DATA RECOVERY: Data recovery statistics are provided in Table 1 for all pertinent meteorological parameters.

January 1 - March 31, 1990 (Q1)	≥ 78.5%
April 1 - June 30, 1990 (Q2)	≥ 79.7%
First Semiannual Period -	
January 1 - June 30, 1990 (SEM1)	≥ 79.1%

### WIND AT 100-METER LEVEL AND 10-METER LEVEL

	<u>Predominant Wind Direction at 100m Level</u>		<u>Predominant Wind Direction at 10m Level</u>	
Q1	South	14.3%	South	15.9%
Q2	South	17.5%	South	17.2%
SEM1	South	15.9%	South	16.6%

	<u>Mean Wind Speed at 100m Level</u>	<u>Mean Wind Speed at 10m Level</u>
Q1	13.9 MPH	7.3 MPH
Q2	14.2 MPH	9.0 MPH
SEM1	14.0 MPH	8.1 MPH

	<u>Maximum Hourly Average Wind Speed/(Date at 100m Level)</u>	<u>Maximum Hourly Average Wind Speed/(Date at 10m Level)</u>
Q1	35.7 MPH/(90/03/13)	27.2 MPH/(90/01/27)
Q2	38.3 MPH/(90/06/19)	27.9 MPH/(90/06/19)
SEM1	38.3 MPH/(90/06/19)	27.9 MPH/(90/06/19)



### TEMPERATURE AT 10-METER LEVEL

	<u>Mean Hourly Average Temperature</u>	<u>Average Daily Maximum</u>	<u>Average Daily Minimum</u>
Q1	2.4 Degrees Celsius	7.6 Degrees Celsius	-2.2 Degrees Celsius
Q2	17.0 Degrees Celsius	21.3 Degrees Celsius	12.4 Degrees Celsius
SEM1	9.8 Degrees Celsius	14.9 Degrees Celsius	5.5 Degrees Celsius

	<u>Maximum Temperature Date</u>	<u>Minimum Temperature Date</u>
Q1	24.4 Degrees Celsius 90/03/12	-17.2 Degrees Celsius 90/02/17
Q2	34.8 Degrees Celsius 90/06/28	-3.9 Degrees Celsius 90/04/12
SEM1	34.8 Degrees Celsius 90/06/28	-17.2 Degrees Celsius 90/02/17

### PRECIPITATION

	<u>Total Precipitation</u>	<u>Maximum Daily Precipitation Total/(Date)</u>	<u>Maximum Hourly Precipitation Total/(Date)</u>
Q1	4.74 Inches	0.63 Inches (90/03/28)	0.20 Inches (90/03/15)
Q2	5.20 Inches	0.80 Inch (90/05/09)	0.30 Inch (90/05/24)
SEM1	9.94 Inches	0.80 Inches (90/05/09)	0.30 Inches (90/05/24)

**ATMOSPHERIC STABILITY:** Atmospheric stability is determined through classification of differential temperature data based on JFD of the 100-meter wind and the delta T (100m - 10m) stability data.

	<u>Unstable Conditions</u> <u>Classes A-C</u>	<u>Neutral Conditions</u> <u>Class D</u>	<u>Stable Conditions</u> <u>Classes E-G</u>
Q1	6%	43%	51%
Q2	17%	53%	30%
SEM1	11%	48%	41%

Table 1. Meteorological Data Recovery

Data Recovery (% of total observations)

	January- March <u>1990</u>	April- June <u>1990</u>	January- June <u>1990</u>
100m wind speed	99.4	98.2	98.8
100m wind direction	99.4	98.5	99.0
100m ambient temperature	97.5	97.9	97.7
60m wind speed	99.4	98.5	98.9
60m wind direction	99.4	98.5	98.9
60m ambient temperature	97.6	97.3	97.5
10m wind speed	99.4	98.5	98.9
10m wind direction	99.4	98.5	98.9
10m ambient temperature	78.6	80.4	79.5
10m dew point	97.6	98.0	97.8
100m-10m delta T	78.5	80.3	79.4
100m-60m delta T	97.5	97.3	97.4
60m-10m delta T	78.6	79.7	79.1
Precipitation	100.0	100.0	100.0
100m JFD	78.5	80.3	79.4
10m JFD	78.6	79.7	79.1

JFD - Joint Frequency Distribution of wind speed, wind direction and atmospheric stability.



## MONTHLY SUMMARY TABLES OF HOURLY METEOROLOGICAL DATA

The tables presented in this section provide a summary of hourly averages of measured meteorological parameters. The tables provide summaries by month for the semiannual period January through June, 1990. Summaries for the first quarter, second quarter, and semiannual period are also provided. The parameters provided are listed below.

- \* 10 meter ambient temperature.
- \* Wind direction frequencies at 10 meters and 100 meters.
- \* Precipitation.

Any missing or non-measured data are indicated by a field of 9's.

10-Meter Ambient Temperature  
and  
10-Meter Dew Point Temperature

PROGRAM: WETTEMP  
VERSION: 3P

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 1990

MONTHLY HOUR AVERAGED FOR THE PERIOD 1/ 1/90 TO 3/31/90

JANUARY

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER OBS	(DEG C)	NUMBER OBS	(DEG C)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG C)
1	28.	0.6	31.	-5.5	28.	63.3	28.	3.2	28.	-1.7
2	28.	0.3	31.	-5.6	28.	64.0	28.	3.2	28.	-1.9
3	28.	0.0	31.	-5.8	28.	64.6	28.	3.2	28.	-2.1
4	28.	-0.3	31.	-6.0	28.	65.1	28.	3.2	28.	-2.3
5	27.	-0.9	31.	-6.0	27.	65.4	27.	3.0	27.	-2.8
6	28.	-0.8	31.	-6.0	28.	67.3	28.	3.2	28.	-2.6
7	29.	-1.2	31.	-6.1	29.	68.0	29.	3.2	29.	-2.9
8	28.	-1.7	31.	-6.1	28.	67.5	28.	3.0	28.	-3.4
9	28.	-1.6	31.	-6.0	28.	67.4	28.	3.0	28.	-3.4
10	28.	-0.6	31.	-5.7	28.	64.3	28.	3.0	28.	-2.7
11	28.	0.8	31.	-5.4	28.	59.8	28.	3.1	28.	-1.6
12	29.	2.8	31.	-5.1	29.	56.0	29.	3.4	29.	-0.2
13	29.	4.0	31.	-4.8	29.	52.9	29.	3.5	29.	0.7
14	29.	5.0	31.	-4.5	29.	50.6	29.	3.6	29.	1.3
15	29.	5.7	31.	-4.5	29.	49.0	29.	3.6	29.	1.8
16	28.	6.1	31.	-4.3	28.	47.9	28.	3.6	28.	2.1
17	28.	5.9	31.	-4.2	28.	49.0	28.	3.7	28.	2.0
18	28.	4.9	31.	-4.3	28.	51.7	28.	3.6	28.	1.4
19	29.	4.0	31.	-4.3	29.	55.2	29.	3.6	29.	0.8
20	28.	3.4	31.	-4.6	28.	56.4	28.	3.5	28.	0.3
21	28.	2.8	31.	-4.9	28.	58.2	28.	3.4	28.	-0.1
22	27.	2.1	31.	-5.0	27.	59.4	27.	3.3	27.	-0.6
23	27.	1.8	31.	-5.1	27.	60.5	27.	3.4	27.	-0.8
24	28.	1.3	31.	-5.1	28.	62.5	28.	3.4	28.	-1.1
HOURLY MEAN		1.9		-5.2		59.4		3.3		-0.8
AVG DAILY MAX		6.5		-1.8		74.5		4.2		2.8
AVG DAILY MIN		-2.7		-8.2		46.9		2.7		-4.2
ABSOLUTE MAX		18.1		11.3		95.7		9.5		13.6
ABSOLUTE MIN		-9.4		-15.9		24.6		1.4		-10.2
TOTAL OBS	675		744		675		675		675	



PROGRAM: WEITENF  
VERSION: 3P

NFPP-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 1990

MONTHLY HOUR AVERAGES FOR THE PERIOD 1/ 1/90 TO 3/31/90

FEBRUARY

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		NET BULB	
	NUMBER OBS	(DEG C)	NUMBER OBS	(DEG C)	NUMBER OBS	(%)	NUMBER OBS	(GM/MS)	NUMBER OBS	(DEG C)
1	26.	-0.3	28.	-7.3	26.	60.6	26.	3.0	26.	-2.7
2	27.	-0.8	28.	-7.6	27.	61.3	27.	2.9	27.	-2.1
3	26.	-1.4	28.	-8.0	26.	61.1	26.	2.8	26.	-3.6
4	26.	-1.7	28.	-8.2	26.	61.1	26.	2.7	26.	-3.9
5	26.	-2.1	28.	-8.4	26.	61.6	26.	2.7	26.	-4.2
6	26.	-2.2	28.	-8.6	26.	61.7	26.	2.7	26.	-4.3
7	27.	-2.4	28.	-8.8	27.	62.9	27.	2.7	27.	-4.4
8	28.	-2.5	28.	-8.9	28.	62.9	28.	2.6	28.	-4.5
9	28.	-2.0	28.	-8.6	28.	61.8	28.	2.7	28.	-4.1
10	28.	-1.0	28.	-8.0	28.	60.3	28.	2.8	28.	-3.3
11	28.	0.3	28.	-7.5	28.	57.2	28.	2.9	28.	-2.4
12	28.	1.5	28.	-7.1	28.	54.3	28.	3.0	28.	-1.5
13	28.	2.8	28.	-6.9	28.	51.1	28.	3.0	28.	-0.7
14	28.	3.8	28.	-6.6	28.	48.9	28.	3.1	28.	-0.1
15	28.	4.5	28.	-6.6	28.	46.7	28.	3.1	28.	0.4
16	28.	4.8	28.	-6.5	28.	45.4	28.	3.1	28.	0.6
17	27.	5.1	28.	-6.5	27.	45.9	27.	3.1	27.	0.7
18	27.	4.3	28.	-6.6	27.	47.9	27.	3.1	27.	0.3
19	26.	3.4	28.	-6.8	26.	50.0	26.	3.1	26.	-0.2
20	26.	2.4	28.	-6.9	26.	52.5	26.	3.1	26.	-0.8
21	26.	1.8	28.	-6.9	26.	54.5	26.	3.1	26.	-1.2
22	27.	0.7	28.	-7.1	27.	57.3	27.	3.0	27.	-1.9
23	27.	0.0	28.	-7.3	27.	59.3	27.	3.0	27.	-2.5
24	26.	-0.4	28.	-7.5	26.	60.1	26.	3.0	26.	-2.7
HOURLY MEAN		0.8		-7.5		56.1		2.9		-2.1
AVG DAILY MAX		6.1		-3.9		70.6		3.7		1.8
AVG DAILY MIN		-4.1		-10.6		42.2		2.3		-5.5
ABSOLUTE MAX		22.2		2.5		86.9		5.5		10.9
ABSOLUTE MIN		-17.2		-20.6		19.6		1.0		-17.7
TOTAL OBS	648		672		648		648		648	

PROGRAM: WETTEMP  
VERSION: 3P

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 1990

MONTHLY HOUR AVERAGES FOR THE PERIOD 1/ 1/90 TO 3/31/90

MARCH

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER OBS	(DEG C)	NUMBER OBS	(DEG C)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG C)
1	16.	3.7	31.	-0.6	16.	52.8	16.	3.4	16.	0.4
2	15.	3.0	31.	-0.6	15.	52.8	15.	3.3	15.	-0.1
3	15.	2.7	31.	-0.7	15.	55.1	15.	3.5	15.	-0.2
4	15.	2.1	31.	-0.8	15.	56.1	15.	3.4	15.	-0.7
5	15.	1.7	31.	-0.9	15.	57.1	15.	3.3	15.	-1.0
6	14.	1.7	30.	-0.9	14.	57.3	14.	3.3	14.	-1.0
7	15.	0.8	29.	-1.1	15.	58.6	15.	3.2	15.	-1.6
8	15.	1.3	30.	-1.0	15.	57.7	15.	3.3	15.	-1.3
9	14.	2.6	27.	-1.0	14.	54.0	14.	3.4	14.	-0.4
10	15.	4.1	27.	-1.2	15.	49.8	15.	3.4	15.	0.6
11	15.	6.2	28.	-0.6	15.	46.2	15.	3.6	15.	2.0
12	16.	7.9	27.	-0.3	16.	44.5	16.	3.8	16.	3.3
13	14.	9.7	26.	0.2	14.	40.9	14.	3.9	14.	4.4
14	14.	10.6	26.	0.3	14.	38.8	14.	3.9	14.	4.8
15	14.	11.1	15.	0.3	14.	38.0	14.	3.9	14.	5.0
16	14.	11.5	25.	0.2	14.	36.5	14.	3.7	14.	5.1
17	15.	11.6	26.	-0.2	15.	35.2	15.	3.6	15.	5.1
18	17.	10.8	28.	-0.1	17.	37.9	17.	3.8	17.	4.8
19	16.	9.4	29.	0.1	16.	40.3	16.	3.7	16.	4.0
20	18.	7.8	31.	-0.1	18.	45.4	18.	3.9	18.	3.3
21	18.	6.8	31.	0.0	18.	49.0	18.	4.0	18.	2.8
22	18.	6.1	31.	-0.1	18.	51.5	18.	4.0	18.	2.4
23	18.	5.6	31.	-0.2	18.	52.6	18.	4.0	18.	2.1
24	18.	5.2	31.	-0.2	18.	53.8	18.	4.0	18.	1.9
HOURLY MEAN		6.0		-0.4		48.5		3.7		1.9
AVG DAILY MAX		11.2		2.6		62.5		4.7		5.5
AVG DAILY MIN		1.1		-3.5		38.8		3.1		-1.4
ABSOLUTE MAX		24.4		16.6		75.7		9.9		14.5
ABSOLUTE MIN		-6.9		-17.5		19.0		1.2		-8.2
TOTAL OBS	374		693		374		374		374	

PROGRAM: WETTEMP  
VERSION: 3P

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 1990

HOURLY AVERAGES FOR THE PERIOD 1/ 1/90 TO 3/31/90

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER		NUMBER		NUMBER		NUMBER		NUMBER	
	OBS	(DEG C)	OBS	(DEG C)	OBS	(%)	OBS	(GM/M3)	OBS	(DEG C)
1	70.	0.9	90.	-4.4	70.	59.8	70.	3.2	70.	-1.6
2	70.	0.4	90.	-4.5	70.	60.6	70.	3.1	70.	-2.0
3	69.	0.0	90.	-4.7	69.	61.2	69.	3.1	69.	-2.3
4	69.	-0.3	90.	-4.9	69.	61.7	69.	3.1	69.	-2.6
5	68.	-0.8	90.	-5.0	68.	62.1	68.	3.0	68.	-2.9
6	68.	-0.8	89.	-5.1	68.	63.1	68.	3.0	68.	-2.9
7	71.	-1.2	88.	-5.3	71.	64.1	71.	3.0	71.	-3.2
8	71.	-1.4	89.	-5.3	71.	63.6	71.	2.9	71.	-3.4
9	70.	-0.9	86.	-5.2	70.	62.5	70.	2.9	70.	-3.0
10	71.	0.2	86.	-5.0	71.	59.6	71.	3.0	71.	-2.2
11	71.	1.7	87.	-4.5	71.	55.9	71.	3.1	71.	-1.2
12	73.	3.4	86.	-4.3	73.	52.8	73.	3.3	73.	0.1
13	71.	4.6	85.	-4.0	71.	49.8	71.	3.4	71.	0.8
14	71.	5.6	85.	-3.8	71.	47.6	71.	3.4	71.	1.5
15	71.	6.3	84.	-3.8	71.	45.9	71.	3.4	71.	1.9
16	70.	6.7	84.	-3.7	70.	45.1	70.	3.4	70.	2.1
17	70.	6.8	85.	-3.7	70.	44.9	70.	3.4	70.	2.2
18	72.	6.1	87.	-3.7	72.	47.0	72.	3.5	72.	1.8
19	71.	5.0	88.	-3.7	71.	49.9	71.	3.5	71.	1.2
20	72.	4.1	90.	-3.8	72.	52.2	72.	3.4	72.	0.7
21	72.	3.4	90.	-3.8	72.	54.6	72.	3.4	72.	0.2
22	72.	2.6	90.	-4.0	72.	56.6	72.	3.4	72.	-0.3
23	72.	2.1	90.	-4.1	72.	58.0	72.	3.4	72.	-0.7
24	72.	1.6	90.	-4.1	72.	59.5	72.	3.4	72.	-0.9
HOURLY MEAN		2.4		-4.3		55.7		3.2		-0.7
AVG DAILY MAX		7.6		-1.0		70.0		4.1		3.1
AVG DAILY MIN		-2.2		-7.4		43.1		2.7		-4.1
ABSOLUTE MAX		24.4		16.6		95.7		9.9		14.5
ABSOLUTE MIN		-17.2		-20.6		19.0		1.0		-17.7
TOTAL OBS		1697		2109		1697		1697		1697



PROGRAM: WETTEMP  
VERSION: 3P

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUNE 1990

MONTHLY HOUR AVERAGES FOR THE PERIOD 4/ 1/90 TO 6/30/90

APRIL

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER		NUMBER		NUMBER		NUMBER		NUMBER	
	OBS	(DEG C)	OBS	(DEG C)	OBS	(%)	OBS	(GM/M3)	OBS	(DEG C)
1	24.	8.8	29.	1.4	24.	56.5	24.	5.7	24.	5.4
2	24.	8.4	29.	1.4	24.	58.7	24.	5.7	24.	5.2
3	24.	8.0	29.	1.2	24.	59.6	24.	5.6	24.	4.9
4	23.	7.9	29.	1.2	23.	59.8	23.	5.6	23.	4.8
5	24.	7.2	29.	1.1	24.	62.8	24.	5.6	24.	4.4
6	24.	6.8	29.	1.0	24.	63.9	24.	5.6	24.	4.1
7	22.	6.4	29.	1.1	22.	64.2	22.	5.5	22.	3.8
8	23.	7.3	29.	1.0	23.	60.5	23.	5.5	23.	4.3
9	22.	9.7	29.	1.8	22.	55.3	22.	5.8	22.	6.0
10	22.	10.8	29.	1.7	22.	50.4	22.	5.7	22.	6.5
11	23.	12.0	30.	1.9	23.	48.8	23.	5.9	23.	7.3
12	24.	12.8	30.	1.9	24.	45.0	24.	5.8	24.	7.6
13	26.	14.0	30.	1.7	26.	44.0	26.	5.9	26.	8.3
14	25.	14.8	29.	1.5	25.	41.2	25.	5.9	25.	8.7
15	26.	15.4	30.	1.1	26.	38.9	26.	5.7	26.	8.8
16	26.	15.6	30.	0.8	26.	38.2	26.	5.6	26.	8.9
17	26.	15.8	30.	0.8	26.	37.8	26.	5.6	26.	9.0
18	27.	15.3	30.	0.8	27.	38.8	27.	5.6	27.	8.7
19	27.	14.4	30.	0.9	27.	41.3	27.	5.7	27.	8.3
20	27.	13.2	30.	1.0	27.	44.3	27.	5.7	27.	7.7
21	27.	12.0	29.	1.1	27.	48.0	27.	5.8	27.	7.2
22	27.	11.1	29.	1.1	27.	50.9	27.	5.8	27.	6.7
23	25.	10.0	29.	1.2	25.	51.9	25.	5.6	25.	5.9
24	24.	9.5	28.	1.2	24.	53.8	24.	5.6	24.	5.7
HOURLY MEAN		11.3		1.2		50.2		5.7		6.7
AVG DAILY MAX		16.1		4.9		65.8		6.6		9.3
AVG DAILY MIN		6.0		-2.4		35.1		4.6		3.1
ABSOLUTE MAX		29.1		15.0		84.2		12.5		19.6
ABSOLUTE MIN		-3.9		-15.5		19.0		1.4		-5.5
TOTAL OBS		592		764		592		592		592

PROGRAM: WETTEMP  
VERSION: 3P

NFPA-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUNE 1990

MONTHLY HOUR AVERAGES FOR THE PERIOD 4/ 1/90 TO 6/30/90

MAY

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER		NUMBER		NUMBER		NUMBER		NUMBER	
	OBS	(DEG C)	OBS	(DEG C)	OBS	(%)	OBS	(G/M3)	OBS	(DEG C)
1	28.	13.7	31.	6.9	28.	62.6	28.	7.7	28.	10.2
2	27.	13.3	31.	6.8	27.	63.2	27.	7.6	27.	9.9
3	25.	12.3	31.	6.7	25.	64.7	25.	7.3	25.	9.2
4	22.	11.5	31.	6.7	22.	65.4	22.	7.0	22.	8.5
5	22.	11.1	31.	6.5	22.	65.6	22.	6.9	22.	8.2
6	22.	11.1	31.	6.4	22.	65.0	22.	6.8	22.	8.1
7	21.	11.3	31.	6.6	21.	64.3	21.	6.8	21.	8.2
8	21.	12.6	30.	6.7	21.	60.8	21.	6.9	21.	8.9
9	22.	14.1	30.	7.0	22.	57.3	22.	7.1	22.	10.0
10	22.	15.4	30.	7.0	22.	53.8	22.	7.2	22.	10.6
11	25.	16.2	30.	7.0	25.	53.1	25.	7.5	25.	11.2
12	24.	17.1	29.	6.7	24.	50.0	24.	7.4	24.	11.6
13	25.	17.9	29.	6.9	25.	49.7	25.	7.7	25.	12.1
14	27.	18.4	29.	6.9	27.	49.4	27.	7.8	27.	12.5
15	27.	18.9	29.	6.9	27.	48.0	27.	7.8	27.	12.7
16	29.	19.0	30.	6.8	29.	47.5	29.	7.7	29.	12.7
17	29.	19.0	31.	7.2	29.	47.6	29.	7.8	29.	12.8
18	28.	19.1	31.	7.2	28.	46.6	28.	7.6	28.	12.6
19	28.	18.3	31.	7.2	28.	48.6	28.	7.6	28.	12.3
20	28.	17.1	31.	7.3	28.	52.1	28.	7.6	28.	11.8
21	27.	16.2	31.	7.5	27.	55.2	27.	7.7	27.	11.4
22	27.	15.4	31.	7.4	27.	57.6	27.	7.7	27.	11.1
23	27.	14.9	31.	7.3	27.	59.1	27.	7.7	27.	10.8
24	27.	14.3	31.	7.4	27.	61.6	27.	7.8	27.	10.6
HOURLY MEAN		15.5		7.0		55.8		7.5		10.9
AVG DAILY MAX		19.7		9.6		69.5		8.7		13.3
AVG DAILY MIN		11.6		4.4		45.0		6.6		8.5
ABSOLUTE MAX		29.3		16.3		82.7		12.8		18.6
ABSOLUTE MIN		4.9		-7.1		20.3		2.7		1.0
TOTAL OBS		610		731		610		610		610

PROGRAM: WETTEMP  
VERSION: 3P

NPPD-CLOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUNE 1990

MONTHLY HOUR AVERAGES FOR THE PERIOD 4/ 1/90 TO 6/30/90

JUNE

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER OBS	(DEG C)	NUMBER OBS	(DEG C)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG C)
1	20.	21.4	30.	15.4	20.	63.7	20.	12.3	20.	17.1
2	20.	21.1	30.	15.4	20.	65.4	20.	12.4	20.	17.1
3	19.	20.8	30.	15.4	19.	66.7	19.	12.4	19.	16.9
4	20.	20.7	30.	15.1	20.	66.6	20.	12.4	20.	16.9
5	21.	20.5	30.	14.9	21.	67.7	21.	12.4	21.	16.8
6	22.	20.1	30.	15.0	22.	69.2	22.	12.4	22.	16.6
7	20.	20.5	30.	15.3	20.	68.3	20.	12.5	20.	16.9
8	20.	21.5	29.	15.4	20.	64.8	20.	12.6	20.	17.4
9	21.	22.6	29.	15.5	21.	60.4	21.	12.5	21.	17.7
10	21.	24.2	28.	15.6	21.	56.8	21.	12.9	21.	18.6
11	23.	25.2	28.	15.8	23.	54.4	23.	13.1	23.	19.1
12	23.	26.4	28.	15.6	23.	50.2	23.	12.9	23.	19.4
13	25.	27.0	27.	16.0	25.	51.3	25.	13.4	25.	20.0
14	26.	27.7	28.	15.8	26.	48.8	26.	13.3	26.	20.2
15	26.	28.4	28.	15.7	26.	46.4	26.	13.1	26.	20.3
16	26.	28.5	30.	15.3	26.	43.9	26.	12.6	26.	20.0
17	27.	28.5	30.	15.2	27.	44.7	27.	12.8	27.	20.1
18	27.	28.3	30.	15.4	27.	45.6	27.	13.0	27.	20.1
19	27.	27.7	30.	15.7	27.	48.0	27.	13.2	27.	20.1
20	26.	26.5	30.	15.8	26.	51.6	26.	13.4	26.	19.8
21	24.	24.9	30.	16.1	24.	56.7	24.	13.4	24.	19.2
22	24.	24.0	30.	16.1	24.	59.5	24.	13.5	24.	18.9
23	24.	23.3	30.	15.9	24.	61.7	24.	13.3	24.	18.5
24	21.	22.1	30.	15.6	21.	62.2	21.	12.5	21.	17.6
HOURLY MEAN		24.6		15.5		56.4		12.9		18.7
AVG DAILY MAX		28.5		18.0		71.7		14.7		20.4
AVG DAILY MIN		20.1		13.0		42.5		11.2		16.4
ABSOLUTE MAX		34.8		23.0		80.9		20.1		25.2
ABSOLUTE MIN		8.0		1.9		25.9		5.2		6.4
TOTAL OBS	553		705		553		553		553	



PROGRAM: WETTEMP  
VERSION: 3P

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUNE 1990

HOOR AVERAGES FOR THE PERIOD 4/ 1/90 TO 6/30/90

10.0 METERS LEVEL

HOOR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER OBS	(DEG C)	NUMBER OBS	(DEG C)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG C)
1	72.	14.2	90.	7.9	72.	60.9	72.	8.3	72.	10.5
2	71.	13.9	90.	7.9	71.	62.3	71.	8.3	71.	10.3
3	68.	13.2	90.	7.8	68.	63.4	68.	8.1	68.	9.8
4	65.	13.1	90.	7.7	65.	63.8	65.	8.2	65.	9.8
5	67.	12.7	90.	7.6	67.	65.2	67.	8.1	67.	9.5
6	68.	12.5	90.	7.5	68.	66.0	68.	8.2	68.	9.4
7	63.	12.5	90.	7.7	63.	65.5	63.	8.1	63.	9.4
8	64.	13.5	88.	7.7	64.	62.0	64.	8.2	64.	9.9
9	65.	15.4	88.	8.1	65.	57.6	65.	8.4	65.	11.1
10	65.	16.7	87.	8.0	65.	53.6	65.	8.5	65.	11.8
11	71.	17.8	88.	8.1	71.	52.1	71.	8.8	71.	12.5
12	71.	18.7	87.	7.9	71.	48.7	71.	8.6	71.	12.8
13	76.	19.5	86.	7.9	76.	48.3	76.	9.0	76.	13.4
14	78.	20.4	86.	8.0	78.	46.6	78.	9.0	78.	13.8
15	79.	20.9	87.	7.7	79.	44.5	79.	8.8	79.	13.9
16	81.	21.0	90.	7.7	81.	43.4	81.	8.6	81.	13.8
17	82.	21.1	91.	7.7	82.	43.6	82.	8.7	82.	14.0
18	82.	20.9	91.	7.8	82.	43.7	82.	8.7	82.	13.8
19	82.	20.1	91.	7.9	82.	46.0	82.	8.8	82.	13.5
20	81.	18.8	91.	8.0	81.	49.3	81.	8.8	81.	13.0
21	78.	17.4	90.	8.3	78.	53.1	78.	8.8	78.	12.4
22	78.	16.6	90.	8.3	78.	55.8	78.	8.8	78.	12.0
23	76.	15.9	90.	8.2	76.	57.6	76.	8.8	76.	11.6
24	72.	15.0	89.	8.2	72.	59.2	72.	8.4	72.	11.0
HOURLY MEAN		17.0		7.9		54.1		8.6		11.9
AVG DAILY MAX		21.3		10.8		69.0		9.9		14.3
AVG DAILY MIN		12.4		5.0		40.9		7.4		9.2
ABSOLUTE MAX		34.8		23.0		84.2		20.1		25.2
ABSOLUTE MIN		-3.9		-15.5		19.0		1.4		-5.5
TOTAL OBS	1755		2140		1755		1755		1755	

PROGRAM: WETTEMP  
VERSION: 3P

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-JUNE 1990

HOURLY AVERAGES FOR THE PERIOD 1/ 1/90 TO 6/30/90

10.0 METERS LEVEL

HOUR	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
	NUMBER		NUMBER		NUMBER		NUMBER		NUMBER	
	OBS	(DEG C)	OBS	(DEG C)	OBS	(%)	OBS	(GM/M3)	OBS	(DEG C)
1	142.	7.7	180.	1.8	142.	60.3	142.	5.8	142.	4.6
2	141.	7.2	180.	1.7	141.	61.5	141.	5.7	141.	4.2
3	137.	6.6	180.	1.5	137.	62.3	137.	5.6	137.	3.7
4	134.	6.2	180.	1.4	134.	62.7	134.	5.5	134.	3.4
5	135.	5.9	180.	1.3	135.	63.7	135.	5.5	135.	3.3
6	136.	5.8	179.	1.3	136.	64.5	136.	5.6	136.	3.3
7	134.	5.2	178.	1.3	134.	64.7	134.	5.4	134.	2.7
8	135.	5.7	177.	1.2	135.	62.8	135.	5.4	135.	2.9
9	135.	6.9	174.	1.5	135.	60.1	135.	5.6	135.	3.8
10	136.	8.1	173.	1.5	136.	56.8	136.	5.7	136.	4.5
11	142.	9.8	175.	1.8	142.	54.0	142.	5.9	142.	5.7
12	144.	11.0	173.	1.9	144.	50.8	144.	5.9	144.	6.3
13	147.	12.3	171.	2.0	147.	49.0	147.	6.3	147.	7.3
14	149.	13.3	171.	2.1	149.	47.1	149.	6.3	149.	7.9
15	150.	14.0	171.	2.1	150.	45.2	150.	6.3	150.	8.2
16	151.	14.4	174.	2.2	151.	44.2	151.	6.2	151.	8.4
17	152.	14.5	176.	2.2	152.	44.2	152.	6.3	152.	8.5
18	154.	14.0	178.	2.2	154.	45.3	154.	6.2	154.	8.2
19	153.	13.1	179.	2.2	153.	47.8	153.	6.3	153.	7.8
20	153.	11.9	181.	2.2	153.	50.7	153.	6.3	153.	7.2
21	150.	10.7	180.	2.2	150.	53.8	150.	6.2	150.	6.5
22	150.	9.9	180.	2.2	150.	56.2	150.	6.2	150.	6.1
23	148.	9.2	180.	2.1	148.	57.8	148.	6.1	148.	5.6
24	144.	8.3	179.	2.0	144.	59.3	144.	5.9	144.	5.0
HOURLY MEAN		9.8		1.8		54.9		5.9		5.7
AVG DAILY MAX		14.9		5.0		55		7.2		9.0
AVG DAILY MIN		5.5		-1.1		42.0		5.2		3.0
ABSOLUTE MAX		34.8		23.0		95.7		20.1		25.2
ABSOLUTE MIN		-17.2		-20.6		19.0		1.0		-17.7
TOTAL OBS		3452		4249		3452		3452		3452

Wind Direction Frequencies  
10-Meter Level



NPTD-COOPER STATION 10-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINPER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

JANUARY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	0.0	3.2	0.0	0.0	3.2	3.2	9.7	9.7	19.4	12.9	0.0	3.2	0.0	3.2	19.4	12.9	0.0	100.
2	0.0	0.0	0.0	0.0	3.2	6.5	6.5	12.9	19.4	16.1	3.2	0.0	0.0	6.5	19.4	6.5	0.0	100.
3	0.0	0.0	0.0	3.2	3.2	3.2	6.5	12.9	25.8	9.7	3.2	0.0	3.2	6.5	12.9	9.7	0.0	100.
4	3.2	3.2	3.2	9.7	0.0	0.0	3.2	6.5	19.4	6.5	9.7	3.2	0.0	6.5	16.1	9.7	0.0	100.
5	6.5	3.2	9.7	0.0	0.0	0.0	12.9	12.9	9.7	9.7	0.0	3.2	0.0	3.2	19.4	9.7	0.0	100.
6	3.2	0.0	6.5	0.0	3.2	0.0	16.1	6.5	19.4	9.7	6.5	0.0	0.0	3.2	16.1	9.7	0.0	100.
7	6.5	0.0	0.0	6.5	0.0	0.0	6.5	25.8	22.6	0.0	3.2	3.2	0.0	6.5	12.9	6.5	0.0	100.
8	6.5	3.2	0.0	3.2	0.0	6.5	3.2	16.1	25.8	9.7	3.2	0.0	3.2	3.2	9.7	6.5	0.0	100.
9	0.0	3.2	3.2	3.2	0.0	0.0	3.2	19.4	25.8	6.5	3.2	0.0	6.5	6.5	6.5	12.9	0.0	100.
10	3.2	3.2	0.0	3.2	0.0	0.0	6.5	6.5	35.5	3.2	6.5	0.0	0.0	12.9	9.7	9.7	0.0	100.
11	12.9	0.0	0.0	0.0	3.2	0.0	3.2	6.5	29.0	12.9	3.2	0.0	3.2	12.9	0.0	12.9	0.0	100.
12	3.2	3.2	0.0	3.2	0.0	0.0	3.2	6.5	22.6	19.4	0.0	3.2	3.2	6.5	12.9	12.9	0.0	100.
13	9.7	0.0	0.0	3.2	0.0	3.2	0.0	3.2	15.4	22.6	3.2	6.5	3.2	6.5	6.5	12.9	0.0	100.
14	9.7	0.0	3.2	0.0	0.0	0.0	3.2	0.0	19.4	16.1	9.7	9.7	3.2	6.5	9.7	9.7	0.0	100.
15	3.2	0.0	3.2	0.0	0.0	0.0	0.0	3.2	22.6	19.4	6.5	6.5	3.2	6.5	12.9	12.9	0.0	100.
16	3.2	0.0	3.2	3.2	0.0	0.0	0.0	6.5	22.6	19.4	6.5	3.2	6.5	3.2	6.5	16.1	0.0	100.
17	0.0	3.2	0.0	6.5	0.0	0.0	3.2	12.9	25.8	6.5	9.7	3.2	3.2	0.0	16.1	9.7	0.0	100.
18	3.2	0.0	6.5	3.2	3.2	0.0	0.0	22.6	22.6	3.2	9.7	0.0	3.2	0.0	19.4	3.2	0.0	100.
19	3.2	3.2	12.9	0.0	0.0	0.0	0.0	12.9	22.6	6.5	12.9	6.5	0.0	3.2	6.5	9.7	0.0	100.
20	6.5	0.0	6.5	3.2	0.0	0.0	3.2	3.2	35.5	3.2	6.5	12.9	0.0	0.0	9.7	9.7	0.0	100.
21	6.5	0.0	0.0	6.5	0.0	0.0	0.0	9.7	25.8	16.1	6.5	3.2	6.5	0.0	6.5	12.9	0.0	100.
22	6.5	0.0	0.0	3.2	0.0	3.2	9.7	12.9	19.4	6.5	6.5	3.2	6.5	0.0	9.7	12.9	0.0	100.
23	9.7	3.2	0.0	3.2	0.0	3.2	3.2	19.4	12.9	12.9	0.0	3.2	6.5	3.2	9.7	9.7	0.0	100.
24	0.0	6.5	0.0	0.0	3.2	3.2	9.7	16.1	12.9	12.9	0.0	6.5	6.5	0.0	16.1	6.5	0.0	100.
ALL	4.4	1.6	2.4	2.7	0.9	1.3	4.7	11.0	22.3	10.9	5.0	3.4	2.8	4.4	11.8	10.2	0.0	100.

NUMBER OF OBS = 744

NPPD-COOPER STATION 10-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINPER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

FEBRUARY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WSW	WN	NWN	CALM	TOTAL
1	21.4	7.1	3.6	0.0	0.0	0.0	14.3	10.7	17.9	10.7	0.0	0.0	3.6	0.0	7.1	3.6	0.0	100.
2	17.9	10.7	3.6	0.0	0.0	3.6	14.3	7.1	17.9	3.6	0.0	3.6	7.1	0.0	7.1	3.6	0.0	100.
3	21.4	10.7	0.0	0.0	0.0	3.6	7.1	25.0	7.1	3.6	0.0	3.6	3.6	0.0	7.1	7.1	0.0	100.
4	17.9	7.1	0.0	0.0	3.6	0.0	10.7	14.3	17.9	3.6	0.0	7.1	0.0	3.6	3.6	10.7	0.0	100.
5	21.4	10.7	0.0	3.6	0.0	0.0	3.6	17.9	21.4	3.6	0.0	3.6	0.0	3.6	3.6	7.1	0.0	100.
6	25.0	3.6	3.6	3.6	0.0	0.0	7.1	10.7	17.9	7.1	3.6	3.6	0.0	0.0	7.1	7.1	0.0	100.
7	17.9	10.7	0.0	0.0	0.0	3.6	7.1	17.9	14.3	10.7	0.0	3.6	3.6	0.0	0.0	10.7	0.0	100.
8	21.4	7.1	0.0	0.0	0.0	0.0	14.3	14.3	7.1	14.3	3.6	3.6	0.0	3.6	3.6	7.1	0.0	100.
9	17.9	7.1	7.1	0.0	0.0	3.6	17.9	3.6	7.1	10.7	10.7	0.0	3.6	0.0	0.0	10.7	0.0	100.
10	17.9	7.1	3.6	0.0	3.6	3.6	10.7	3.6	10.7	3.6	3.6	3.6	7.1	10.7	3.6	7.1	0.0	100.
11	17.9	7.1	3.6	3.6	0.0	3.6	7.1	3.6	7.1	14.3	3.6	0.0	3.6	10.7	3.6	10.7	0.0	100.
12	10.7	7.1	0.0	7.1	0.0	3.6	3.6	10.7	3.6	10.7	7.1	0.0	0.0	14.3	3.6	17.9	0.0	100.
13	14.3	7.1	3.6	0.0	0.0	0.0	3.6	3.6	14.3	7.1	7.1	0.0	7.1	7.1	3.6	21.4	0.0	100.
14	14.3	10.7	3.6	0.0	0.0	0.0	3.6	3.6	10.7	17.9	0.0	0.0	7.1	7.1	3.6	17.9	0.0	100.
15	25.0	10.7	0.0	0.0	0.0	0.0	3.6	3.6	7.1	14.3	7.1	0.0	0.0	10.7	7.1	10.7	0.0	100.
16	25.0	3.6	7.1	0.0	0.0	3.6	0.0	7.1	10.7	7.1	3.6	3.6	0.0	7.1	10.7	10.7	0.0	100.
17	17.9	7.1	3.6	0.0	0.0	3.6	3.6	10.7	3.6	10.7	0.0	0.0	0.0	0.0	25.0	14.3	0.0	100.
18	17.9	7.1	7.1	0.0	3.6	3.6	3.6	7.1	10.7	7.1	7.1	0.0	0.0	3.6	10.7	17.9	0.0	100.
19	17.9	10.7	0.0	0.0	0.0	7.1	3.6	3.6	7.1	7.1	7.1	3.6	0.0	3.6	7.1	21.4	0.0	100.
20	14.3	10.7	0.0	7.1	0.0	3.6	3.6	3.6	3.6	10.7	0.0	3.6	3.6	3.6	7.1	25.0	0.0	100.
21	10.7	10.7	0.0	0.0	0.0	0.0	7.1	7.1	10.7	10.7	3.6	0.0	3.6	3.6	17.9	14.3	0.0	100.
22	7.1	10.7	7.1	0.0	0.0	0.0	14.3	3.6	17.9	3.6	0.0	7.1	7.1	3.6	3.6	14.3	0.0	100.
23	10.7	14.3	0.0	0.0	3.6	3.6	10.7	7.1	10.7	3.6	10.7	3.6	3.6	3.6	3.6	10.7	0.0	100.
24	17.9	7.1	7.1	0.0	0.0	0.0	17.9	7.1	21.4	3.6	0.0	0.0	3.6	3.6	3.6	7.1	0.0	100.
ALL	17.6	8.6	2.7	1.0	0.6	2.1	8.0	8.6	11.6	8.3	3.0	2.2	2.8	4.3	6.4	12.1	0.0	100.

NUMBER OF OBS = 672

NEPD-COOPER STATION 10-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINTER  
VERSION: 2F

HOURLY WIND ROSES (PERCENT)

MARCH

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	CALM	TOTAL
1	12.9	3.2	0.0	3.2	6.5	3.2	6.5	3.2	19.4	0.0	3.2	3.2	0.0	0.0	0.0	0.0	35.5
2	6.5	3.2	0.0	6.5	3.2	0.0	0.0	9.7	16.1	6.5	0.0	3.2	0.0	0.0	0.0	6.5	35.5
3	6.5	6.5	3.2	6.5	3.2	6.5	0.0	3.2	12.9	3.2	6.5	0.0	0.0	0.0	3.2	3.2	35.5
4	3.2	3.2	3.2	3.2	9.7	3.2	3.2	3.2	19.4	3.2	0.0	3.2	0.0	0.0	3.2	0.0	38.7
5	6.5	3.2	3.2	0.0	6.5	12.9	0.0	6.5	19.4	0.0	0.0	0.0	0.0	3.2	3.2	0.0	35.5
6	6.5	9.7	3.2	3.2	6.5	0.0	6.5	6.5	16.1	0.0	0.0	0.0	6.5	0.0	3.2	0.0	32.3
7	6.5	3.2	3.2	0.0	6.5	6.5	0.0	6.5	22.6	0.0	0.0	0.0	3.2	3.2	3.2	0.0	35.5
8	9.7	0.0	3.2	0.0	6.5	6.5	0.0	12.9	9.7	6.5	0.0	3.2	0.0	0.0	3.2	0.0	38.7
9	6.7	6.7	6.7	0.0	6.7	6.7	0.0	3.3	10.9	10.0	6.7	0.0	0.0	3.3	3.3	0.0	30.0
10	10.3	3.4	3.4	0.0	6.9	3.4	0.0	3.4	6.9	3.4	10.3	6.9	0.0	0.0	3.4	3.4	34.5
11	10.0	0.0	6.7	0.0	6.7	3.3	3.3	0.0	10.0	10.0	6.7	3.3	3.3	0.0	10.0	0.0	26.7
12	0.0	6.9	6.9	0.0	3.4	3.4	0.0	3.4	6.9	13.8	6.9	6.9	0.0	3.4	6.9	0.0	31.0
13	0.0	0.0	10.0	6.7	6.7	3.3	3.3	3.3	10.0	6.7	10.0	0.0	6.7	3.3	10.0	0.0	20.0
14	0.0	10.0	3.3	0.0	13.3	0.0	0.0	6.7	13.3	6.7	13.3	0.0	6.7	6.7	0.0	10.0	10.0
15	0.0	6.9	0.0	6.9	10.3	0.0	3.4	3.4	10.3	6.9	6.9	0.0	3.4	6.9	10.3	3.4	20.7
16	0.0	3.6	7.1	0.0	14.3	3.6	0.0	3.6	7.1	10.7	10.7	0.0	3.6	7.1	3.6	7.1	17.9
17	0.0	3.3	6.7	0.0	6.7	0.0	3.3	10.0	3.3	10.0	6.7	0.0	3.3	6.7	13.3	3.3	23.3
18	0.0	3.2	6.5	3.2	6.5	0.0	3.2	9.7	6.5	12.9	0.0	3.2	0.0	6.5	0.0	12.9	25.8
19	6.5	3.2	9.7	6.5	3.2	0.0	6.5	3.2	9.7	12.9	6.5	0.0	3.2	0.0	0.0	3.2	25.8
20	9.7	3.2	6.5	3.2	6.5	3.2	3.2	3.2	12.9	6.5	3.2	0.0	0.0	0.0	0.0	0.0	38.7
21	6.5	9.7	0.0	3.2	6.5	6.5	0.0	0.0	22.6	6.5	3.2	0.0	0.0	0.0	0.0	0.0	35.5
22	9.7	6.5	0.0	3.2	6.5	3.2	3.2	3.2	19.4	3.2	3.2	0.0	0.0	0.0	0.0	0.0	38.7
23	12.9	3.2	3.2	3.2	6.5	0.0	6.5	3.2	22.6	0.0	3.2	0.0	0.0	0.0	0.0	0.0	35.5
24	12.9	0.0	3.2	6.5	12.9	0.0	3.2	9.7	12.9	3.2	3.2	0.0	0.0	0.0	0.0	0.0	32.3
ALL	6.0	4.2	4.1	2.7	7.3	3.2	2.3	5.1	13.4	5.9	4.5	1.4	1.6	2.1	3.3	2.2	30.7

NUMBER OF OBS = 730



NPPD-COOPER STATION 10-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINPER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

HR. OF DAY	WIND DIRECTION																	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	
1	11.1	4.4	1.1	1.1	3.3	2.2	10.0	7.8	18.9	7.8	1.1	2.2	1.1	1.1	8.9	5.6	12.2	100.
2	7.8	4.4	1.1	2.2	3.3	3.3	6.7	10.0	17.8	8.9	1.1	2.2	2.2	2.2	8.9	5.6	12.2	100.
3	8.9	5.6	1.1	3.3	2.2	4.4	4.4	13.3	15.6	5.6	3.3	1.1	2.2	2.2	7.8	6.7	12.2	100.
4	7.8	4.4	2.2	4.4	4.4	1.1	5.6	7.8	18.9	4.4	3.3	4.4	0.0	3.3	7.8	6.7	13.3	100.
5	11.1	5.6	4.4	1.1	2.2	4.4	5.6	12.2	16.7	4.4	0.0	2.2	0.0	3.3	8.9	5.6	12.2	100.
6	11.1	4.4	4.4	2.2	3.3	0.0	10.0	7.8	17.8	5.6	3.3	1.1	2.2	1.1	8.9	5.6	11.1	100.
7	10.0	4.4	1.1	2.2	2.2	3.3	4.4	16.7	20.0	3.3	1.1	2.2	2.2	3.3	5.6	5.6	12.2	100.
8	12.2	3.3	1.1	1.1	2.2	4.4	5.6	14.4	14.4	10.0	2.2	2.2	1.1	2.2	5.6	4.4	13.3	100.
9	7.9	5.6	5.6	1.1	2.2	3.4	6.7	9.0	14.6	9.0	6.7	0.0	3.4	3.4	3.4	7.9	10.1	100.
10	10.2	4.5	2.3	1.1	3.4	2.3	5.7	4.5	18.2	3.4	6.8	3.4	2.3	8.0	5.7	6.8	11.4	100.
11	13.5	2.2	3.4	1.1	3.4	2.2	4.5	3.4	15.7	12.4	4.5	1.1	3.4	7.9	4.5	7.9	9.0	100.
12	4.5	5.7	2.3	3.4	1.1	2.3	2.3	6.8	11.4	14.8	4.5	3.4	1.1	8.0	8.0	10.2	10.2	100.
13	7.9	2.2	4.5	3.4	2.2	2.2	2.2	3.4	14.6	12.4	6.7	2.2	5.6	5.6	6.7	11.2	6.7	100.
14	7.9	6.7	3.4	0.0	4.5	0.0	2.2	3.4	14.6	13.5	7.9	3.4	5.6	6.7	4.5	12.4	3.4	100.
15	9.1	5.7	1.1	2.3	3.4	0.0	2.3	3.4	13.6	13.6	6.8	2.3	2.3	8.0	10.2	9.1	6.8	100.
16	9.2	2.3	5.7	1.1	4.6	2.3	0.0	5.7	13.8	12.6	6.9	2.3	3.4	5.7	6.9	11.5	5.7	100.
17	5.6	4.5	3.4	2.2	2.2	1.1	3.4	11.2	11.2	9.0	5.6	1.1	2.2	2.2	18.0	9.0	7.9	100.
18	6.7	3.3	6.7	2.2	4.4	1.1	2.2	13.3	13.3	7.8	3.3	1.1	1.1	3.3	10.0	11.1	8.9	100.
19	8.9	5.6	7.8	2.2	1.1	2.2	3.3	6.7	13.3	8.9	8.9	3.3	1.1	2.2	4.4	11.1	8.9	100.
20	10.0	4.4	4.4	4.4	2.2	2.2	3.3	3.3	17.8	6.7	3.3	5.6	1.1	1.1	5.6	11.1	13.3	100.
21	7.8	6.7	0.0	3.3	2.2	2.2	2.2	5.6	20.0	11.1	4.4	1.1	3.3	1.1	7.8	8.9	12.2	100.
22	7.8	5.6	2.2	2.2	2.2	2.2	8.9	6.7	18.9	4.4	3.3	3.3	4.4	1.1	4.4	8.9	13.3	100.
23	11.1	6.7	1.1	2.2	3.3	2.2	6.7	10.0	15.6	5.6	4.4	2.2	3.3	2.2	4.4	6.7	12.2	100.
24	10.0	4.4	3.3	2.2	5.6	1.1	10.0	11.1	15.6	6.7	1.1	2.2	3.3	1.1	6.7	4.4	11.1	100.
ALL	9.1	4.7	3.1	2.2	3.0	2.2	4.9	8.2	15.9	8.4	4.2	2.3	2.4	3.6	7.2	8.1	10.4	100.

NUMBER OF OBS = 2146

NEFD-COOPER STATION 10-M WIND DIRECTION APR-JUNE 1990

PROGRAM: WINFDR  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

APRIL

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	0.0	3.3	3.3	3.3	3.3	6.7	6.7	16.7	23.3	3.3	6.7	0.0	0.0	3.3	10.0	10.0	0.0	100.
2	3.3	6.7	0.0	0.0	3.3	6.7	6.7	20.0	20.0	3.3	0.0	0.0	10.0	3.3	10.0	3.3	3.3	100.
3	13.3	3.3	3.3	0.0	0.0	6.7	3.3	20.0	20.0	3.3	0.0	3.3	0.0	10.0	6.7	3.3	3.3	100.
4	13.3	0.0	3.3	0.0	3.3	3.3	6.7	30.0	16.7	0.0	0.0	0.0	3.3	0.0	10.0	6.7	3.3	100.
5	13.3	0.0	0.0	0.0	3.3	0.0	16.7	16.7	23.3	0.0	0.0	0.0	3.3	0.0	10.0	10.0	3.3	100.
6	10.0	3.3	0.0	0.0	0.0	3.3	13.3	16.7	20.0	3.3	6.7	0.0	0.0	3.3	6.7	10.0	0.0	100.
7	3.3	0.0	3.3	0.0	3.3	0.0	10.0	20.0	26.7	0.0	6.7	0.0	0.0	3.3	6.7	16.7	0.0	100.
8	10.3	0.0	0.0	0.0	3.4	3.4	13.8	17.2	24.1	0.0	3.4	0.0	3.4	0.0	13.8	6.9	6.0	100.
9	10.3	0.0	0.0	0.0	0.0	6.9	3.4	13.8	27.6	10.3	0.0	0.0	3.4	3.4	6.9	13.8	0.0	100.
10	13.8	0.0	0.0	0.0	3.4	3.4	6.9	6.9	24.1	10.3	3.4	3.4	0.0	3.4	3.4	17.2	0.0	100.
11	10.0	0.0	3.3	0.0	3.3	3.3	6.7	0.0	16.7	16.7	3.3	6.7	0.0	3.3	3.3	23.3	0.0	100.
12	6.7	0.0	3.3	0.0	3.3	0.0	3.3	10.0	23.3	6.7	3.3	0.0	6.7	3.3	10.0	20.0	0.0	100.
13	6.7	3.3	3.3	0.0	0.0	0.0	3.3	6.7	20.0	10.0	6.7	3.3	0.0	3.3	10.0	23.3	0.0	100.
14	6.9	3.4	3.4	0.0	3.4	0.0	6.9	3.4	20.7	10.3	6.9	3.4	0.0	0.0	10.3	20.7	0.0	100.
15	6.7	0.0	3.3	0.0	0.0	3.3	6.7	3.3	23.3	13.3	3.3	0.0	3.3	0.0	10.0	23.3	0.0	100.
16	5.7	0.0	3.3	0.0	0.0	0.0	3.3	10.0	23.3	13.3	3.3	0.0	3.3	0.0	10.0	23.3	0.0	100.
17	10.0	0.0	0.0	3.3	0.0	0.0	10.0	6.7	26.7	6.7	6.7	0.0	0.0	0.0	10.0	20.0	0.0	100.
18	6.7	0.0	0.0	3.3	0.0	3.3	6.7	13.3	26.7	3.3	0.0	0.0	0.0	3.3	3.3	30.0	0.0	100.
19	10.0	0.0	0.0	3.3	0.0	3.3	6.7	20.0	20.0	6.7	0.0	0.0	0.0	0.0	10.0	20.0	0.0	100.
20	6.7	0.0	3.3	0.0	3.3	3.3	13.3	13.3	26.7	0.0	0.0	0.0	0.0	3.3	10.0	16.7	0.0	100.
21	6.7	0.0	0.0	0.0	6.7	6.7	10.0	13.3	16.7	6.7	0.0	0.0	0.0	0.0	10.0	23.3	0.0	100.
22	6.7	0.0	3.3	0.0	0.0	0.0	20.0	13.3	23.3	6.7	3.3	0.0	0.0	3.3	6.7	13.3	0.0	100.
23	6.7	10.0	0.0	0.0	5.3	0.0	13.3	13.3	20.0	6.7	0.0	0.0	0.0	0.0	10.0	13.3	3.3	100.
24	6.7	3.3	0.0	0.0	0.0	6.7	10.0	13.3	23.3	13.3	3.3	0.0	0.0	0.0	10.0	10.0	0.0	100.
ALL	8.1	1.5	1.7	0.6	2.0	2.9	8.7	13.3	22.3	6.4	2.8	0.8	1.8	2.0	8.7	15.8	0.7	100.

NUMBER OF OBS - 716

NPT-COOPER STATION 10-M WIND DIRECTION APR-JUNE 1990

PROGRAM: WINFER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

MAY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	9.7	6.5	6.5	6.5	9.7	6.5	9.7	3.2	19.4	3.2	0.0	3.2	3.2	3.2	3.2	6.5	0.0	100.
2	12.9	0.0	6.5	9.7	9.7	9.7	6.5	6.5	16.1	9.7	0.0	0.0	0.0	3.2	3.2	6.5	0.0	100.
3	9.7	9.7	6.5	0.0	3.2	3.2	12.9	12.9	9.7	9.7	3.2	0.0	3.2	3.2	3.2	9.7	0.0	100.
4	19.4	12.9	3.2	6.5	6.5	3.2	9.7	6.5	6.5	3.2	0.0	3.2	3.2	6.5	3.2	6.5	0.0	100.
5	9.7	9.7	9.7	3.2	6.5	3.2	6.5	3.2	3.2	16.1	6.5	0.0	0.0	6.5	6.5	9.7	0.0	100.
6	6.5	12.9	6.5	9.7	9.7	0.0	0.0	9.7	9.7	6.5	3.2	0.0	0.0	6.5	6.5	12.9	0.0	100.
7	12.9	6.5	3.2	9.7	6.5	9.7	6.5	3.2	9.7	3.2	3.2	0.0	0.0	9.7	3.2	12.9	0.0	100.
8	13.3	3.3	3.3	3.3	10.0	6.7	10.0	10.0	6.7	3.3	6.7	3.3	0.0	6.7	0.0	13.3	0.0	100.
9	13.3	3.3	0.0	6.7	6.7	3.3	16.7	6.7	10.0	10.0	0.0	3.3	3.3	3.3	6.7	6.7	0.0	100.
10	16.7	3.3	0.0	6.7	6.7	3.3	6.7	20.0	6.7	3.3	6.7	3.3	0.0	3.3	10.0	3.3	0.0	100.
11	13.3	6.7	3.3	3.3	6.7	3.3	13.3	6.7	10.0	3.3	3.3	0.0	3.3	10.0	10.0	3.3	0.0	100.
12	13.8	6.9	6.9	3.4	3.4	3.4	17.2	3.4	3.4	6.9	0.0	3.4	3.4	3.4	13.8	6.9	0.0	100.
13	10.3	6.9	10.3	0.0	3.4	3.4	6.9	6.9	10.3	3.4	0.0	3.4	2.4	10.3	6.9	13.8	6.0	100.
14	20.7	3.4	6.9	3.4	3.4	3.4	6.9	13.8	3.4	3.4	3.4	0.0	6.9	10.3	6.9	3.4	0.0	100.
15	6.9	10.3	10.3	3.4	6.9	3.4	10.3	6.9	3.4	3.3	3.3	0.0	6.9	10.3	6.9	6.9	0.0	100.
16	13.3	6.7	6.7	3.3	6.7	10.0	3.3	13.3	3.3	3.3	3.3	0.0	6.7	6.7	10.0	3.3	0.0	100.
17	6.5	12.9	9.7	3.2	0.0	12.9	6.5	6.5	9.7	3.2	3.2	3.2	3.2	6.5	6.5	6.5	0.0	100.
18	9.7	9.7	12.9	0.0	6.5	9.7	9.7	3.2	9.7	3.2	3.2	0.0	9.7	0.0	9.7	3.2	0.0	100.
19	9.7	6.5	16.1	3.2	3.2	12.9	0.0	12.9	3.2	9.7	3.2	3.2	3.2	0.0	3.2	9.7	0.0	100.
20	9.7	6.5	0.0	6.5	9.7	6.5	9.7	6.5	12.9	6.5	3.2	0.0	3.2	0.0	6.5	12.9	0.0	100.
21	12.9	6.5	3.2	0.0	9.7	12.9	6.5	9.7	9.7	9.7	0.0	3.2	3.2	3.2	0.0	9.7	0.0	100.
22	9.7	9.7	0.0	3.2	12.9	6.5	9.7	6.5	19.4	3.2	0.0	3.2	3.2	3.2	3.2	6.5	0.0	100.
23	6.5	3.2	3.2	9.7	6.5	16.1	3.2	6.5	19.4	3.2	0.0	6.5	0.0	6.5	0.0	9.7	0.0	100.
24	6.5	6.5	3.2	12.9	6.5	12.9	9.7	9.7	9.7	3.2	0.0	0.0	3.2	6.5	3.2	6.5	0.0	100.
ALL	11.4	7.1	5.7	4.9	6.7	7.0	8.2	8.1	9.4	5.7	2.2	1.6	3.0	5.3	5.5	7.9	0.0	100.

NUMBER OF OBS = 731



NPD-COOPER STATION 10-M WIND DIRECTION APR-JUNE 1990

PROGRAM: WINPER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

JUNE

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	CALM	TOTAL
1	3.3	10.0	10.0	0.0	0.0	6.7	3.3	23.3	23.3	3.3	0.0	3.3	0.0	0.0	3.3	10.0	0.0	100.
2	3.3	6.7	3.3	0.0	0.0	3.3	6.7	33.3	20.0	6.7	0.0	0.0	3.3	3.3	6.7	3.3	0.0	100.
3	6.7	3.3	6.7	0.0	3.3	0.0	6.7	20.0	23.3	10.0	3.3	3.3	6.7	3.3	0.0	3.3	0.0	100.
4	6.7	3.3	13.3	0.0	0.0	0.0	6.7	13.3	23.3	6.7	3.3	13.3	0.0	6.7	0.0	3.3	0.0	100.
5	3.3	6.7	16.7	3.3	3.3	0.0	6.7	16.7	16.7	6.7	3.3	0.0	3.3	6.7	3.3	3.3	0.0	100.
6	0.0	10.0	3.3	6.7	0.0	3.3	6.7	10.0	23.3	6.7	3.3	6.7	3.3	10.0	0.0	6.7	0.0	100.
7	3.3	10.0	0.0	0.0	13.3	0.0	13.3	10.0	20.0	6.7	0.0	3.3	3.3	6.7	3.3	6.7	0.0	100.
8	3.4	0.0	0.0	10.3	6.9	6.9	3.4	20.7	13.8	10.3	3.4	3.4	0.0	3.4	10.3	3.4	0.0	100.
9	6.9	3.4	0.0	6.9	3.4	6.9	3.4	3.4	24.1	10.3	3.4	0.0	3.4	3.4	10.3	10.3	0.0	100.
10	14.3	7.1	0.0	0.0	3.6	7.1	0.0	7.1	28.6	3.6	3.6	3.6	0.0	7.1	10.7	0.0	100.	
11	0.0	3.6	10.7	3.6	3.6	0.0	7.1	17.9	21.4	3.6	0.0	7.1	3.6	0.0	10.7	7.1	0.0	100.
12	0.0	3.6	10.7	3.6	3.6	0.0	7.1	14.3	21.4	7.1	7.1	3.6	0.0	3.6	10.7	3.6	0.0	100.
13	3.7	3.7	3.7	3.7	3.7	7.4	0.0	14.8	14.8	11.1	0.0	0.0	11.1	3.7	14.8	3.7	0.0	100.
14	7.1	10.7	0.0	3.6	7.1	0.0	3.6	10.7	25.0	7.1	0.0	0.0	7.1	3.6	7.1	3.6	3.6	100.
15	7.1	10.7	7.1	7.1	0.0	0.0	7.1	10.7	28.6	0.0	3.6	0.0	3.6	7.1	7.1	0.0	0.0	100.
16	6.7	3.3	13.3	3.3	10.0	3.3	6.7	10.0	26.0	6.7	0.0	0.0	0.0	6.7	10.0	0.0	0.0	100.
17	6.7	6.7	13.3	6.7	0.0	3.3	13.3	16.7	16.7	0.0	0.0	0.0	0.0	6.7	6.7	3.3	0.0	100.
18	6.7	16.7	0.0	6.7	6.7	0.0	10.0	16.7	20.0	0.0	0.0	0.0	0.0	6.7	3.3	6.7	0.0	100.
19	10.0	10.0	0.0	10.0	10.0	3.3	3.3	13.3	23.3	0.0	0.0	0.0	3.3	3.3	3.3	6.7	0.0	100.
20	6.7	6.7	0.0	10.0	6.7	6.7	6.7	20.0	13.3	0.0	0.0	0.0	6.7	0.0	3.3	13.3	0.0	100.
21	10.0	6.7	3.3	0.0	6.7	3.3	15.7	20.0	10.0	3.3	3.3	0.0	0.0	3.3	6.7	6.7	0.0	100.
22	13.3	0.0	0.0	3.3	3.3	3.3	13.3	23.3	16.7	0.0	6.7	0.0	3.3	0.0	3.3	10.0	0.0	100.
23	6.7	13.3	6.7	3.3	3.3	3.3	3.3	16.7	16.7	3.3	6.7	3.3	3.3	3.3	3.3	3.3	0.0	100.
24	6.7	10.0	10.0	3.3	3.3	6.7	3.3	23.3	16.7	3.3	0.0	3.3	0.0	0.0	3.3	6.7	0.0	100.
ALL	6.0	7.0	5.5	4.0	4.3	3.1	6.7	16.2	20.0	4.8	2.1	2.3	2.8	3.8	5.7	5.7	0.1	100.

NUMBER OF OBS = 705

NPFD-COOPER STATION 10-M WIND DIRECTION APR-JUNE 1990

PROGRAM: WINFER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	4.4	6.6	6.6	3.3	4.4	6.6	6.6	14.3	22.0	3.3	2.2	2.2	1.1	2.2	5.5	8.8	0.0	100.
2	6.6	4.4	3.3	3.3	4.4	6.6	6.6	19.8	18.7	6.6	0.0	0.0	4.4	3.3	6.6	4.4	1.1	100.
3	9.9	5.5	5.5	0.0	2.2	3.3	7.7	17.6	17.6	7.7	2.2	2.2	3.3	5.5	3.3	5.5	1.1	100.
4	13.2	5.5	6.6	2.2	3.3	2.2	7.7	16.5	15.4	3.3	1.1	5.5	2.2	4.4	4.4	5.5	1.1	100.
5	8.6	5.5	8.8	2.2	4.4	1.1	9.9	12.1	14.3	7.7	3.3	0.0	2.2	4.4	6.6	7.7	1.1	100.
6	5.5	8.8	3.3	5.5	3.3	2.2	6.6	12.1	17.6	5.5	4.4	2.2	3.3	5.5	4.4	9.9	0.0	100.
7	6.6	5.5	2.2	3.3	7.7	3.3	9.9	11.0	18.7	3.3	3.3	1.1	1.1	6.6	4.4	12.1	0.0	100.
8	9.1	1.1	1.1	4.5	6.6	5.7	9.1	15.9	14.8	4.5	4.5	2.3	1.1	1.1	8.0	8.0	0.0	100.
9	10.2	2.3	0.0	4.5	3.4	5.7	8.0	8.0	20.5	10.2	1.1	1.1	1.1	3.4	8.0	10.2	0.0	100.
10	14.9	3.4	0.0	2.3	4.6	4.6	4.6	11.5	19.5	5.7	4.6	3.4	1.1	2.3	6.9	10.3	0.0	100.
11	8.0	3.4	5.7	2.3	4.5	2.3	9.1	8.0	15.9	8.0	2.3	4.5	2.3	4.5	8.0	11.4	0.0	100.
12	6.9	3.4	6.9	2.3	3.4	1.1	9.2	9.2	16.1	6.9	3.4	2.3	3.4	3.4	11.4	10.3	0.0	100.
13	7.0	4.7	5.8	1.2	2.3	3.5	3.5	9.3	15.1	8.1	2.3	2.3	4.7	5.8	10.5	14.0	0.0	100.
14	11.6	5.8	3.5	2.3	4.7	1.2	5.8	9.3	16.3	7.0	3.5	1.2	4.7	4.7	8.1	9.3	1.2	100.
15	6.9	6.9	6.9	3.4	2.3	2.3	8.0	6.9	18.4	6.9	2.3	0.0	4.6	5.7	8.0	10.3	0.0	100.
16	8.9	3.3	7.8	2.2	5.6	4.4	4.4	11.1	15.6	7.8	2.2	0.0	3.3	4.4	10.0	8.9	0.0	100.
17	7.7	6.6	7.7	4.4	0.0	5.5	9.9	9.9	17.6	3.3	3.3	1.1	1.1	4.4	7.7	9.9	0.0	100.
18	7.7	8.8	4.4	3.3	4.4	4.4	8.8	11.0	16.7	2.2	1.1	0.0	3.3	3.3	5.5	13.2	0.0	100.
19	9.9	5.5	5.5	5.5	4.4	6.6	3.3	15.4	15.4	5.5	1.1	1.1	2.2	1.1	5.5	12.1	0.0	100.
20	7.7	4.4	1.1	5.5	6.6	5.5	9.9	13.2	17.6	2.2	1.1	0.0	3.3	1.1	6.6	14.3	0.0	100.
21	9.9	4.4	2.2	0.0	7.7	7.7	11.0	14.3	12.1	6.6	1.1	1.1	1.1	2.2	5.5	13.2	0.0	100.
22	9.9	3.3	1.1	2.2	5.5	3.3	14.3	14.3	19.8	3.3	3.3	1.1	2.2	2.2	4.4	9.9	0.0	100.
23	6.6	8.8	3.3	4.4	4.4	6.6	6.6	12.1	18.7	4.4	2.2	3.3	1.1	3.3	4.4	8.8	1.1	100.
24	6.6	6.6	4.4	5.5	3.3	8.8	7.7	15.4	16.5	6.6	1.1	1.1	1.1	2.2	5.5	7.7	0.0	100.
ALL	8.5	5.2	4.3	3.2	4.3	4.4	7.9	12.5	17.2	5.7	2.4	1.6	2.6	3.7	6.6	9.8	0.3	100.

NUMBER OF OBS - 2152

NPPD-COOPER STATION 10-M WIND DIRECTION JAN-JUNE 1990

PROGRAM: WINTER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

HR. OF DAY	WIND DIRECTION																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
1	7.7	5.5	3.9	2.2	3.9	4.4	8.3	11.0	20.4	5.5	1.7	2.2	1.1	1.7	7.2	7.2	6.1	100.
2	7.2	4.4	2.2	2.8	3.9	5.0	6.6	14.9	18.2	7.7	0.6	1.1	3.3	2.8	7.7	5.0	6.6	100.
3	9.4	5.5	3.3	1.7	2.2	3.9	6.1	15.5	16.6	6.6	2.8	1.7	2.8	3.9	5.5	6.1	6.6	100.
4	10.5	5.0	4.4	3.3	3.9	1.7	6.6	12.2	17.1	3.9	2.2	5.0	1.1	3.9	6.1	6.1	7.2	100.
5	9.9	5.5	6.6	1.7	3.3	2.8	7.7	12.2	15.5	6.1	1.7	1.1	1.1	3.9	7.7	6.6	6.6	100.
6	8.3	6.6	3.9	3.9	3.3	1.1	8.3	9.9	17.7	5.5	3.9	1.7	2.8	3.3	6.6	7.7	5.5	100.
7	8.3	5.0	1.7	2.8	5.0	3.3	7.2	13.8	19.3	3.3	2.2	1.7	1.7	5.0	5.0	8.8	6.1	100.
8	10.7	2.2	1.1	2.8	4.5	5.1	7.3	15.2	14.6	7.3	3.4	2.2	1.1	2.8	6.7	6.2	6.7	100.
9	9.0	4.0	2.8	2.8	2.8	4.5	7.3	8.5	17.5	9.6	4.0	0.6	3.4	3.4	5.6	9.0	5.1	100.
10	12.6	4.0	1.1	1.7	4.0	3.4	5.1	8.0	18.9	4.6	5.7	3.4	1.7	5.1	6.3	8.6	5.7	100.
11	10.7	2.8	4.5	1.7	4.0	2.3	6.8	5.6	15.8	10.2	3.4	2.8	2.8	6.2	6.2	9.6	4.5	100.
12	5.7	4.6	4.6	2.9	2.3	1.7	5.7	8.0	13.7	10.9	4.0	2.9	2.3	5.7	9.7	10.3	5.1	100.
13	7.4	3.4	5.1	2.3	2.3	2.9	2.9	6.3	14.9	10.3	4.6	2.3	5.1	5.7	8.6	12.6	3.4	100.
14	9.7	6.3	3.4	1.1	4.6	0.6	4.0	6.3	15.4	10.3	5.7	2.3	5.1	5.7	6.3	10.9	2.3	100.
15	8.0	6.3	4.0	2.9	2.9	1.1	5.1	5.1	16.0	10.3	4.6	1.1	3.4	6.9	9.1	9.7	3.4	100.
16	9.0	2.8	6.8	1.7	5.1	3.4	2.3	8.5	14.7	10.2	4.5	1.1	3.4	5.1	8.5	10.2	2.8	100.
17	6.7	5.6	5.6	3.3	1.1	3.3	6.7	10.6	14.4	6.1	4.4	1.1	1.7	3.3	12.8	9.4	3.9	100.
18	7.2	6.1	5.5	2.8	4.4	2.8	5.5	12.2	16.0	5.0	2.2	0.6	2.2	3.3	7.7	12.2	4.4	100.
19	9.4	5.5	6.6	3.9	2.8	4.4	3.3	11.0	14.4	7.2	5.0	2.2	1.7	1.7	5.0	11.6	4.4	100.
20	8.8	4.4	2.8	5.0	4.4	3.9	6.6	8.3	17.7	4.4	2.2	2.8	2.2	1.1	6.1	12.7	6.6	100.
21	8.8	5.5	1.1	1.7	5.0	5.0	6.6	9.9	16.0	8.8	2.8	1.1	2.2	1.7	6.6	11.0	6.1	100.
22	8.8	4.4	1.7	2.2	3.9	2.8	11.6	10.5	19.3	3.9	3.3	2.2	3.3	1.7	4.4	9.4	6.6	100.
23	8.8	7.7	2.2	3.3	3.9	4.4	6.6	11.0	17.1	5.0	3.3	2.8	2.2	2.8	4.4	7.7	6.6	100.
24	8.3	5.5	3.9	3.9	4.4	5.0	8.8	13.3	16.0	6.6	1.1	1.7	2.2	1.7	6.1	6.1	5.5	100.
ALL	8.8	5.0	3.7	2.7	3.7	3.3	6.4	10.4	16.6	7.0	3.3	2.0	2.5	3.7	6.9	8.9	5.4	100.

NUMBER OF OBS = 4298



Wind Direction Frequencies,  
100 Meter Level

NFFD-COOPER STATION 100-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINFER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

JANUARY

HR. OF DAY	WIND DIRECTION																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NNW	NW		
1	0.0	0.0	3.2	0.0	6.5	0.0	6.5	6.5	12.9	9.7	9.7	6.5	6.5	3.2	19.4	9.7	0.0	100.
2	0.0	0.0	0.0	0.0	3.2	6.5	3.2	9.7	9.7	6.5	16.1	9.7	3.2	3.2	16.1	12.9	0.0	100.
3	0.0	0.0	0.0	0.0	3.2	3.2	6.5	9.7	9.7	9.7	19.4	6.5	3.2	0.0	16.1	12.9	0.0	100.
4	0.0	0.0	0.0	0.0	6.5	0.0	3.2	12.9	6.5	6.5	25.8	3.2	3.2	3.2	16.1	12.9	0.0	100.
5	3.2	0.0	0.0	3.2	3.2	0.0	3.2	6.5	12.9	9.7	16.1	6.5	3.2	0.0	22.6	9.7	0.0	100.
6	3.2	0.0	0.0	3.2	6.5	0.0	3.2	3.2	22.6	6.5	12.9	3.2	3.2	3.2	19.4	9.7	0.0	100.
7	6.5	0.0	0.0	3.2	3.2	0.0	3.2	0.0	25.8	6.5	19.4	0.0	3.2	9.7	12.9	6.5	0.0	100.
8	6.5	0.0	0.0	3.2	3.2	0.0	3.2	3.2	25.8	3.2	19.4	6.5	3.2	6.5	12.9	6.5	0.0	100.
9	0.0	0.0	0.0	0.0	3.2	0.0	3.2	9.7	19.4	3.2	19.4	0.0	9.7	12.9	6.5	12.9	0.0	100.
10	0.0	0.0	0.0	0.0	3.2	0.0	3.2	6.5	9.7	19.4	12.9	3.2	0.0	16.1	0.0	22.6	0.0	100.
11	3.2	0.0	0.0	0.0	3.2	0.0	0.0	6.5	19.4	12.9	12.9	3.2	0.0	9.7	12.9	9.7	3.2	100.
12	6.5	0.0	0.0	0.0	3.2	0.0	0.0	3.2	19.4	19.4	9.7	3.2	3.2	9.7	12.9	9.7	0.0	100.
13	3.2	0.0	0.0	3.2	0.0	0.0	3.2	0.0	16.1	12.9	19.4	3.2	6.5	6.5	9.7	16.1	0.0	100.
14	3.2	3.2	0.0	3.2	0.0	0.0	3.2	0.0	16.1	16.1	16.1	12.9	9.7	3.2	9.7	9.7	0.0	100.
15	6.5	0.0	0.0	3.2	0.0	0.0	0.0	3.2	16.1	16.1	16.1	6.5	3.2	9.7	9.7	9.7	0.0	100.
16	6.5	0.0	3.2	3.2	0.0	0.0	0.0	3.2	22.6	9.7	19.4	6.5	0.0	6.5	12.9	6.5	0.0	100.
17	3.2	3.2	0.0	6.5	0.0	0.0	3.2	6.5	19.4	12.9	12.9	3.2	6.5	0.0	12.9	9.7	0.0	100.
18	3.2	0.0	3.2	3.2	0.0	0.0	3.2	6.5	22.6	12.9	9.7	6.5	3.2	0.0	12.9	9.7	0.0	100.
19	6.5	0.0	6.5	0.0	3.2	3.2	3.2	3.2	19.4	16.1	6.5	12.9	3.2	0.0	6.5	9.7	0.0	100.
20	6.5	0.0	0.0	6.5	0.0	6.5	3.2	0.0	19.4	9.7	9.7	16.1	3.2	0.0	12.9	6.5	0.0	100.
21	3.2	0.0	0.0	0.0	6.5	6.5	3.2	0.0	19.4	9.7	9.7	6.5	9.7	3.2	12.9	9.7	0.0	100.
22	0.0	0.0	0.0	6.5	0.0	3.2	6.5	3.2	16.1	9.7	6.5	6.5	6.5	6.5	16.1	12.9	0.0	100.
23	3.2	0.0	0.0	6.5	0.0	3.2	6.5	3.2	12.9	12.9	6.5	3.2	16.1	3.2	6.5	16.1	0.0	100.
24	0.0	0.0	0.0	0.0	6.5	3.2	0.0	6.5	16.1	9.7	9.7	3.2	12.9	9.7	3.2	19.4	0.0	100.
ALL	3.1	0.3	0.7	2.2	2.8	1.6	3.0	4.7	17.1	10.9	13.8	5.6	4.8	5.5	12.1	11.7	0.1	100.

NUMBER OF OBS = 744

NPPD-COOPER STATION 100-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINDR  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

FEBRUARY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WRW	CALM	TOTAL
1	14.3	7.1	3.6	0.0	0.0	7.1	3.6	7.1	14.3	7.1	7.1	3.6	7.1	0.0	7.1	10.7	0.0	100.
2	14.3	10.7	3.6	0.0	0.0	0.0	10.7	10.7	10.7	7.1	3.6	0.0	10.7	3.6	7.1	7.1	0.0	100.
3	14.3	7.1	7.1	0.0	0.0	0.0	10.7	10.7	10.7	7.1	3.6	0.0	10.7	0.0	7.1	10.7	0.0	100.
4	10.7	7.1	3.6	3.6	0.0	0.0	10.7	7.1	10.7	10.7	3.6	3.6	7.1	0.0	7.1	14.3	0.0	100.
5	10.7	3.6	7.1	0.0	3.6	3.6	10.7	3.6	10.7	7.1	3.6	3.6	7.1	3.6	3.6	17.9	0.0	100.
6	10.7	7.1	3.6	0.0	0.0	7.1	10.7	0.0	10.7	7.1	7.1	3.6	3.6	7.1	3.6	17.9	0.0	100.
7	14.3	3.6	7.1	0.0	0.0	3.6	14.3	0.0	7.1	10.7	7.1	7.1	3.6	7.1	0.0	14.3	0.0	100.
8	14.3	3.6	3.6	3.6	0.0	0.0	14.3	3.6	10.7	3.6	10.7	7.1	7.1	7.1	0.0	10.7	0.0	100.
9	14.3	7.1	3.6	3.6	3.6	3.6	10.7	0.0	7.1	7.1	7.1	10.7	7.1	0.0	7.1	7.1	0.0	100.
10	17.9	7.1	3.6	3.6	3.6	3.6	10.7	0.0	7.1	7.1	7.1	3.6	7.1	3.6	7.1	7.1	0.0	100.
11	10.7	10.7	3.6	3.6	0.0	3.6	7.1	3.6	7.1	10.7	7.1	0.0	3.6	7.1	7.1	14.3	0.0	100.
12	14.3	3.6	10.7	0.0	0.0	3.6	3.6	7.1	7.1	7.1	7.1	3.6	0.0	14.3	0.0	17.9	0.0	100.
13	25.0	7.1	3.6	0.0	0.0	0.0	3.6	3.6	14.3	7.1	7.1	0.0	7.1	7.1	3.6	10.7	0.0	100.
14	10.7	14.3	3.6	0.0	0.0	0.0	3.6	7.1	7.1	10.7	7.1	0.0	3.6	10.7	3.6	17.9	0.0	100.
15	25.0	10.7	0.0	0.0	0.0	0.0	3.6	7.1	3.6	14.3	7.1	0.0	0.0	10.7	7.1	10.7	0.0	100.
16	28.6	3.6	7.1	0.0	0.0	0.0	3.6	7.1	10.7	7.1	3.6	3.6	0.0	7.1	7.1	10.7	0.0	100.
17	14.3	7.1	7.1	0.0	0.0	0.0	3.6	0.0	10.7	7.1	3.6	3.6	0.0	7.1	7.1	10.7	0.0	100.
18	10.7	14.3	10.7	0.0	0.0	3.6	3.6	10.7	3.6	7.1	3.6	0.0	0.0	3.6	21.4	14.3	0.0	100.
19	7.1	10.7	14.3	0.0	0.0	3.6	10.7	0.0	7.1	10.7	3.6	0.0	0.0	3.6	10.7	17.9	0.0	100.
20	14.3	10.7	14.3	3.6	0.0	3.6	3.6	7.1	7.1	10.7	3.6	0.0	0.0	3.6	10.7	21.4	0.0	100.
21	7.1	17.9	0.0	3.6	7.1	0.0	10.7	7.1	7.1	7.1	3.6	0.0	0.0	3.6	7.1	14.3	0.0	100.
22	3.6	14.3	3.6	0.0	7.1	0.0	10.7	7.1	7.1	7.1	3.6	0.0	7.1	0.0	10.7	14.3	0.0	100.
23	7.1	10.7	3.6	0.0	3.6	7.1	10.7	0.0	14.3	3.6	3.6	3.6	3.6	3.6	17.9	7.1	0.0	100.
24	10.7	7.1	3.6	0.0	0.0	3.6	10.7	7.1	14.3	3.6	3.6	7.1	3.6	7.1	7.1	10.7	0.0	100.
ALL	13.5	8.6	5.4	1.0	1.2	2.5	8.0	5.2	9.2	7.6	5.7	2.5	4.5	4.8	7.1	13.2	0.0	100.

NUMBER OF OBS = 672



NPD-COOPER STATION 100-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINFER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

MARCH

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	9.7	3.2	3.2	3.2	6.5	3.2	6.5	12.9	25.8	6.5	3.2	3.2	3.2	6.5	0.0	3.2	0.0	100.
2	9.7	0.0	3.2	3.2	3.2	6.5	3.2	12.9	19.4	9.7	3.2	3.2	6.5	9.7	0.0	6.5	0.0	100.
3	6.5	0.0	3.2	3.2	6.5	0.0	9.7	9.7	12.9	12.9	3.2	6.5	9.7	3.2	0.0	12.9	0.0	100.
4	9.7	0.0	6.5	0.0	3.2	6.5	3.2	3.2	22.6	6.5	9.7	6.5	0.0	9.7	6.5	6.5	0.0	100.
5	6.5	3.2	6.5	0.0	6.5	6.5	0.0	0.0	25.8	9.7	3.2	3.2	6.5	12.9	3.2	6.5	0.0	100.
6	3.2	6.5	6.5	0.0	6.5	3.2	3.2	6.5	19.4	9.7	0.0	6.5	12.9	6.5	3.2	6.5	0.0	100.
7	3.2	3.2	9.7	0.0	3.2	6.5	0.0	9.7	22.6	6.5	0.0	9.7	9.7	6.5	3.2	6.5	0.0	100.
8	6.5	3.2	9.7	0.0	6.5	3.2	3.2	3.2	22.6	9.7	0.0	12.9	3.2	6.5	3.2	6.5	0.0	100.
9	6.7	3.3	10.0	0.0	6.7	6.7	0.0	6.7	13.3	10.0	6.7	10.0	6.7	6.7	3.3	3.3	0.0	100.
10	3.4	6.9	13.8	0.0	3.4	3.4	0.0	6.9	13.8	3.4	17.2	3.4	6.9	3.4	3.4	10.3	0.0	100.
11	13.3	3.3	10.0	0.0	6.7	6.7	0.0	6.7	10.0	10.0	13.3	3.3	6.7	0.0	10.0	0.0	0.0	100.
12	3.4	3.4	10.3	3.4	3.4	6.9	3.4	6.9	6.9	6.9	10.3	6.9	3.4	3.4	13.8	6.9	0.0	100.
13	6.7	0.0	10.0	6.7	3.3	1.3	0.0	6.7	10.0	3.3	13.3	0.0	6.7	3.3	13.3	3.3	0.0	100.
14	3.3	3.3	10.0	6.7	10.0	3.3	3.3	3.3	13.3	6.7	10.0	0.0	6.7	3.3	6.7	10.0	0.0	100.
15	0.0	3.4	6.9	6.9	13.8	3.4	3.4	3.4	10.3	0.0	13.8	3.4	3.4	10.3	6.9	10.3	0.0	100.
16	0.0	0.0	10.3	3.4	13.8	6.9	3.4	3.4	6.9	6.9	10.3	3.4	3.4	10.3	6.9	10.3	0.0	100.
17	3.3	3.3	6.7	3.3	10.0	0.0	10.0	6.7	3.3	13.3	3.3	3.3	3.3	13.3	13.3	3.3	0.0	100.
18	0.0	3.2	9.7	3.2	6.5	3.2	6.5	6.5	12.9	6.5	6.5	3.2	3.2	12.9	3.2	12.9	0.0	100.
19	6.5	6.5	3.2	6.5	6.5	3.2	6.5	6.5	12.9	6.5	6.5	9.7	6.5	0.0	3.2	9.7	0.0	100.
20	12.9	3.2	3.2	6.5	9.7	0.0	6.5	12.9	9.7	12.9	6.5	6.5	3.2	0.0	0.0	6.5	0.0	100.
21	9.7	9.7	3.2	3.2	3.2	12.9	3.2	6.5	22.6	6.5	6.5	6.5	3.2	0.0	0.0	3.2	0.0	100.
22	9.7	3.2	6.5	6.5	6.5	3.2	6.5	9.7	19.4	9.7	6.5	6.5	3.2	0.0	0.0	3.2	0.0	100.
23	9.7	6.5	3.2	3.2	6.5	3.2	9.7	9.7	22.6	9.7	3.2	3.2	6.5	0.0	0.0	3.2	0.0	100.
24	9.7	9.7	0.0	3.2	6.5	3.2	12.9	9.7	22.6	9.7	0.0	3.2	3.2	6.5	0.0	0.0	0.0	100.
ALL	6.4	3.7	6.8	3.0	6.6	4.8	4.4	7.1	16.0	8.1	6.4	5.2	5.3	5.6	4.2	6.3	0.0	100.

NUMBER OF OBS = 731

NFPD-COOPER STATION 100-M WIND DIRECTION JAN-MAR 1990

PROGRAM: WINPER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

HR. OF DAY	WIND DIRECTION																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
1	7.8	3.3	3.3	1.1	4.4	3.3	5.6	8.9	17.8	7.8	6.7	4.4	5.6	3.3	8.9	7.8	0.0	100.
2	7.8	3.3	2.2	1.1	2.2	4.4	5.6	11.1	13.3	7.8	7.8	4.4	6.7	5.6	7.8	8.9	0.0	100.
3	6.7	2.2	3.3	1.1	3.3	1.1	8.9	10.0	11.1	10.0	8.9	4.4	7.8	1.1	7.8	12.2	0.0	100.
4	6.7	2.2	3.3	1.1	3.3	2.2	5.6	7.8	13.3	7.8	13.3	4.4	3.3	4.4	10.0	11.1	0.0	100.
5	6.7	2.2	4.4	1.1	4.4	3.3	4.4	3.3	16.7	8.9	7.8	4.4	5.6	5.6	10.0	11.1	0.0	100.
6	5.6	4.4	3.3	1.1	4.4	3.3	5.6	3.3	17.8	7.8	6.7	4.4	6.7	5.6	8.9	11.1	0.0	100.
7	7.8	2.2	5.6	1.1	2.2	3.3	5.6	3.3	18.9	7.8	8.9	5.6	5.6	7.8	5.6	8.9	6.0	100.
8	8.9	2.2	4.4	1.1	3.3	2.2	5.6	3.3	20.0	5.6	10.0	8.9	4.4	6.7	5.6	7.8	0.0	100.
9	6.7	3.4	4.5	1.1	4.5	3.4	4.5	5.6	13.5	6.7	11.2	6.7	7.9	6.7	5.6	7.9	0.0	100.
10	6.8	4.5	5.7	1.1	3.4	2.3	4.5	4.5	10.2	10.2	12.5	3.4	4.5	6.8	9.1	9.1	1.1	100.
11	9.0	4.5	4.5	1.1	3.4	3.4	2.2	5.6	12.4	11.2	11.2	2.2	3.4	7.9	5.6	12.4	0.0	100.
12	8.0	2.3	6.8	1.1	2.3	3.4	2.3	5.7	11.4	11.4	9.1	4.5	2.3	9.1	9.1	11.4	0.0	100.
13	11.2	2.2	4.5	3.4	1.1	4.5	2.2	3.4	13.5	7.9	13.5	1.1	6.7	5.6	9.0	10.1	0.0	100.
14	5.6	6.7	4.5	3.4	3.4	1.1	3.4	3.4	12.4	11.2	10.1	3.4	4.5	6.7	6.7	13.5	0.0	100.
15	10.2	4.5	2.3	3.4	4.5	1.1	2.3	4.5	10.2	10.2	12.5	3.4	2.3	10.2	8.0	10.2	0.0	100.
16	11.4	1.1	6.8	2.3	4.5	2.3	2.3	4.5	13.6	8.0	11.4	4.5	1.1	8.0	6.8	11.4	0.0	100.
17	6.7	4.5	4.5	3.4	3.4	1.1	5.6	7.9	9.0	11.2	6.7	2.2	3.4	5.6	15.7	9.0	0.0	100.
18	4.4	5.6	7.8	2.2	3.3	2.2	3.3	7.8	14.4	7.8	7.8	3.3	2.2	5.6	8.9	13.3	0.0	100.
19	6.7	5.6	6.7	2.2	3.3	3.3	6.7	3.3	13.3	11.1	5.6	7.8	3.3	1.1	6.7	13.3	0.0	100.
20	11.1	4.4	5.6	5.6	3.3	3.3	4.4	6.7	12.2	10.0	6.7	7.8	2.2	1.1	6.7	8.9	0.0	100.
21	6.7	8.9	1.1	2.2	5.6	6.7	5.6	3.3	17.8	7.8	6.7	4.4	5.6	1.1	7.8	8.9	0.0	100.
22	4.4	5.6	3.3	4.4	4.4	2.2	7.8	6.7	14.4	8.9	6.7	4.4	5.6	2.2	7.8	11.1	0.0	100.
23	6.7	5.6	2.2	3.3	3.3	4.4	8.9	4.4	16.7	8.9	4.4	3.3	8.9	2.2	7.8	8.9	0.0	100.
24	6.7	5.6	1.1	1.1	4.4	3.3	7.8	7.8	17.8	7.8	4.4	4.4	6.7	7.8	3.3	10.0	0.0	100.
ALL	7.5	4.1	4.2	2.1	3.6	3.0	5.0	5.7	14.3	8.9	8.8	4.5	4.8	5.3	7.9	10.3	0.0	100.

NUMBER OF OBS = 2147

NEED-COOPER STATION 100-M WIND DIRECTION APR-JUNE 1990

PROGRAM: WINTER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

APRIL

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	0.0	6.7	0.0	3.3	0.0	10.0	6.7	10.0	23.3	6.7	6.7	0.0	0.0	0.0	13.3	13.3	0.0	100.
2	3.3	6.7	0.0	0.0	3.3	10.0	3.3	6.7	26.7	10.0	3.3	0.0	6.7	6.7	6.7	6.7	0.0	100.
3	3.3	3.3	6.7	0.0	0.0	6.7	6.7	6.7	23.3	13.3	3.3	0.0	3.3	3.3	16.7	3.3	0.0	100.
4	3.3	6.7	0.0	3.3	0.0	6.7	6.7	6.7	30.0	10.0	0.0	0.0	3.3	0.0	16.7	6.7	0.0	100.
5	6.7	6.7	3.3	0.0	0.0	3.3	10.0	3.3	30.0	6.7	6.7	0.0	0.0	6.7	6.7	10.0	0.0	100.
6	10.0	0.0	3.3	0.0	0.0	3.3	10.0	6.7	23.3	10.0	6.7	0.0	0.0	6.7	6.7	13.3	0.0	100.
7	6.7	0.0	0.0	0.0	6.7	3.3	10.0	10.0	13.3	16.7	3.3	0.0	0.0	6.7	10.0	13.3	0.0	100.
8	10.3	0.0	0.0	0.0	0.0	6.9	3.4	13.8	20.7	13.8	3.4	0.0	3.4	3.4	10.3	10.3	0.0	100.
9	10.3	3.4	0.0	0.0	0.0	6.9	0.0	6.9	31.0	13.8	3.4	0.0	3.4	3.4	3.4	13.8	0.0	100.
10	17.2	0.0	0.0	0.0	0.0	6.9	3.4	3.4	20.7	20.7	3.4	3.4	0.0	3.4	3.4	3.4	0.0	100.
11	10.0	0.0	0.0	0.0	6.7	3.3	6.7	0.0	13.3	20.0	3.3	3.3	3.3	3.3	3.3	3.3	0.0	100.
12	6.7	0.0	3.3	0.0	3.3	0.0	3.3	3.3	30.0	6.7	3.3	0.0	3.3	6.7	6.7	23.3	0.0	100.
13	6.7	0.0	3.3	0.0	0.0	0.0	3.3	6.7	20.0	10.0	3.3	3.3	3.3	3.3	10.0	26.7	0.0	100.
14	10.3	3.4	0.0	3.4	0.0	0.0	3.4	6.9	20.7	10.3	3.4	3.4	3.4	0.0	10.3	20.7	0.0	100.
15	6.7	0.0	3.3	0.0	0.0	0.0	3.3	6.7	26.7	13.3	3.3	0.0	3.3	0.0	10.0	23.3	0.0	100.
16	6.7	0.0	3.3	0.0	0.0	0.0	0.0	10.0	26.7	13.3	3.3	0.0	3.3	0.0	10.0	23.3	0.0	100.
17	10.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	3.3	30.0	3.3	6.7	0.0	3.3	0.0	20.0	0.0	100.
18	10.0	0.0	0.0	3.3	0.0	0.0	6.7	10.0	26.7	10.0	0.0	0.0	0.0	3.3	6.7	23.3	0.0	100.
19	13.3	0.0	0.0	0.0	3.3	3.3	6.7	16.7	23.3	6.7	0.0	0.0	0.0	0.0	3.3	23.3	0.0	100.
20	6.7	3.3	0.0	0.0	3.3	3.3	6.7	13.3	26.7	6.7	0.0	0.0	0.0	3.3	6.7	20.0	0.0	100.
21	10.0	0.0	3.3	0.0	0.0	6.7	13.3	6.7	26.7	3.3	0.0	0.0	0.0	3.3	3.3	23.3	0.0	100.
22	13.3	0.0	0.0	0.0	3.3	3.3	13.3	16.7	23.2	0.0	3.3	0.0	0.0	0.0	3.3	20.0	0.0	100.
23	10.0	0.0	0.0	0.0	0.0	3.3	16.7	10.0	20.0	10.0	0.0	0.0	0.0	0.0	10.0	20.0	0.0	100.
24	3.3	6.7	3.3	0.0	0.0	0.0	16.7	13.3	16.7	13.3	0.0	0.0	0.0	0.0	10.0	16.7	0.0	100.
ALL	8.1	2.0	1.4	0.7	1.3	3.6	7.1	8.2	23.9	10.3	2.9	0.6	1.8	2.7	8.2	17.2	0.0	100.

NUMBER OF OBS " 716



NPPD-COOPER STATION 100-M WIND DIRECTION APR-JUNE 1990

PROGRAM: WINPER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

MAY

HR. OF DAY	WIND DIRECTION																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WS			
1	9.7	0.0	3.2	6.5	12.9	9.7	12.9	6.5	12.9	9.7	0.0	0.0	0.0	9.7	3.2	3.2	0.0	100.
2	12.9	3.2	0.0	2.2	9.7	16.1	3.2	9.7	9.7	16.1	0.0	0.0	0.0	6.5	6.5	3.2	0.0	100.
3	9.7	3.2	6.5	3.2	6.5	9.7	6.5	6.5	12.9	6.5	6.5	0.0	3.2	6.5	9.7	3.2	0.0	100.
4	9.7	6.5	6.5	12.9	0.0	6.5	9.7	9.7	9.7	3.2	0.0	6.5	3.2	6.5	3.2	6.5	0.0	100.
5	9.7	6.5	6.5	6.5	3.2	16.1	3.2	6.5	6.5	9.7	3.2	3.2	0.0	6.5	6.5	6.5	0.0	100.
6	16.1	6.5	6.5	6.5	12.9	3.2	6.5	3.2	12.9	6.5	0.0	3.2	3.2	3.2	3.2	6.5	0.0	100.
7	12.9	0.0	0.0	9.7	6.5	19.4	3.2	3.2	9.7	3.2	3.2	0.0	3.2	6.5	6.5	12.9	0.0	100.
8	10.0	3.3	6.7	3.3	6.7	10.0	13.3	3.3	6.7	6.7	3.3	3.3	0.0	10.0	0.0	13.3	0.0	100.
9	13.3	6.7	0.0	6.7	6.7	3.3	16.7	6.7	6.7	10.0	0.0	3.3	3.3	3.3	6.7	6.7	0.0	100.
10	13.3	6.7	0.0	6.7	6.7	3.3	16.7	6.7	10.0	3.3	6.7	3.3	0.0	3.3	10.0	3.3	0.0	100.
11	13.3	6.7	3.3	3.3	3.3	3.3	16.7	6.7	10.0	3.3	0.0	3.3	3.3	10.0	6.7	6.7	0.0	100.
12	10.3	6.9	10.3	3.4	3.4	3.4	13.8	3.4	6.9	10.3	0.0	3.4	3.4	10.3	6.9	13.8	0.0	100.
13	10.3	6.9	6.9	3.4	3.4	3.4	6.9	6.9	10.3	3.4	3.4	0.0	6.9	10.3	6.9	6.9	0.0	100.
14	13.8	6.9	6.9	3.4	3.4	3.4	6.9	6.9	10.3	3.4	3.4	0.0	6.9	10.3	3.4	10.3	0.0	100.
15	6.9	6.9	6.9	10.3	6.9	0.0	13.8	6.9	3.4	3.4	3.3	3.3	0.0	6.7	6.7	6.7	0.0	100.
16	10.0	6.7	3.3	3.3	0.0	13.3	6.7	10.0	6.7	3.3	3.3	3.3	3.2	6.5	9.7	3.2	0.0	100.
17	6.5	9.7	12.9	0.0	3.2	12.9	6.5	6.5	9.7	3.2	3.2	3.2	0.0	9.7	3.2	3.2	0.0	100.
18	9.7	9.7	12.9	0.0	3.2	12.9	6.5	6.5	9.7	3.2	3.2	3.2	3.2	0.0	9.7	3.2	0.0	100.
19	6.5	6.5	16.1	3.2	3.2	16.1	0.0	12.9	3.2	9.7	3.2	3.2	3.2	0.0	6.5	6.5	0.0	100.
20	6.5	6.5	3.2	9.7	9.7	9.7	6.5	6.5	9.7	3.2	3.2	6.5	3.2	0.0	3.2	12.9	0.0	100.
21	9.7	6.5	3.2	3.2	9.7	16.1	6.5	3.2	12.9	6.5	3.2	3.2	3.2	3.2	3.2	6.5	0.0	100.
22	0.0	6.5	6.5	0.0	12.9	9.7	12.9	3.2	16.1	3.2	3.2	3.2	3.2	3.2	6.5	9.7	0.0	100.
23	0.0	0.0	9.7	3.2	9.7	16.1	12.9	0.0	12.9	12.9	0.0	0.0	6.5	6.5	0.0	9.7	0.0	100.
24	6.5	0.0	6.5	3.2	9.7	16.1	12.9	6.5	16.1	6.5	0.0	0.0	3.2	9.7	0.0	3.2	0.0	100.
ALL	9.4	5.5	6.2	4.8	6.4	10.0	8.6	6.6	9.8	6.2	2.2	2.1	3.6	5.9	5.7	7.1	0.0	100.

NUMBER OF OBS = 731

NPPD-COOPER STATION 100-M WIND DIRECTION APR-JUNE 1990  
 PROGRAM: WINPER  
 VERSION: 2P

HOURLY WIND ROSES (PERCENT)

JUNE

WIND DIRECTION																		
HR. OF DAY	N	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL		
1	3.3	6.7	0.0	0.0	7	23.3	16.7	10.0	0.0	3.3	0.0	3.3	6.7	3.3	0.0	100.		
2	0.0	0.0	3.3	3.3	0	26.7	10.0	16.7	3.3	3.3	3.3	3.3	6.7	3.3	0.0	100.		
3	0.0	6.7	3.3	10.0	7	16.7	20.0	13.3	6.7	0.0	3.3	3.3	3.3	3.3	0.0	100.		
4	0.0	6.7	0.0	3.3	1.0	10.0	16.7	16.7	13.3	3.3	3.3	3.3	3.3	3.3	0.0	100.		
5	0.0	3.3	0.0	3.3	3.3	10.0	23.3	10.0	10.0	0.0	3.3	13.3	3.3	3.3	0.0	100.		
6	0.0	6.7	0.0	3.3	6.7	20.0	13.3	6.7	6.7	3.3	3.3	10.0	6.7	3.3	0.0	100.		
7	3.3	0.0	0.0	0.0	10.0	20.0	13.3	6.7	3.3	3.3	3.3	6.7	6.7	6.7	0.0	100.		
8	0.0	3.4	0.0	6.7	6.9	3.4	3.4	13.8	20.7	6.9	3.4	6.9	0.0	10.3	6.9	0.0	100.	
9	10.3	0.0	3.4	3.4	3.4	6.9	0.0	3.4	27.6	10.3	3.4	0.0	3.4	10.3	10.3	0.0	100.	
10	17.9	3.6	0.0	0.0	3.6	3.6	3.6	7.1	28.6	3.6	3.6	3.6	0.0	10.7	7.1	0.0	100.	
11	0.0	3.6	7.1	7.1	3.6	7.1	3.6	10.7	21.4	7.1	3.6	7.1	3.6	0.0	10.7	3.6	0.0	100.
12	2.6	0.0	7.1	3.6	7.1	0.0	7.1	17.9	17.9	7.1	3.6	7.1	0.0	3.6	10.7	3.6	0.0	100.
13	3.7	0.0	3.7	3.7	3.7	0.0	7.4	14.8	14.8	11.1	0.0	0.0	7.4	3.7	18.5	7.4	0.0	100.
14	3.6	10.7	0.0	0.0	10.7	0.0	3.6	10.7	25.0	7.1	3.6	0.0	7.1	3.6	7.1	7.1	0.0	100.
15	10.7	3.6	7.1	3.6	3.6	0.0	7.1	14.3	21.4	7.1	3.6	0.0	3.6	7.1	7.1	0.0	0.0	100.
16	10.0	0.0	6.7	10.0	3.3	3.3	6.7	13.3	23.3	3.3	3.3	0.0	0.0	6.7	10.0	0.0	0.0	100.
17	13.3	0.0	6.7	6.7	3.3	0.0	16.7	13.3	23.3	0.0	0.0	0.0	0.0	6.7	6.7	3.3	0.0	100.
18	10.0	3.3	6.7	3.3	6.7	6.7	6.7	16.7	16.7	6.7	0.0	0.0	0.0	6.7	3.3	6.7	0.0	100.
19	10.0	3.3	6.7	6.7	6.7	10.0	3.3	10.0	23.3	3.3	0.0	0.0	3.3	3.3	3.3	6.7	0.0	100.
20	10.0	0.0	3.3	6.7	10.0	16.7	3.3	13.3	20.0	0.0	0.0	0.0	3.3	3.3	3.3	6.7	0.0	100.
21	6.7	0.0	0.0	3.3	13.3	6.7	16.7	20.0	13.3	3.3	0.0	3.3	0.0	3.3	3.3	6.7	0.0	100.
22	6.7	0.0	3.3	3.3	6.7	13.3	13.3	20.0	16.7	3.3	0.0	3.3	0.0	6.7	0.0	3.3	0.0	100.
23	3.3	0.0	6.7	6.7	6.7	6.7	6.7	23.3	16.7	0.0	0.0	6.7	6.7	3.3	3.3	3.3	0.0	100.
24	0.0	3.3	3.3	0.0	13.3	10.0	6.7	20.0	13.3	3.3	3.3	3.3	0.0	3.3	3.3	13.3	0.0	100.
ALL	5.2	2.7	4.3	4.3	5.5	5.1	7.1	15.5	19.0	6.8	3.1	2.4	2.6	5.0	6.8	5.1	0.0	100.

NUMBER OF OBS = 705



NPPD-COOPER STATION 100-M WIND DIRECTION APR-JUNE 1990

PROGRAM: WINPER  
VERSION: 2P

HOURLY WIND ROSES (PERCENT)

HR. OF DAY	WIND DIRECTION																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
1	4.4	4.4	2.2	5.5	4.4	8.8	8.8	13.2	17.6	8.8	2.2	1.1	0.0	4.4	7.7	4.4	0.0	100.
2	5.5	3.3	2.2	2.2	5.5	8.8	5.5	14.3	15.4	14.3	2.2	1.1	3.3	5.5	6.6	4.4	0.0	100.
3	4.4	4.4	4.4	2.2	3.3	8.8	6.6	9.9	18.7	11.0	5.5	0.0	3.3	4.4	9.9	3.3	0.0	100.
4	4.4	6.6	3.3	6.6	0.0	5.5	8.8	8.8	18.7	9.9	4.4	3.3	3.3	3.3	7.7	5.5	0.0	100.
5	5.5	5.5	5.5	3.3	2.2	7.7	5.5	6.6	19.8	8.8	6.6	1.1	1.1	8.8	5.5	6.6	0.0	100.
6	8.8	4.4	4.4	3.3	5.5	3.3	7.7	9.9	16.5	7.7	4.4	2.2	2.2	6.6	5.5	7.7	0.0	100.
7	7.7	0.0	2.2	4.4	6.6	7.7	7.7	11.0	12.1	8.8	3.3	1.1	2.2	6.6	7.7	11.0	0.0	100.
8	6.8	2.3	2.3	3.4	4.5	6.8	6.8	10.2	15.9	9.1	3.4	3.4	1.1	8.0	5.7	10.2	0.0	100.
9	11.4	3.4	1.1	3.4	3.4	5.7	5.7	5.7	21.6	11.4	2.3	1.1	3.4	3.4	6.8	10.2	0.0	100.
10	16.1	3.4	0.0	2.3	3.4	5.7	3.4	9.2	19.5	9.2	4.6	3.4	1.1	2.3	6.9	8.0	0.0	100.
11	8.0	3.4	3.4	3.4	4.5	4.5	9.1	5.7	14.8	10.2	2.3	4.5	3.4	4.5	8.8	11.4	0.0	100.
12	6.9	2.3	6.9	2.3	4.6	1.1	8.0	8.0	18.4	6.9	2.3	2.3	3.4	4.6	10.9	11.5	0.0	100.
13	7.0	2.3	4.7	2.3	2.3	1.2	5.8	9.3	15.1	8.1	1.2	2.3	4.7	5.8	12.6	16.3	0.0	100.
14	9.3	7.0	2.3	2.3	4.7	1.2	4.7	8.1	18.6	7.0	3.5	1.2	5.8	6.9	8.1	11.6	0.0	100.
15	8.0	3.4	5.7	4.6	3.4	0.0	8.0	9.2	17.2	8.0	3.4	0.0	4.6	5.7	6.9	11.5	0.0	100.
16	8.9	3.3	5.6	4.4	1.1	5.6	4.4	11.1	18.9	6.7	3.3	0.0	3.3	4.6	8.9	10.0	0.0	100.
17	9.9	3.3	6.6	3.3	2.2	4.4	11.0	7.7	20.9	2.2	3.3	1.1	2.2	4.4	8.8	8.8	0.0	100.
18	9.9	4.4	6.6	2.2	3.3	6.6	6.6	11.0	17.6	6.6	1.1	0.0	3.3	3.3	6.6	11.0	0.0	100.
19	9.9	3.3	7.7	3.3	4.4	9.9	3.3	13.2	16.5	6.6	1.1	1.1	2.2	1.1	4.4	12.1	0.0	100.
20	7.7	3.3	2.2	5.5	7.7	9.9	5.5	11.0	18.7	3.3	1.1	2.2	2.2	2.2	4.4	13.2	0.0	100.
21	8.8	2.2	2.2	2.2	7.7	9.9	12.1	9.9	17.6	4.4	1.1	2.2	1.1	3.3	3.3	12.1	0.0	100.
22	6.6	2.2	3.3	1.1	7.7	8.8	13.2	13.2	18.7	2.2	2.2	2.2	1.1	3.3	3.3	11.0	0.0	100.
23	4.4	0.0	5.5	3.3	5.5	8.8	12.1	11.0	16.5	7.7	0.0	2.2	4.4	3.3	4.4	11.0	0.0	100.
24	3.3	3.3	4.4	1.1	7.7	8.8	12.1	13.2	15.4	7.7	1.1	1.1	1.1	4.4	4.4	11.0	0.0	100.
ALL	7.6	3.4	3.9	3.3	4.4	6.3	7.6	10.0	17.5	7.8	2.7	1.7	2.7	4.5	6.8	9.8	0.0	100.

NUMBER OF OBS = 2152



## NEPD-COOPER STATION 160-M WIND DIRECTION JAN-JUNE 1990

PROGRAM: WINPER

VERSION: 2P

## HOURLY WIND ROSES (PERCENT)

HR. OF DAY	WIND DIRECTION																CALM	TOTAL
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		
1	6.1	3.9	2.8	3.3	4.4	6.1	7.2	11.0	17.7	8.3	4.4	2.8	2.8	3.9	8.3	7.2	0.0	100.
2	6.6	3.3	2.2	1.7	3.9	6.6	5.5	12.7	14.4	11.0	5.0	2.8	5.0	5.5	7.2	6.6	0.0	100.
3	5.5	3.3	3.9	1.7	3.3	5.0	7.7	9.9	14.9	10.5	7.2	2.2	5.5	2.8	8.8	7.7	0.0	100.
4	5.5	4.4	3.3	3.9	1.7	3.9	7.2	8.3	16.0	8.8	8.8	3.9	3.3	3.9	8.8	8.3	0.0	100.
5	6.1	3.9	5.0	2.2	3.3	5.5	5.0	5.0	18.2	8.8	7.2	2.8	3.3	7.2	7.7	8.8	0.0	100.
6	7.2	4.4	3.9	2.2	5.0	3.3	6.6	6.6	17.1	7.7	5.5	3.3	4.4	6.1	7.2	9.4	0.0	100.
7	7.7	1.1	3.9	2.8	4.4	5.5	6.6	7.2	15.5	8.3	6.1	3.3	3.9	7.2	6.6	9.9	0.0	100.
8	7.9	2.2	3.4	2.2	3.9	4.5	6.2	6.7	18.0	7.3	6.7	6.2	2.8	7.3	5.6	9.0	0.0	100.
9	9.0	3.4	2.8	2.3	4.0	4.5	5.1	5.6	17.5	9.0	6.8	4.0	5.6	5.1	6.2	9.0	0.0	100.
10	11.4	4.0	2.9	1.7	3.4	4.0	4.0	6.9	14.9	9.7	8.6	3.4	2.9	4.6	8.6	8.6	0.6	100.
11	8.5	4.0	4.0	2.3	4.0	4.0	5.6	5.6	13.6	10.7	6.8	3.4	3.4	6.2	6.2	11.9	0.0	100.
12	7.4	2.3	6.9	1.7	3.4	2.3	5.1	6.9	14.9	9.1	5.7	3.4	2.9	6.9	9.7	11.4	0.0	100.
13	9.1	2.3	4.6	2.9	1.7	2.9	4.0	6.3	14.3	8.0	7.4	1.7	5.7	5.7	10.3	13.1	0.0	100.
14	7.4	6.9	3.4	2.9	4.0	1.1	4.0	5.7	15.4	9.1	6.9	2.3	5.1	5.7	7.4	12.6	0.0	100.
15	9.1	4.0	4.0	4.0	4.0	0.6	5.1	6.9	13.7	9.1	8.0	1.7	3.4	8.0	7.4	10.9	0.0	100.
16	10.1	2.2	6.2	3.4	2.8	3.9	3.4	7.9	16.3	7.3	7.3	2.2	2.2	6.2	7.9	10.7	0.0	100.
17	8.3	3.9	5.6	3.3	2.8	2.8	8.3	7.8	15.0	6.7	5.0	1.7	2.8	5.0	12.2	8.9	0.9	100.
18	7.2	5.0	7.2	2.2	3.3	4.4	5.0	9.4	16.0	7.2	4.4	1.7	2.8	4.4	7.7	12.2	0.0	100.
19	8.3	4.4	7.2	2.8	3.9	6.6	5.0	8.3	14.9	8.8	3.3	4.4	2.8	1.1	5.5	12.7	0.0	100.
20	9.4	3.9	3.9	5.5	5.5	6.6	5.0	8.8	15.5	6.6	3.9	5.0	2.2	1.7	5.5	11.0	0.6	100.
21	7.7	5.5	1.7	2.2	6.6	8.3	8.8	6.6	17.7	6.1	3.9	3.3	3.3	2.2	5.5	10.5	0.0	100.
22	5.5	3.9	3.3	2.8	6.1	5.5	10.5	9.9	16.6	5.5	4.4	3.3	3.3	2.8	5.5	11.0	0.0	100.
23	5.5	2.8	3.9	3.3	4.4	6.6	10.5	7.7	16.6	8.3	2.2	2.8	6.6	2.8	6.1	9.9	0.0	100.
24	5.0	4.4	2.8	1.1	6.1	6.1	9.9	10.5	16.6	7.7	2.8	2.8	3.9	6.1	3.9	10.5	0.0	100.
ALL	7.6	3.7	4.1	2.7	4.0	4.6	6.3	7.9	15.9	8.3	5.7	3.1	3.7	4.9	7.3	10.1	0.0	100.

NUMBER OF OBS = 4299

## Precipitation

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MONT	TOTAL
90	1	1	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	3	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.40
90	1	4	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10
90	1	5	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	6	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	7	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	8	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	9	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	12	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	13	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	14	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	15	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	16	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	17	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00



NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
90	1	18	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	19	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.10	0.10
90	1	20	0.00 0.00	0.10 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.30
90	1	21	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	22	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	23	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	24	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	25	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	26	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	27	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	28	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	29	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	30	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	1	31	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

MONTH OF JANUARY

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 8  
TOTAL DAYS WITH PRECIPITATION - 4  
TOTAL AMOUNT OF PRECIPITATION - 0.90 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.20 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.40 INCHES

	1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS DAY	3 HOUR	22	-	0.20 INCHES
1	HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS DAY	3	HOUR	20	-
6	HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS DAY	3	HOUR	20	-
12	HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS DAY	3	HOUR	20	-
18	HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS DAY	3	HOUR	20	-
24	HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS DAY	3	HOUR	20	-

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS - 252  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 1  
TOTAL DAYS WITH PRECIPITATION - 1  
TOTAL AMOUNT OF PRECIPITATION - 0.10 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.10 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.10 INCHES

NPFD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

MONTH OF JANUARY

PRECIPITATION INTENSITY - DURATION  
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	1	6	12	18	24
0.01	8	26	41	53	65
0.02	8	26	41	53	65
0.03	8	26	41	53	65
0.04	8	26	41	53	65
0.05	8	26	41	53	65
0.07	8	26	41	53	65
0.10	8	26	41	53	65
0.15	1	13	26	38	50
0.20	1	13	26	38	50
0.25	0	9	23	35	47
0.30	0	9	23	35	47
0.35	0	5	11	23	35
0.40	0	5	11	23	35
0.45	0	1	7	13	19
0.50	0	1	7	13	19
0.60	0	0	0	0	0
0.70	0	0	0	0	0
0.80	0	0	0	0	0
0.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN



NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MONT	TOTAL
90	2	1	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	3	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	4	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	5	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	6	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	7	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	8	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	9	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	12	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	13	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	14	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.20
90	2	15	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.20
90	2	16	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	17	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12M 12:00MT	TOTAL
90	2	18	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	19	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	20	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	21	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	22	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	23	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	24	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	25	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	26	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	27	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	2	28	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

MONTH OF FEBRUARY

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 672  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 4  
TOTAL DAYS WITH PRECIPITATION - 2  
TOTAL AMOUNT OF PRECIPITATION - 0.40 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.10 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.20 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 15 HOUR 16 - 0.10 INCHES  
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 14 HOUR 17 - 0.20 INCHES  
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 15 HOUR 8 - 0.20 INCHES  
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 14 HOUR 17 - 0.30 INCHES  
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 14 HOUR 17 - 0.40 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS - 365  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 2  
TOTAL DAYS WITH PRECIPITATION - 1  
TOTAL AMOUNT OF PRECIPITATION - 0.20 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.10 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.20 INCHES



NFPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

MONTH OF FEBRUARY

PRECIPITATION INTENSITY - DURATION  
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	1	6	12	18	24
0.01	4	22	35	41	47
0.02	4	22	35	41	47
0.03	4	22	35	41	47
0.04	4	22	35	41	47
0.05	4	22	35	41	47
0.07	4	22	35	41	47
0.10	4	22	35	41	47
0.15	0	2	13	28	35
0.20	0	2	13	28	35
0.25	0	0	0	3	13
0.30	0	0	0	3	13
0.35	0	0	0	0	1
0.40	0	0	0	0	1
0.45	0	0	0	0	0
0.50	0	0	0	0	0
0.60	0	0	0	0	0
0.70	0	0	0	0	0
0.80	0	0	0	0	0
0.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NFPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2F

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12E 12MONT	TOTAL
90	3	1	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	3	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	4	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	5	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	6	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.12
90	3	7	0.00 0.00	0.11 0.00	0.11 0.00	0.11 0.00	0.00 0.00	0.00 0.00	0.11 0.11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.55
90	3	8	0.00 0.00	0.00 0.00	0.14 0.00	0.14 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.28
90	3	9	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.17	0.00 0.17	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.34
90	3	11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.01	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.01
90	3	12	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	13	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.20	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.20
90	3	14	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.07
90	3	15	0.00 0.00	0.10 0.00	0.10 0.00	0.00 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.20 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.50
90	3	16	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	17	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NPFD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	2M 12MONTH	TOTAL
90	3	18	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	19	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	20	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	21	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	22	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	23	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.12 0.00	0.00 0.12	0.00 0.00	0.12 0.00	0.00 0.00	0.00 0.00	0.36
90	3	24	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	25	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	26	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	27	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	3	28	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.15	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.63
90	3	29	0.00 0.00	0.15 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.18
90	3	30	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.10	0.00 0.00	0.00 0.10	0.20
90	3	31	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00



NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

MONTH OF MARCH

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 32  
TOTAL DAYS WITH PRECIPITATION - 12  
TOTAL AMOUNT OF PRECIPITATION - 3.44 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.20 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.63 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 15 HOUR 9 - 0.20 INCHES  
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 7 HOUR 2 - 0.44 INCHES  
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 16 - 0.57 INCHES  
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 11 - 0.73 INCHES  
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 5 - 0.81 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS - 74  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 0  
TOTAL DAYS WITH PRECIPITATION - 0  
TOTAL AMOUNT OF PRECIPITATION - 0.00 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.00 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

MONTH OF MARCH

PRECIPITATION INTENSITY - DURATION  
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS)				
	1	6	12	18	24
0.01	32	121	187	239	281
0.02	31	115	175	221	257
0.03	31	115	175	221	257
0.04	31	115	175	221	257
0.05	28	111	173	219	255
0.07	28	111	173	219	255
0.10	21	91	150	192	234
0.15	6	63	117	170	214
0.20	2	52	108	160	204
0.25	0	28	65	102	144
0.30	0	20	54	90	126
0.35	0	3	32	63	98
0.40	0	1	26	47	69
0.45	0	0	19	42	65
0.50	0	0	8	32	59
0.60	0	0	0	7	16
0.70	0	0	0	3	
0.80	0	0	0	0	3
0.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

FOR ALL TEMPERATURES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS -	631
NUMBER OF MISSING HOURS -	0
TOTAL HOURS OF PRECIPITATION -	3
TOTAL DAYS WITH PRECIPITATION -	2
TOTAL AMOUNT OF PRECIPITATION -	0.30 INCHES
MAXIMUM 1-HOUR PRECIPITATION -	0.10 INCHES
MAXIMUM DAILY PRECIPITATION -	0.20 INCHES



NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-MARCH 1990  
RAIN VERSION # 2P

PRECIPITATION INTENSITY - DURATION  
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS)				
	1	6	12	18	24
0.01	44	169	263	333	393
0.02	43	163	251	315	369
0.03	43	163	251	315	369
0.04	43	163	251	315	369
0.05	40	159	249	313	367
0.07	40	159	249	313	367
0.10	33	139	226	286	346
0.15	7	78	156	236	299
0.20	3	67	147	226	289
0.25	0	37	88	140	204
0.30	0	29	77	128	186
0.35	0	8	43	86	134
0.40	0	6	37	70	105
0.45	0	1	26	55	84
0.50	0	1	15	45	78
0.60	0	0	0	7	16
0.70	0	0	0	3	9
0.80	0	0	0	0	3
0.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

NFFD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MONT	TOTAL
90	4	1	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	3	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	4	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	5	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	6	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	7	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	8	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	9	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.18
90	4	10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	12	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	13	0.00 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.20 0.00	0.00 0.00	0.40
90	4	14	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	15	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.18
90	4	16	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.09
90	4	17	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12PM	TOTAL
90	4	18	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	19	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	20	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	21	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	22	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	23	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	24	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	25	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	26	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	27	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.03
90	4	28	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	29	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	4	30	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00



NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

MONTH OF APRIL

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 720  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 10  
TOTAL DAYS WITH PRECIPITATION - 5  
TOTAL AMOUNT OF PRECIPITATION - 0.86 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.20 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.40 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 11 - 0.20 INCHES  
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 11 - 0.20 INCHES  
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 2 - 0.40 INCHES  
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 2 - 0.40 INCHES  
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 2 - 0.40 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS - 34  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 0  
TOTAL DAYS WITH PRECIPITATION - 0  
TOTAL AMOUNT OF PRECIPITATION - 0.00 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.00 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

MONTH OF APRIL

PRECIPITATION INTENSITY - DURATION  
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS)			
	1	6	12	18
0.01	10	47	83	116
0.02	10	47	83	116
0.03	10	47	83	116
0.04	9	41	71	98
0.05	9	41	71	98
0.07	6	33	57	82
0.10	3	25	43	62
0.15	1	14	29	43
0.20	1	9	18	24
0.25	0	0	6	12
0.30	0	0	6	12
0.35	0	0	3	9
0.40	0	0	3	9
0.45	0	0	0	0
0.50	0	0	0	0
0.60	0	0	0	0
0.70	0	0	0	0
0.80	0	0	0	0
0.90	0	0	0	0
1.00	0	0	0	0
1.10	0	0	0	0
1.20	0	0	0	0
1.30	0	0	0	0
1.40	0	0	0	0
1.50	0	0	0	0
1.60	0	0	0	0
1.70	0	0	0	0
1.80	0	0	0	0
1.90	0	0	0	0
2.00	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12-MIDN	TOTAL
90	5	1	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	3	0.00 0.00	0.00 0.10	0.00 0.10	0.00 0.20	0.00 0.20	0.00 0.00	0.00 0.10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.79
90	5	4	0.00 0.00	0.00 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.20
90	5	5	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	6	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	7	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	8	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	9	0.00 0.10	0.20 0.10	0.20 0.00	0.10 0.10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.20
90	5	12	0.00 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.10 0.00	0.10 0.00	0.10 0.00	0.00 0.00	0.50
90	5	13	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	14	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	15	0.00 0.00	0.00 0.00	0.00 0.00	0.20 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.00 0.00	0.20 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.50
90	5	16	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	17	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00



NFPO-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR- JUNE 1990  
RAIN VERSION # 2F

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12M 12MDNT	TOTAL
90	5	18	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	19	0.00 0.00	0.00 0.00	0.20 0.10	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.50
90	5	20	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	21	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	22	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	23	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.01 0.00	0.00 0.00	0.00 0.00	0.01
90	5	24	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.30 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.10	0.60
90	5	25	0.10 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10
90	5	26	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	27	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	28	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	5	29	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.01 0.00	0.01
90	5	30	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10 0.00	0.10 0.00	0.00 0.00	0.00 0.00	0.20
90	5	31	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

MONTH OF MAY

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 36  
TOTAL DAYS WITH PRECIPITATION - 12  
TOTAL AMOUNT OF PRECIPITATION - 4.32 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.30 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.80 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 24 HOUR 6 - 0.30 INCHES  
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 3 HOUR 14 - 0.70 INCHES  
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 3 HOUR 14 - 0.70 INCHES  
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 9 HOUR 2 - 0.80 INCHES  
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 3 HOUR 14 - 0.90 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS - 0  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 0  
TOTAL DAYS WITH PRECIPITATION - 0  
TOTAL AMOUNT OF PRECIPITATION - 0.00 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.00 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

MONTH OF MAY

PRECIPITATION INTENSITY - DURATION  
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS)				
	1	6	12	18	24
0.01	36	122	192	251	297
0.02	34	110	168	215	257
0.03	34	110	168	215	257
0.04	34	110	168	215	257
0.05	34	110	168	215	257
0.07	34	110	168	215	257
0.10	34	110	168	215	257
0.15	8	69	142	195	237
0.20	8	69	142	195	237
0.25	1	39	87	126	163
0.30	1	39	87	126	163
0.35	0	21	55	93	129
0.40	0	21	55	93	129
0.45	0	14	45	79	116
0.50	0	14	45	79	116
0.60	0	4	12	32	56
0.70	0	1	7	24	46
0.80	0	0	0	10	22
0.90	0	0	0	0	6
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN



NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

YR	MO	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
90	6	1	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	3	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	4	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	5	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	6	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	7	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	8	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	9	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	12	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	13	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	14	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	15	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	16	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	17	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NFFD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MNT	TOTAL
90	6	18	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	19	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	20	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	21	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	22	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	23	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	24	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	25	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	26	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	27	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	28	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	29	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00
90	6	30	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00

NFFD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

MONTH OF JUNE

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS -	720	
NUMBER OF MISSING HOURS -	0	
TOTAL HOURS OF PRECIPITATION -	0	
TOTAL DAYS WITH PRECIPITATION -	0	
TOTAL AMOUNT OF PRECIPITATION -	0.00 INCHES	
MAXIMUM 1-HOUR PRECIPITATION -	0.00 INCHES	
MAXIMUM DAILY PRECIPITATION -	0.00 INCHES	
1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 30 HOUR 24 -	0.00 INCHES	
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 30 HOUR 19 -	0.00 INCHES	
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 30 HOUR 13 -	0.00 INCHES	
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 30 HOUR 7 -	0.00 INCHES	
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 30 HOUR 1 -	0.00 INCHES	

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FAHRENHEIT

TOTAL NUMBER OF HOURS -	0
NUMBER OF MISSING HOURS -	0
TOTAL HOURS OF PRECIPITATION -	0
TOTAL DAYS WITH PRECIPITATION -	0
TOTAL AMOUNT OF PRECIPITATION -	0.00 INCHES
MAXIMUM 1-HOUR PRECIPITATION -	0.00 INCHES
MAXIMUM DAILY PRECIPITATION -	0.00 INCHES



NFPA-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
 RAIN VERSION # 2F

MONTH OF JUNE

PRECIPITATION INTENSITY - DURATION  
 (NUMBER OF OCCURRENCES)

AMOUNT INCHES	1	6	12	18	24
0.01	0	0	0	0	0
0.02	0	0	0	0	0
0.03	0	0	0	0	0
0.04	0	0	0	0	0
0.05	0	0	0	0	0
0.07	0	0	0	0	0
0.10	0	0	0	0	0
0.15	0	0	0	0	0
0.20	0	0	0	0	0
0.25	0	0	0	0	0
0.30	0	0	0	0	0
0.35	0	0	0	0	0
0.40	0	0	0	0	0
0.45	0	0	0	0	0
0.50	0	0	0	0	0
0.60	0	0	0	0	0
0.70	0	0	0	0	0
0.80	0	0	0	0	0
0.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 2184  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 46  
TOTAL DAYS WITH PRECIPITATION - 17  
TOTAL AMOUNT OF PRECIPITATION - 5.20 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.30 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.80 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 24 HOUR 6 - 0.30 INCHES  
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 3 HOUR 14 - 0.70 INCHES  
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 3 HOUR 14 - 0.70 INCHES  
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 9 HOUR 2 - 0.80 INCHES  
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 3 HOUR 14 - 0.90 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS - 34  
NUMBER OF MISSING HOURS - 0  
TOTAL HOURS OF PRECIPITATION - 0  
TOTAL DAYS WITH PRECIPITATION - 0  
TOTAL AMOUNT OF PRECIPITATION - 0.00 INCHES  
MAXIMUM 1-HOUR PRECIPITATION - 0.00 INCHES  
MAXIMUM DAILY PRECIPITATION - 0.00 INCHES

NPTD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR APR-JUNE 1990  
RAIN VERSION # 2P

PRECIPITATION INTENSITY - DURATION  
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	1	6	12	18	24
0.01	46	169	275	367	437
0.02	44	157	251	331	397
0.03	44	157	251	331	397
0.04	43	151	239	313	373
0.05	43	151	239	313	373
0.07	60	143	225	297	357
0.10	37	135	211	277	338
0.15	9	83	171	238	299
0.20	9	78	160	219	272
0.25	1	39	93	138	186
0.30	1	39	93	138	181
0.35	0	21	58	102	144
0.40	0	21	58	102	144
0.45	0	14	45	79	116
0.50	0	14	45	79	116
0.60	0	4	12	32	56
0.70	0	1	7	24	46
0.80	0	0	0	10	22
0.90	0	0	0	0	6
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0



NFSD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-JUNE 1990  
RAIN VERSION # 2P

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS -	4344								
NUMBER OF MISSING HOURS -	0								
TOTAL HOURS OF PRECIPITATION -	90								
TOTAL DAYS WITH PRECIPITATION -	35								
TOTAL AMOUNT OF PRECIPITATION -	9.94 INCHES								
MAXIMUM 1-HOUR PRECIPITATION -	0.30 INCHES								
MAXIMUM DAILY PRECIPITATION -	0.80 INCHES								
1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS MONTH	5	DAY	24	HR	6	-	0.30	INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS MONTH	5	DAY	3	HR	14	-	0.70	INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS MONTH	5	DAY	3	HR	14	-	0.70	INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS MONTH	5	DAY	9	HR	2	-	0.80	INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT	PRECIPITATION STARTS MONTH	5	DAY	3	HR	14	-	0.90	INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES FARENHEIT

TOTAL NUMBER OF HOURS -	665								
NUMBER OF MISSING HOURS -	0								
TOTAL HOURS OF PRECIPITATION -	3								
TOTAL DAYS WITH PRECIPITATION -	2								
TOTAL AMOUNT OF PRECIPITATION -	0.30 INCHES								
MAXIMUM 1-HOUR PRECIPITATION -	0.10 INCHES								
MAXIMUM DAILY PRECIPITATION -	0.20 INCHES								

NFPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR JAN-JUNE 1990  
 RAIN VERSION # 2P

PRECIPITATION INTENSITY - DURATION  
 (NUMBER OF OCCURRENCES)

AMOUNT INCHES	1	6	DURATION (HOURS) 12	18	24
0.01	90	338	538	700	830
0.02	87	320	502	646	766
0.03	87	320	502	646	766
0.04	86	314	490	628	742
0.05	83	310	488	626	740
0.07	80	302	474	610	724
0.10	70	274	437	563	684
0.15	16	161	327	474	598
0.20	12	145	307	445	561
0.25	1	76	181	278	390
0.30	1	68	170	266	367
0.35	0	29	101	188	278
0.40	0	27	95	172	249
0.45	0	15	71	134	200
0.50	0	15	60	124	194
0.60	0	4	12	39	72
0.70	0	1	7	27	55
0.80	0	0	0	10	25
0.90	0	0	0	0	6
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

## JOINT FREQUENCY DISTRIBUTION TABLES

The tables presented in this section are results obtained from processing of the hourly meteorological data collected at the Cooper Nuclear Station. The joint frequency distribution (JFD) tables represents the frequency of occurrence, in number of observations, that a particular wind speed, wind direction, and stability category occurred simultaneously. On a quarterly and semiannual basis, the JFDs were produced for wind speed and wind direction by atmospheric stability corresponding to the seven Pasquill stability classes, and for wind speed and wind direction for all stability categories combined. Atmospheric stability was classified per Regulatory Guide 1.23, using the 100-meter to 10-meter temperature difference ( $\Delta T$ ) for the 100-meter JFDs and the 60-meter to 10-meter  $\Delta T$  for the 10-meter JFDs.



JFD's of 10m-Meter Wind vs. Delta T  
January-March 1990

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T 7.8 MAR 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MFB

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MFB)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	7
1.01- 3.50	0	0	0	0	0	0	1	1	4	1	0	0	0	0	0	2	9
3.51- 7.50	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
7.51-12.50	10	5	0	0	0	0	0	0	2	0	0	0	0	0	0	4	21
12.51-18.50	6	0	0	0	0	0	0	0	2	2	1	0	0	0	0	5	16
18.51-24.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	19	5	0	0	0	0	1	1	8	3	1	0	0	0	1	11	57

# STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MFB

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MFB)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	10
1.01- 3.50	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3	1	6
3.51- 7.50	5	2	0	1	0	0	0	0	0	0	0	0	0	0	0	6	14
7.51-12.50	4	4	0	1	0	0	0	1	3	3	1	0	0	0	0	4	21
12.51-18.50	2	0	0	0	0	0	0	0	3	1	0	0	0	0	0	2	8
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	11	6	0	3	0	0	0	1	7	4	1	0	0	0	3	13	59

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
1	2	1	0	0	0	0	0	2	0	1	1	0	0	0	1	0	9
2	5	5	5	1	2	0	0	0	1	0	1	1	1	1	0	0	29
3	5	2	2	0	0	4	7	1	3	4	4	5	3	5	4	6	55
4	2	0	0	0	0	0	0	2	7	8	1	0	0	2	4	13	39
5	0	0	0	0	0	0	0	0	2	2	0	0	0	0	1	3	9
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	15	9	8	5	1	6	7	5	13	15	7	6	4	8	10	23	150

# STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
1	6	1	1	0	0	2	5	3	1	3	5	0	1	1	0	3	32
2	22	14	12	8	4	4	23	13	18	25	11	8	1	8	6	8	185
3	17	7	7	2	0	7	15	7	15	14	11	7	9	7	22	21	179
4	12	1	0	0	0	0	1	4	7	16	2	0	8	9	22	19	101
5	1	0	0	0	0	0	0	2	3	2	0	0	0	10	10	10	38
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	6
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	59	33	20	10	4	13	44	29	44	60	29	15	19	35	65	62	599



PROGRAM: JFD VERSION: 5P  
 NPTD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPTD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	79
1.01- 3.50	13	8	4	2	0	0	5	16	13	3	4	3	0	1	6	4	82
3.51- 7.50	28	1	1	1	1	3	9	34	72	31	9	2	1	5	8	6	212
7.51-12.50	5	0	0	0	0	0	1	23	48	20	4	11	6	3	15	1	137
12.51-18.50	0	0	0	0	0	0	0	0	7	3	1	0	5	0	10	4	30
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	46	9	5	3	1	3	15	73	140	57	18	16	12	9	39	15	543

# STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	26
1.01- 3.50	6	6	1	3	0	0	6	14	19	8	7	0	0	0	1	7	80
3.51- 7.50	4	1	0	0	1	2	5	10	21	23	2	1	1	2	1	4	78
7.51-12.50	0	0	0	0	0	0	0	3	6	2	2	4	2	1	0	0	20
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	10	7	1	3	1	2	13	27	46	33	11	6	3	3	3	11	206

PROGRAM: JFD VERSION: 5P

NPFO-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-MAR 1990

SITE IDENTIFIER: NPFO

DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	4	5	7	1	1	3	14	13	11	2	5	1	0	0	1	2	0
3.51- 7.50	1	0	0	0	0	0	0	6	5	2	0	0	0	0	0	0	70
7.51-12.50	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	14
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5	5	7	1	1	3	14	19	17	4	5	1	1	0	1	2	86

# STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	30	22	14	7	1	5	33	49	49	18	22	4	1	2	12	19	188
3.51- 7.50	48	23	18	15	7	11	37	63	117	81	23	12	4	16	16	24	288
7.51-12.50	2	28	9	3	0	11	23	35	78	43	22	27	20	16	41	36	535
12.51-18.50	22	1	0	0	0	0	1	6	26	30	5	1	14	11	37	43	434
18.51-24.00	3	0	0	0	0	0	0	2	5	4	0	0	0	10	11	13	197
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	48
TOTAL	165	74	41	25	8	27	94	155	275	176	72	44	39	55	122	137	1697

PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

STABILITY BASED ON: DELTA T      BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2160

TOTAL NUMBER OF VALID OBSERVATIONS: 1697

TOTAL NUMBER OF MISSING OBSERVATIONS: 463

PERCENT DATA RECOVERY FOR THIS PERIOD: 78.6 %

MEAN WIND SPEED FOR THIS PERIOD: 7.2 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

# PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
3.36	3.48	8.84	35.30	31.82	12.14	5.07

# DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	19	5	0	0	0	0	1	1	8	3	1	0	0	0	1	11	7
B	11	6	0	3	0	0	0	1	7	4	1	0	0	0	3	13	10
C	15	9	8	5	1	6	7	5	13	15	7	6	4	8	10	23	8
D	59	33	20	10	4	13	44	29	44	60	29	15	19	35	65	62	58
E	46	9	5	3	1	3	15	73	140	57	18	16	12	9	39	15	79
F	10	7	1	3	1	2	13	27	46	33	11	6	3	3	3	11	26
G	5	5	7	1	1	3	14	19	17	4	5	1	1	0	1	2	0
TOTAL	165	74	41	25	8	27	94	155	275	176	72	44	39	55	122	137	188



JFD's of 10m-Meter Wind vs. Delta T  
April-June 1990

PROGRAM: JTD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JTD: 10M WIND VS 60-10M DELTA I APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

# STABILITY CLASS A

STABILITY BASED ON: DELTA I BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	2	1	2	1	0	0	0	1	0	1	1	0	0	0	0	0	9
7.51-12.50	2	0	0	0	0	1	2	12	14	2	2	0	0	0	3	6	64
12.51-18.50	6	1	0	0	0	0	2	9	28	9	0	0	0	0	4	23	82
18.51-24.00	0	0	0	0	0	0	1	0	20	12	0	0	0	1	0	6	46
>24.00	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	4
TOTAL	10	2	2	1	0	1	5	22	62	24	3	1	1	2	14	35	185

# STABILITY CLASS B

STABILITY BASED ON: DELTA I BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	5	2	4	3	0	1	2	1	1	1	2	0	0	2	1	3	28
7.51-12.50	6	0	3	1	0	0	3	9	10	3	4	1	2	1	2	5	50
12.51-18.50	2	0	0	0	0	0	1	4	8	4	0	0	2	2	4	6	33
18.51-24.00	0	0	0	0	0	0	0	0	5	1	0	0	2	1	1	4	15
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL	13	2	7	4	1	1	6	14	25	9	6	1	6	6	9	18	128

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

# STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3
3.51- 7.50	9	3	10	1	3	2	6	4	5	7	1	2	3	2	3	3	44
7.51-12.50	4	0	3	0	1	5	7	11	17	3	5	0	3	8	10	4	81
12.51-18.50	0	0	0	0	0	6	1	6	19	0	0	0	3	6	11	2	48
18.51-24.00	0	0	0	0	0	0	0	0	4	0	0	0	2	1	5	5	19
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL	13	4	13	1	4	7	15	21	46	10	6	4	11	18	29	14	216

# STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	3	9	2	4	2	2	9	9	11	2	1	1	0	1	0	3	59
3.51- 7.50	31	26	30	31	24	18	25	15	22	9	6	3	4	7	5	7	263
7.51-12.50	19	15	4	6	13	26	22	63	28	8	3	6	7	12	15	18	265
12.51-18.50	4	0	0	0	3	3	11	19	40	5	2	0	2	8	15	24	136
18.51-24.00	0	0	0	0	0	0	0	0	10	1	0	0	2	1	3	5	22
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	57	50	36	41	42	49	67	106	111	25	12	10	15	29	38	57	747



PROGRAM: JFD VERSION: 5P  
 NFD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T APR-JUNE 1990  
 SITE IDENTIFIER: NFD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

# STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPM

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM	7	7	4	4	2	1	14	4	12	2	0	2	2	1	3	2	67
1.01- 3.50	15	11	0	4	8	4	6	11	15	13	2	3	3	2	8	18	123
3.51- 7.50	2	3	0	0	2	0	1	13	9	8	4	4	5	9	6	18	84
7.51-12.50	0	0	0	0	1	0	0	2	11	3	0	0	0	1	0	2	20
12.51-18.50	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
18.51-24.00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	24	21	4	8	13	5	21	30	50	26	6	9	10	13	17	40	297

# STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPM

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM	7	6	6	0	1	1	3	11	12	6	7	0	0	0	2	9	71
1.01- 3.50	1	1	0	1	0	0	0	1	11	7	0	1	4	0	1	4	32
3.51- 7.50	0	0	0	0	0	0	0	0	0	1	0	2	1	2	2	0	8
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	8	7	6	1	1	1	3	12	23	14	7	3	5	2	5	13	111

PROGRAM: JFD VERSION: 2.2  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

# STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	NNW	TOTAL
CALM																	4
1.01-3.50	5	5	4	1	2	0	5	12	6	1	2	1	2	1	0	4	51
3.51-7.50	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5	5	4	1	2	0	5	12	8	1	2	1	2	1	0	4	57

# STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	NNW	TOTAL
CALM																	6
1.01-3.50	22	28	16	9	8	4	32	36	42	11	10	4	4	3	5	18	252
3.51-7.50	63	44	46	41	35	25	39	33	56	38	12	9	14	13	18	35	521
7.51-12.50	33	18	10	7	16	32	35	108	78	25	18	13	18	32	38	51	532
12.51-18.50	12	1	0	0	4	3	15	49	106	21	2	0	7	17	34	57	319
18.51-24.00	0	0	0	0	0	0	1	0	41	14	0	2	7	3	15	20	103
>24.00	0	0	0	0	0	0	0	0	2	0	0	1	0	3	2	0	8
TOTAL	130	91	72	57	63	64	172	217	325	109	42	29	50	71	112	181	1741

PROGRAM: JFD VERSION: 5F  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2184

TOTAL NUMBER OF VALID OBSERVATIONS: 1741

TOTAL NUMBER OF MISSING OBSERVATIONS: 443

PERCENT DATA RECOVERY FOR THIS PERIOD: 79.7 %

MEAN WIND SPEED FOR THIS PERIOD: 9.1 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

# PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
10.63	7.35	12.41	42.91	17.06	6.38	3.27

# DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	10	2	2	1	0	1	5	22	62	24	3	1	1	2	14	35	0
B	13	2	7	4	1	1	6	14	25	9	6	1	6	6	9	18	0
C	13	4	13	1	4	7	15	21	46	10	6	4	11	18	29	14	0
D	57	50	36	41	42	49	67	106	111	25	12	10	15	29	38	57	2
E	24	21	4	8	13	5	21	30	50	26	6	9	10	13	17	40	0
F	8	7	6	1	1	1	3	12	23	14	7	3	5	2	5	13	0
G	5	5	4	1	2	0	5	12	8	1	2	1	2	1	0	4	4
TOTAL	130	91	72	57	63	64	122	217	325	109	42	29	50	71	112	181	6



JFD's of 10m-Meter Wind vs. Delta T  
January-June 1990

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

# STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	NW	NNW	TOTAL
CALM																		7
1.01- 3.50	0	0	0	0	0	0	1	1	4	1	0	0	0	0	0	0	2	9
3.51- 7.50	4	1	2	1	0	0	0	1	0	1	1	0	0	0	1	1	0	12
7.51-12.50	12	5	0	0	0	1	2	12	16	2	2	0	0	0	3	10	65	
12.51-18.50	12	1	0	0	0	0	2	9	30	11	1	0	0	0	4	28	98	
18.51-24.00	1	0	0	0	0	0	1	0	20	12	0	0	1	0	6	6	47	
>24.00	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	4	
TOTAL	29	7	2	1	0	1	6	23	70	27	4	1	1	2	15	46	242	

# STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	10
1.01- 3.50	0	0	0	1	1	0	0	0	1	0	0	0	0	0	3	1	7
3.51- 7.50	10	4	4	4	0	1	2	1	1	1	2	0	0	2	1	9	42
7.51-12.50	10	4	3	2	0	0	3	10	13	6	5	1	2	1	2	9	71
12.51-18.50	4	0	0	0	0	0	1	4	11	5	0	0	2	2	4	8	41
18.51-24.00	0	0	0	0	0	0	0	0	6	1	0	0	2	1	1	4	15
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL	24	8	7	7	1	1	6	15	32	13	7	1	6	6	12	31	187

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

# STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL
CALM																	8
1.01-3.50	1	3	1	0	0	0	1	2	1	1	1	0	0	0	1	0	12
3.51-7.50	15	8	15	6	4	4	6	4	6	7	2	3	4	3	3	3	93
7.51-12.50	9	2	5	0	1	9	14	12	20	7	9	5	6	13	14	10	136
12.51-18.50	2	0	0	0	0	0	1	8	26	8	1	0	3	8	15	15	87
18.51-24.00	1	0	0	0	0	0	0	0	6	2	0	2	2	1	6	8	28
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
TOTAL	28	13	21	6	5	13	22	26	59	25	13	10	15	26	39	37	366

# STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL
CALM																	60
1.01-3.50	9	10	3	4	2	4	14	12	12	5	6	1	1	2	0	6	91
3.51-7.50	53	40	42	39	28	22	48	28	40	34	17	11	5	15	11	15	448
7.51-12.50	37	32	11	8	13	33	37	70	43	22	14	13	16	19	37	39	444
12.51-18.50	16	1	0	0	3	3	12	23	47	21	4	0	10	17	37	43	237
18.51-24.00	1	0	0	0	0	0	0	2	13	3	0	0	2	11	13	15	60
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	6
TOTAL	116	83	56	51	46	62	111	135	155	85	41	25	34	64	103	119	1346



PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

# STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	79
1.01-3.50	20	15	8	6	2	1	19	20	25	5	4	5	2	2	9	6	149
3.51-7.50	43	12	1	5	9	7	15	45	87	44	11	5	4	7	16	24	335
7.51-12.50	7	3	0	0	2	0	2	36	57	28	8	15	11	12	21	19	221
12.51-18.50	0	0	0	0	1	0	0	2	18	6	1	0	5	1	10	6	50
18.51-24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL	70	30	9	11	14	8	36	103	190	83	24	25	22	22	56	55	837

# STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	26
1.01-3.50	13	12	7	3	1	1	11	25	31	14	14	0	0	0	3	16	151
3.51-7.50	5	2	0	1	1	2	5	11	32	30	2	2	5	2	2	6	110
7.51-12.50	0	0	0	0	0	0	0	3	6	3	2	6	3	3	2	0	28
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	18	14	7	4	2	3	16	39	69	47	18	5	8	5	8	24	317

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

# STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL
CALM																	4
1.01- 3.50	9	10	11	2	3	3	19	25	17	3	7	2	2	1	1	6	121
3.51- 7.50	1	0	0	0	0	0	0	6	1	2	0	0	0	0	0	0	16
7.51-12.50	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	10	10	11	2	3	3	19	31	25	5	7	2	3	1	1	6	143

# STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

WIND MEASURED AT: 10.0 METERS

WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL
CALM																	194
1.01- 3.50	52	50	30	16	9	9	65	85	91	29	32	8	5	5	17	37	540
3.51- 7.50	131	67	64	56	42	36	76	96	173	119	35	21	18	29	34	59	1056
7.51-12.50	75	46	19	10	16	43	58	143	156	68	40	40	38	48	79	87	966
12.51-18.50	34	2	0	0	4	3	16	46	132	51	7	1	21	28	71	100	516
18.51-24.00	3	0	0	0	0	0	1	2	46	18	0	2	7	13	26	33	151
>24.00	0	0	0	0	0	0	0	0	2	0	0	1	0	3	7	2	15
TOTAL	295	165	113	82	71	91	216	372	600	285	114	73	89	126	234	318	3438

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS  
 WIND MEASURED AT: 10.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 4344

TOTAL NUMBER OF VALID OBSERVATIONS: 3438

TOTAL NUMBER OF MISSING OBSERVATIONS: 906

PERCENT DATA RECOVERY FOR THIS PERIOD: 79.1 %

MEAN WIND SPEED FOR THIS PERIOD: 8.2 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

#### PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
7.04	5.44	10.65	39.15	24.35	9.22	4.16

#### DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	29	7	2	1	0	1	6	23	70	27	4	1	1	2	15	46	7
B	24	8	7	7	1	1	6	15	32	13	7	1	6	6	12	31	10
C	28	13	21	6	5	13	22	26	59	25	13	10	15	26	39	37	8
D	116	83	56	51	46	62	111	135	155	85	41	25	34	64	103	119	60
E	70	30	9	11	14	8	36	103	190	83	24	25	22	22	56	55	79
F	18	14	7	4	2	3	16	39	69	47	18	9	8	5	8	24	26
G	10	10	11	2	3	3	19	31	25	5	7	2	3	1	1	6	4
TOTAL	293	165	113	82	71	91	216	372	600	275	114	73	89	126	234	318	194



Stability Class by Hour of Day  
10-Meter Wind vs. Delta T  
January-June 1990

PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 60.0 AND 10.0 METERS

			HOURLY STABILITIES																							
			HOURS																							
YR	MM	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90	1	1	D	D	D	E	E	E	E	E	D	D	C	B	A	A	C	C	D	E	E	E	E	E	E	E
90	1	2	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	E	E	E	E	E	E	E	E
90	1	3	E	E	E	E	E	E	E	E	D	D	A	D	D	A	D	D	D	D	D	C	C	C	C	C
90	1	4	C	C	C	C	C	D	D	D	C	D	D	C	C	D	D	D	D	E	E	E	E	F	F	E
90	1	5	E	E	E	E	E	F	E	E	E	E	E	E	D	D	D	D	D	E	E	E	E	E	F	G
90	1	6	E	E	E	F	E	E	F	G	G	G	F	E	D	D	D	E	E	F	F	F	E	E	E	E
90	1	7	E	E	E	E	F	F	F	F	G	E	E	E	E	E	E	D	E	F	F	G	G	G	G	G
90	1	8	G	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	F	F	E	E	E	E	F
90	1	9	E	E	E	E	E	E	D	E	E	D	D	D	D	D	D	D	E	E	F	F	F	F	F	F
90	1	10	F	F	F	E	F	F	F	F	E	E	D	D	D	D	D	D	E	E	F	F	F	G	F	E
90	1	11	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	D	D	D	D
90	1	12	D	D	D	D	D	D	D	D	D	D	C	C	C	C	C	C	D	D	E	F	F	G	F	G
90	1	13	G	F	F	F	F	F	E	E	D	D	D	C	B	B	C	D	D	E	E	E	E	E	E	E
90	1	14	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	F	G	G	G	G	G	G
90	1	15	G	G	G	G	G	G	G	G	G	F	E	D	D	D	D	C	D	E	E	E	E	E	E	F
90	1	16	F	E	F	F	-	D	E	-	-	-	-	-	B	C	B	D	D	E	E	D	E	-	-	-
90	1	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	E	E	E	E	D
90	1	18	D	D	D	D	D	D	D	D	D	D	C	B	A	A	C	D	D	D	E	E	E	E	E	E
90	1	19	E	D	C	D	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	-	-	-	-	-
90	1	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	1	21	-	-	-	-	-	-	C	D	D	B	C	C	C	C	C	C	D	D	D	D	D	D	E	E
90	1	22	E	E	E	E	E	E	E	E	E	D	C	C	D	D	D	D	D	E	F	F	F	F	E	E
90	1	23	E	E	E	F	F	F	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
90	1	24	F	F	E	E	F	E	E	F	E	D	A	B	C	D	D	D	-	-	-	-	-	-	-	D
90	1	25	D	D	E	D	D	D	D	D	D	D	D	C	C	D	D	D	D	E	E	E	E	F	E	E
90	1	26	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	F	E	E	F	F
90	1	27	F	E	F	F	F	F	D	D	C	C	D	D	C	B	C	C	D	E	F	F	F	F	F	F
90	1	28	F	F	F	E	F	F	F	F	E	D	D	D	C	D	D	D	D	E	E	E	E	E	F	F
90	1	29	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	D	D	E	E	E	E	E	E	E
90	1	30	E	F	F	F	E	D	D	D	D	B	A	A	A	A	B	B	D	D	D	D	D	D	D	D
90	1	31	D	D	D	D	D	D	D	D	D	D	D	D	C	C	D	D	D	D	E	E	E	E	E	E
90	2	1	E	E	D	D	D	D	D	C	B	A	A	A	A	B	C	D	D	D	C	D	C	D	D	C
90	2	2	D	D	D	C	D	D	D	C	D	D	D	D	B	D	D	D	D	D	-	-	-	-	-	-
90	2	3	-	-	-	-	-	-	-	D	D	B	B	A	B	B	B	C	D	D	D	D	D	E	E	E
90	2	4	F	E	F	E	F	F	F	E	E	D	D	D	C	D	D	D	D	D	E	F	E	E	E	E
90	2	5	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	F	F	E	F	G	G
90	2	6	G	G	F	G	G	F	G	F	F	E	D	D	D	D	D	D	D	E	D	E	D	E	F	G
90	2	7	G	D	-	-	-	-	E	E	D	D	C	B	A	B	C	C	D	E	E	F	F	F	E	E
90	2	8	E	E	E	E	E	E	F	F	E	D	D	C	C	D	D	D	D	D	E	E	E	E	G	G
90	2	9	G	F	F	E	E	E	E	F	F	E	D	D	C	B	A	A	B	E	F	F	G	G	G	G
90	2	10	G	G	G	F	F	E	E	E	D	D	D	D	C	C	C	D	D	D	E	F	G	G	G	G
90	2	11	G	G	G	G	G	F	F	E	E	D	D	D	D	C	D	D	D	D	E	G	F	G	G	G
90	2	12	G	G	G	G	F	F	F	E	E	D	D	D	D	C	D	C	C	D	E	E	G	F	G	E
90	2	13	D	D	D	D	D	D	D	D	D	C	A	A	A	A	A	A	B	D	D	D	D	D	D	D
90	2	14	D	D	D	D	D	D	D	D	D	D	D	C	A	A	A	D	-	-	-	-	-	D	D	-

PROGRAM: JFD      VERSION: 5P  
 NPPD: COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 60.0 AND 10.0 METERS

# HOURLY STABILITIES

## HOURS

YR MN DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90 2 15	-	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90 2 16	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90 2 17	F	G	G	G	G	G	F	E	E	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D
90 2 18	E	E	E	E	E	E	E	E	E	D	D	D	D	C	C	C	C	D	D	D	D	D	D	D
90 2 19	G	G	G	G	G	G	G	F	E	D	D	D	D	C	C	C	D	D	D	D	D	D	D	D
90 2 20	E	D	E	E	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90 2 21	E	E	E	F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90 2 22	E	D	D	D	C	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D
90 2 23	D	D	D	D	D	E	E	E	C	C	D	D	C	D	D	D	D	D	D	D	D	D	D	D
90 2 24	D	D	D	D	D	D	D	D	C	C	A	A	A	A	A	A	C	D	D	D	D	D	D	D
90 2 25	E	D	E	E	E	D	D	D	D	D	D	D	C	C	C	C	C	C	C	C	C	C	C	D
90 2 26	D	D	D	D	D	D	D	D	D	D	D	B	C	B	D	D	D	D	D	D	D	D	D	D
90 2 27	E	E	E	E	E	E	D	C	B	A	B	A	A	A	B	D	D	D	D	D	D	D	D	D
90 2 28	E	E	E	E	D	E	D	D	D	D	C	C	D	C	C	C	D	D	D	D	D	D	D	D
90 3 1	F	F	F	F	E	F	F	E	E	D	D	D	D	C	C	C	D	D	D	D	D	D	D	D
90 3 2	F	E	E	F	F	F	E	E	D	D	D	D	C	C	C	C	D	D	D	D	D	D	D	D
90 3 3	E	E	E	E	D	E	E	D	C	B	C	C	D	C	B	C	D	D	D	D	D	D	D	D
90 3 4	F	F	F	E	E	E	E	E	D	C	C	B	A	A	A	B	D	D	D	D	D	D	D	D
90 3 5	E	E	E	E	E	F	F	F	E	C	B	B	C	B	B	C	D	D	D	D	D	D	D	D
90 3 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 12	-	-	E	E	E	E	E	E	D	D	C	C	C	C	D	D	D	D	D	D	D	D	D	D
90 3 13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	C	D	D	D	D	D	D	D	D
90 3 16	E	E	E	E	F	F	E	D	D	C	B	B	-	-	-	-	-	D	D	D	D	D	D	D
90 3 17	E	E	E	E	E	E	D	D	-	-	-	-	-	-	-	-	-	D	D	D	D	D	D	D
90 3 18	E	E	E	E	E	E	F	E	D	C	B	B	B	A	A	B	C	D	D	D	D	D	D	D
90 3 19	E	E	E	E	D	D	D	B	A	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 20	E	E	E	E	E	E	E	D	D	C	B	A	A	A	A	A	C	D	D	D	D	D	D	D
90 3 21	E	E	F	F	F	F	F	E	D	D	D	C	B	C	B	D	D	D	D	D	D	D	D	D
90 3 22	E	E	-	-	-	-	-	-	-	-	-	B	B	B	B	C	C	D	D	D	D	D	D	D
90 3 23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 24	-	-	-	-	-	-	D	D	C	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90 3 25	E	E	D	E	E	-	-	-	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90 3 26	E	D	E	E	E	D	D	D	C	B	B	C	A	C	C	D	D	D	D	D	D	D	D	D
90 3 27	F	F	F	F	F	F	E	E	D	A	A	A	A	-	-	-	-	D	D	D	D	D	D	D
90 3 28	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 3 31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	D	D	D	D	D



PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 60.0 AND 10.0 METERS

# HOURLY STABILITIES

YR MN DY	HOURS																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90 4 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	E	E	E	E	E	E	E
90 4 2	E	E	E	E	D	D	D	B	A	A	A	A	A	A	A	B	D	E	E	F	F	F	G	G
90 4 3	G	G	G	G	G	G	E	D	D	D	D	C	A	C	C	C	D	E	F	F	F	F	F	F
90 4 4	E	E	E	E	E	D	-	B	A	A	A	A	A	A	A	A	C	D	E	F	F	G	G	F
90 4 5	E	F	E	D	D	D	D	B	B	A	A	A	A	A	A	A	B	D	D	E	E	E	F	F
90 4 6	F	F	E	F	F	E	E	D	B	A	A	A	A	A	A	A	B	D	D	E	F	F	F	F
90 4 7	G	G	G	G	G	F	F	E	D	C	C	C	B	B	A	B	C	D	E	F	F	E	E	-
90 4 8	-	-	-	-	-	-	-	D	D	A	A	A	A	A	A	A	B	D	D	D	D	D	D	D
90 4 9	D	E	D	E	D	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 4 10	-	-	-	-	-	-	-	B	B	A	A	A	A	A	A	C	D	D	D	D	D	D	D	D
90 4 11	D	D	D	D	D	D	C	-	A	A	A	A	A	A	B	B	C	D	D	E	F	G	G	G
90 4 12	G	G	G	G	G	G	G	E	D	D	D	D	C	D	D	D	-	-	-	-	-	-	-	-
90 4 13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 4 14	D	D	D	-	F	F	E	D	-	-	-	-	C	C	B	C	D	D	E	E	D	D	-	-
90 4 15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	E	F	G	G	G	G
90 4 16	G	G	F	F	F	F	E	D	D	D	B	A	A	D	A	A	A	C	D	D	D	D	D	D
90 4 17	D	D	D	D	D	D	E	D	C	B	A	B	B	C	C	C	D	D	D	D	D	E	E	E
90 4 18	D	D	D	D	D	D	D	D	D	D	C	R	C	C	C	C	D	D	D	D	D	D	D	D
90 4 19	D	D	D	D	D	D	C	C	D	D	D	C	C	A	A	C	D	D	D	D	D	D	D	E
90 4 20	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D
90 4 21	D	D	D	D	D	-	-	-	-	-	-	-	B	B	C	D	D	D	D	D	D	D	D	D
90 4 22	E	E	D	D	D	C	D	D	D	D	B	B	A	B	B	C	C	D	E	E	E	E	E	E
90 4 23	E	E	D	D	C	C	C	C	A	A	A	A	A	A	A	B	C	D	D	D	D	E	D	D
90 4 24	D	D	D	D	D	D	B	B	A	A	A	A	A	A	A	A	C	D	D	E	E	D	D	D
90 4 25	D	D	D	D	C	C	C	C	B	B	B	B	C	D	D	C	C	D	D	D	D	D	D	D
90 4 26	D	D	D	D	C	C	C	C	B	B	A	A	A	A	A	B	C	C	C	D	D	D	-	-
90 4 27	-	-	-	-	-	-	-	-	-	-	B	C	D	D	D	D	C	C	D	D	D	D	D	D
90 4 28	D	D	D	D	C	C	C	B	A	-	C	B	B	-	C	C	B	C	D	D	D	D	D	D
90 4 29	D	D	D	D	D	D	D	D	D	D	B	C	B	C	B	B	D	D	D	D	D	E	E	E
90 4 30	E	E	E	E	E	E	D	C	D	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 5 1	-	E	E	E	E	E	E	D	C	B	C	R	E	B	C	D	D	D	D	E	E	E	E	F
90 5 2	F	F	F	F	F	F	F	D	D	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D
90 5 3	D	D	D	D	D	D	D	D	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 5 4	-	-	-	-	-	-	-	-	-	-	A	A	A	B	A	B	B	D	D	D	E	E	E	E
90 5 5	E	E	E	E	E	E	D	D	A	A	C	C	C	B	D	D	D	D	E	F	G	F	F	F
90 5 6	E	E	E	D	D	D	D	C	D	D	C	C	B	B	B	C	C	D	E	F	F	F	F	F
90 5 7	E	E	E	E	E	D	D	B	A	A	A	A	A	A	A	A	A	D	D	E	E	E	E	E
90 5 8	E	E	E	D	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90 5 9	D	D	D	D	D	D	D	C	C	C	C	C	D	C	C	C	C	D	D	D	D	D	D	D
90 5 10	D	D	D	D	D	D	D	C	C	C	C	C	C	C	C	D	D	D	D	E	G	G	G	G
90 5 11	G	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	C	D	D	D	-	-	-	-
90 5 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	D	D	D	D	D	D	D
90 5 13	D	D	D	D	E	E	D	D	D	D	B	B	A	A	B	B	C	D	D	D	D	D	D	E
90 5 14	D	D	D	D	D	C	D	C	C	C	D	B	C	D	C	D	D	D	E	F	F	F	F	E
90 5 15	E	-	-	-	-	-	-	-	-	-	B	A	A	A	A	A	A	-	-	-	-	-	-	-

PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED Q<sup>+</sup> DELTA T BETWEEN 60.0 AND 10.0 METERS

# HOURLY STABILITIES

## HOURS

YR MN DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90 5 16	-	-	-	-	-	-	-	-	-	-	-	-	B	A	C	D	D	D	D	E	E	F	E	E
90 5 17	E	E	E	E	E	E	D	D	D	C	C	C	B	B	B	C	C	D	D	E	G	G	F	F
90 5 18	F	F	F	F	E	E	E	C	C	B	A	D	A	C	A	B	D	D	E	E	E	E	E	E
90 5 19	E	E	-	-	-	-	-	-	-	C	C	C	B	B	C	C	D	D	D	D	D	D	D	D
90 5 20	D	E	E	E	D	D	D	D	D	D	D	D	D	C	D	D	C	D	D	D	D	D	D	D
90 5 21	E	D	E	D	E	D	D	D	D	D	D	B	B	B	B	C	D	D	D	D	E	E	E	E
90 5 22	E	E	D	D	D	D	D	D	B	D	D	C	B	A	B	A	B	B	D	D	E	E	D	E
90 5 23	E	E	E	E	E	D	-	-	-	-	-	-	-	D	D	D	D	D	D	D	C	D	D	D
90 5 24	D	D	-	-	-	-	-	-	-	-	-	-	-	A	C	C	D	D	C	D	D	D	D	D
90 5 25	D	D	D	D	D	D	D	D	C	B	B	A	A	A	B	D	D	D	D	D	D	D	D	D
90 5 26	D	D	D	D	D	D	D	D	D	B	A	B	A	C	C	C	D	D	D	D	D	D	D	D
90 5 27	D	D	D	-	-	-	-	D	D	D	C	C	D	D	D	D	D	D	E	E	E	E	E	D
90 5 28	E	E	E	E	E	E	E	E	E	D	D	D	D	D	E	D	D	D	D	F	G	G	G	G
90 5 29	G	G	F	F	E	E	C	B	D	D	E	D	-	-	-	D	D	D	D	D	E	E	E	E
90 5 30	E	D	D	-	-	-	-	-	-	-	-	-	-	C	D	D	D	D	D	D	D	D	D	D
90 5 31	D	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 6 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 6 2	-	-	-	-	-	-	-	-	B	A	A	C	D	C	A	A	C	D	D	E	E	E	E	E
90 6 3	E	E	F	E	F	E	D	D	C	B	A	A	A	A	A	A	C	D	D	E	E	E	D	D
90 6 4	D	D	E	E	E	D	D	C	D	D	D	C	-	-	-	A	A	C	D	D	D	D	D	D
90 6 5	D	D	D	D	D	D	D	A	A	B	A	C	B	C	C	D	D	E	E	E	F	F	F	E
90 6 6	E	E	E	E	E	E	E	E	E	D	D	C	C	B	B	C	D	D	D	E	E	E	E	E
90 6 7	E	E	D	D	D	D	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 6 8	-	-	-	-	-	-	-	-	-	-	-	-	-	B	A	A	D	D	D	D	E	E	E	D
90 6 9	D	D	-	-	-	-	-	-	-	B	C	C	B	C	D	D	D	D	E	F	F	F	F	F
90 6 10	F	E	F	F	F	E	E	D	D	C	A	B	B	A	B	C	C	B	D	D	C	C	D	D
90 6 11	D	D	D	D	C	C	B	B	A	A	A	A	A	A	A	A	A	C	D	D	D	D	D	-
90 6 12	-	-	-	-	-	-	C	B	B	A	A	A	A	A	A	A	A	D	C	D	D	D	D	L
90 6 13	D	D	D	D	D	D	-	-	-	A	A	A	A	A	A	-	D	D	D	E	E	D	D	-
90 6 14	-	-	-	-	-	-	-	-	-	-	-	-	-	A	A	B	C	C	D	D	D	-	-	-
90 6 15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90 6 16	-	-	-	-	-	-	-	-	-	-	-	-	-	A	A	B	A	B	C	D	D	D	C	D
90 6 17	-	-	-	E	E	D	-	-	-	D	C	C	C	C	D	D	D	D	E	F	G	G	G	G
90 6 18	G	G	G	F	G	F	E	D	C	C	C	C	C	B	A	A	B	D	E	E	E	D	D	D
90 6 19	D	D	D	E	E	D	C	A	A	A	A	A	B	C	D	D	D	D	D	C	-	-	-	-
90 6 20	-	-	-	-	D	D	D	C	C	-	-	-	-	C	D	D	D	D	E	F	G	G	G	F
90 6 21	F	F	E	F	F	D	-	-	-	B	C	D	D	D	D	D	D	D	-	-	-	-	-	-
90 6 22	-	-	-	-	-	B	C	C	C	C	C	C	C	B	C	D	D	D	D	E	E	E	F	F
90 6 23	F	F	E	E	E	D	D	C	C	B	B	A	B	B	B	C	D	D	D	E	G	F	F	F
90 6 24	F	F	F	F	E	E	E	D	D	C	B	A	A	A	A	A	A	D	D	D	E	E	E	E
90 6 25	E	D	D	D	D	D	C	C	C	C	C	D	D	B	C	D	D	D	E	E	E	E	D	D
90 6 26	D	D	C	D	D	D	D	D	D	C	B	C	B	B	C	C	D	D	E	E	F	F	F	F
90 6 27	F	E	E	E	E	E	D	C	C	A	A	A	A	A	A	A	A	B	D	D	D	D	D	D
90 6 28	D	D	D	D	D	D	C	C	A	A	A	A	A	A	A	A	B	C	D	D	D	D	D	D
90 6 29	D	D	D	D	D	E	D	D	D	D	D	D	E	D	D	E	E	E	E	E	F	E	E	E



PROGRAM: JFD      VERSION: 5P  
NPPD-COOPER NUCLEAR STATION JFD: 10M WIND VS 60-10M DELTA T JAN-JUNE 1990  
SITE IDENTIFIER: NPPD  
DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 60.0 AND 10.0 METERS

	HOURLY STABILITIES																							
	HOURS																							
YR MN DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90 6 30	F	F	F	F	E	E	D	C	C	D	C	D	E	E	D	C	C	C	D	D	E	E	F	E



JFD's of 100m-Meter Wind vs. Delta T  
January-March 1990

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
>24.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	4

# STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12.51-18.50	1	1	0	0	0	0	0	2	2	1	2	0	0	0	0	6	15
18.51-24.00	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	2	7
>24.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	4	1	0	0	0	0	0	2	6	2	2	0	0	0	0	8	25

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	1	2	1	1	1	3	0	0	0	0	0	0	1	0	0	10
7.51-12.50	5	3	2	1	0	0	0	0	3	0	0	0	0	1	0	6	21
12.51-18.50	5	5	0	0	0	0	0	2	2	2	1	0	0	0	2	3	22
18.51-24.00	3	0	0	0	0	0	0	0	5	0	0	0	1	0	4	3	16
>24.00	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
TOTAL	15	9	4	2	1	1	3	2	11	2	1	0	1	2	6	12	72

# STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3
3.51- 7.50	15	7	14	6	3	3	9	3	7	12	25	6	2	1	1	4	118
7.51-12.50	17	16	7	5	10	3	5	8	11	17	23	12	6	20	12	23	195
12.51-18.50	18	13	9	3	0	7	27	5	9	26	12	7	11	7	20	31	205
18.51-24.00	17	9	0	0	0	0	5	4	17	8	1	1	6	11	24	32	135
>24.00	11	1	0	0	0	0	0	3	7	1	0	0	2	8	20	14	67
TOTAL	78	47	31	14	13	15	46	23	51	65	61	26	27	47	77	104	723



PROGRAM: JFD VERSION: 5P  
 NPCC-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPCC  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3.51- 7.50	2	2	4	2	4	6	4	6	2	6	11	2	2	2	4	4	63
7.51-12.50	8	5	9	2	3	8	14	9	13	32	32	11	8	8	7	14	183
12.51-18.50	8	8	1	0	0	2	5	19	69	41	26	8	11	8	8	12	226
18.51-24.00	5	1	0	0	0	0	2	5	41	3	2	8	13	13	15	3	111
>24.00	0	0	0	0	0	0	0	0	5	0	0	1	2	2	5	3	16
TOTAL	23	16	14	4	7	16	26	39	128	82	71	30	36	33	39	36	600

# STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 M.P.H

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	1	2	1	0	0	0	0	1	0	0	1	0	1	0	7
3.51- 7.50	0	0	0	1	2	0	2	4	1	4	4	0	2	0	1	1	22
7.51-12.50	4	0	0	0	0	1	4	11	8	9	15	9	5	2	7	4	79
12.51-18.50	0	0	0	0	0	0	6	15	20	4	9	6	5	4	1	4	74
18.51-24.00	0	0	0	0	0	0	0	0	3	0	1	4	3	2	0	1	14
>24.00	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3
TOTAL	4	0	1	3	3	1	12	30	32	18	29	20	16	9	11	10	199

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

# STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL
CALM																	0
1.01-3.50	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
3.51-7.50	1	0	1	1	0	1	0	3	3	3	3	1	1	1	0	1	20
7.51-12.50	0	0	0	0	1	1	6	3	2	4	5	7	3	0	1	7	40
12.51-18.50	0	0	0	0	0	0	0	2	2	2	1	1	0	0	0	0	8
18.51-24.00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
>24.00	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
TOTAL	1	0	2	1	1	2	6	8	8	9	11	9	4	2	1	8	73

# STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	WW	WNW	TOTAL
CALM																	0
1.01-3.50	0	1	3	2	1	0	1	0	1	2	0	0	1	0	1	0	13
3.51-7.50	18	10	21	11	10	11	18	16	13	25	43	9	7	5	6	10	233
7.51-12.50	35	24	18	6	14	13	29	31	37	62	75	39	22	31	27	54	519
12.51-18.50	32	27	10	3	0	9	38	46	104	76	51	22	27	19	31	57	552
18.51-24.00	25	10	0	0	0	0	7	9	70	12	5	13	23	26	43	41	284
>24.00	17	1	0	0	0	0	0	3	11	1	1	2	4	12	26	17	95
TOTAL	127	73	52	24	25	33	93	105	236	178	175	85	84	93	134	179	1696

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-MAR 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 3/31/90

\*\*\* JAN-MAR 1990 \*\*\*

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2160

TOTAL NUMBER OF VALID OBSERVATIONS: 1696

TOTAL NUMBER OF MISSING OBSERVATIONS: 464

PERCENT DATA RECOVERY FOR THIS PERIOD: 78.5 %

MEAN WIND SPEED FOR THIS PERIOD: 13.9 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

# PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
0.24	1.47	4.25	42.63	35.38	11.73	4.30

# DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
B	4	1	0	0	0	0	0	2	6	2	2	0	0	0	0	8	0
C	15	9	4	2	1	1	3	2	11	2	1	0	1	2	6	12	0
D	78	47	31	14	13	13	46	23	51	65	61	26	27	47	77	104	0
E	23	16	14	4	7	16	26	39	128	82	71	30	36	33	39	36	0
F	4	0	1	3	3	1	12	30	32	18	29	20	16	9	11	10	0
G	1	0	2	1	1	2	6	8	8	9	11	9	4	2	1	8	0
TOTAL	127	73	52	24	25	33	93	105	236	178	175	85	84	93	134	179	0



JFD's of 100m-Meter Wind vs. Delta T  
April-June 199'

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

# STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	1	4	2	2	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	1	5	1	0	0	0	0	0	0	9
>24.00	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7
TOTAL	0	0	0	0	0	0	1	5	14	3	0	0	0	0	0	0	23

# STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	1	0	0	0	1	2	2	0	1	0	0	0	1	2	10
12.51-18.50	0	0	0	0	0	0	1	5	3	0	0	0	0	0	1	15	30
18.51-24.00	0	1	0	0	0	0	2	1	10	9	0	0	0	0	1	5	29
>24.00	0	0	0	0	0	0	1	0	5	2	0	1	1	1	5	3	18
TOTAL	0	1	1	0	0	0	5	8	22	14	1	1	1	0	8	25	87

PROGRAM: JFD VERSION: 5P

NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-104 DELTA T APR-JUNE 1990

SITE IDENTIFIER: NPPD

DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

# STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

WIND MEASURED AT: 100.0 METERS

WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	1	2	3	0	0	0	2	1	1	4	1	0	0	2	0	1	18
7.51-12.50	9	2	5	4	1	0	1	5	9	3	6	0	2	1	4	2	54
12.51-18.50	3	1	2	0	0	2	0	10	11	5	1	1	1	2	5	10	54
18.51-24.00	4	0	0	0	0	0	0	3	10	6	0	0	1	0	4	7	29
>24.00	3	0	0	0	0	0	0	0	9	1	0	0	2	3	2	5	25
TOTAL	20	5	10	4	1	2	3	19	40	19	8	1	6	8	15	19	180

# STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

WIND MEASURED AT: 100.0 METERS

WIND THRESHOLD AT: 1.90 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	2	2	1	1	2	1	0	2	2	0	0	0	0	0	0	0	0
3.51- 7.50	18	2	8	7	10	7	9	4	16	15	5	7	3	4	5	8	122
7.51-12.50	31	19	25	20	13	10	17	12	20	17	11	0	11	13	9	18	246
12.51-18.50	22	16	5	6	20	25	22	49	36	15	5	6	11	11	31	23	303
18.51-24.00	6	1	0	0	2	9	12	36	55	6	2	0	2	12	21	26	190
>24.00	2	0	0	0	0	0	2	2	34	1	0	1	4	2	2	9	61
TOTAL	81	40	39	34	49	52	62	105	157	54	23	14	31	42	68	84	935



PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA I APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

# STABILITY CLASS E

STABILITY BASED ON: DELTA I BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01-3.50	0	1	1	1	0	0	1	0	1	1	0	0	0	0	0	0	6
3.51-7.50	2	2	2	3	5	10	5	0	3	7	0	0	1	1	3	6	50
7.51-12.50	6	3	3	4	7	7	6	8	9	17	10	2	1	6	6	9	104
12.51-18.50	11	5	2	6	4	5	20	10	24	8	0	2	0	0	11	21	129
18.51-24.00	2	0	0	0	0	1	1	6	12	3	1	4	4	5	3	4	46
>24.00	0	0	0	0	1	0	4	1	9	0	0	0	0	0	1	1	17
TOTAL	21	11	6	14	17	23	37	25	56	36	11	8	6	12	24	41	352

# STABILITY CLASS F

STABILITY BASED ON: DELTA I BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01-3.50	1	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	5
3.51-7.50	0	1	2	1	4	2	2	2	3	4	2	3	1	6	1	1	35
7.51-12.50	3	3	3	0	3	7	6	11	9	8	2	0	1	2	1	4	63
12.51-18.50	0	0	0	0	0	0	3	2	11	5	0	0	0	1	2	0	27
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	3	7	0	0	11
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL	4	4	6	1	7	10	12	15	24	17	4	4	8	17	4	5	142

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	4
3.51- 7.50	2	0	2	0	0	2	0	3	1	2	2	0	0	0	0	0	14
7.51-12.50	0	0	0	0	0	0	0	2	3	2	0	0	0	0	1	1	9
12.51-18.50	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	6
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	2	1	0	3	0	5	8	5	2	0	1	3	1	1	34

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	3	3	3	3	2	3	2	2	4	2	0	1	0	0	0	0	28
3.51- 7.50	23	7	17	11	19	21	18	10	18	32	10	10	5	13	9	16	239
7.51-12.50	49	27	37	28	24	24	31	40	52	47	30	2	15	22	22	36	486
12.51-18.50	36	22	9	12	24	32	47	80	92	38	6	9	15	17	50	69	558
18.51-24.00	12	2	0	0	2	10	15	47	93	25	3	4	11	24	29	36	313
>24.00	5	0	0	0	3	0	7	3	64	4	0	2	7	6	10	18	129
TOTAL	128	61	66	54	74	90	120	182	323	148	49	28	53	82	120	175	1753



PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T APR-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 4/ 1/90 - 6/30/90

\*\*\* APR-JUNE 1990 \*\*\*

STABILITY BASED ON: DELTA T      BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2184

TOTAL NUMBER OF VALID OBSERVATIONS: 1753

TOTAL NUMBER OF MISSING OBSERVATIONS: 431

PERCENT DATA RECOVERY FOR THIS PERIOD: 80.3 %

MEAN WIND SPEED FOR THIS PERIOD: 14.2 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

# PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
1.31	4.96	10.27	53.34	20.08	8.10	1.94

# DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	1	5	14	3	0	0	0	0	0	0	0
B	0	1	1	0	0	0	5	8	22	14	1	1	1	0	8	25	0
C	20	5	10	4	1	2	3	19	40	19	8	1	6	8	15	19	0
D	81	40	39	34	49	52	62	105	157	54	23	14	31	42	68	84	0
E	21	11	8	14	17	23	37	25	58	36	11	8	6	12	24	41	0
F	4	4	6	1	7	10	12	15	24	17	4	4	8	17	4	5	0
G	2	0	2	1	0	3	0	5	8	5	2	0	1	3	1	1	0
TOTAL	128	61	66	54	74	90	120	182	323	148	49	28	53	82	120	175	0



JFD's of 100m-Meter Wind vs. Delta T  
January-June 1990

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-1CM DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

# STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	1	5	2	2	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	1	5	1	0	0	0	0	0	1	11
>24.00	2	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	9
TOTAL	2	0	0	0	0	0	1	6	14	3	0	0	0	0	0	1	27

# STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	1	0	1	0	0	0	1	2	2	0	1	0	0	0	1	2	11
12.51-18.50	1	1	0	0	0	0	1	7	7	4	2	0	0	0	1	21	45
18.51-24.00	0	1	0	0	0	0	2	1	14	10	0	0	0	0	1	7	36
>24.00	2	0	0	0	0	0	1	6	5	2	0	1	1	0	5	3	20
TOTAL	4	2	1	0	0	0	5	10	28	16	3	1	1	0	8	33	112

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

# STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WSW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	1	3	5	1	1	1	5	1	1	4	1	0	0	3	0	1	28
7.51-12.50	14	5	7	5	1	0	1	5	12	1	6	0	2	2	4	8	75
12.51-18.50	8	6	2	0	0	2	0	12	13	6	2	1	1	2	7	13	76
18.51-24.00	7	0	0	0	0	0	0	3	15	6	0	0	2	0	8	4	45
>24.00	5	0	0	0	0	0	0	0	10	1	0	0	2	3	2	5	28
TOTAL	35	14	14	6	2	3	6	21	51	21	9	1	7	10	21	31	252

# STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IF HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WSW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	2	3	2	1	2	1	0	2	2	1	0	0	0	0	0	0	16
3.51- 7.50	33	9	22	13	13	10	18	7	17	27	30	13	5	5	6	12	260
7.51-12.50	48	35	32	25	23	13	22	20	31	34	34	12	17	33	21	41	441
12.51-18.50	40	29	14	9	20	32	49	54	45	41	17	13	22	18	51	54	508
18.51-24.00	23	10	0	0	2	9	17	40	72	14	3	1	8	23	45	58	325
>24.00	13	1	0	0	2	0	2	5	41	2	0	1	6	10	2	23	128
TOTAL	159	87	70	48	62	65	106	128	206	119	84	40	58	99	145	188	1658



PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	1	1	0	0	2	0	1	1	0	0	0	0	0	0	7
3.51- 7.50	4	4	6	5	9	16	9	6	5	13	11	2	3	3	7	10	113
7.51-12.50	14	8	12	6	10	15	20	17	22	49	42	13	9	14	13	23	287
12.51-18.50	19	13	3	6	4	7	25	29	93	49	26	10	11	8	19	33	355
18.51-24.00	7	1	0	0	0	1	3	11	53	6	3	12	17	18	18	7	157
>24.00	0	0	0	0	1	0	4	1	12	0	0	1	2	2	6	4	33
TOTAL	44	27	22	18	24	39	63	64	186	118	82	38	42	45	63	77	952

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	1	0	2	2	1	1	1	0	0	1	0	1	1	0	1	0	12
3.51- 7.50	0	1	2	2	6	2	4	6	4	8	6	3	3	6	2	2	57
7.51-12.50	7	3	3	0	3	8	10	22	17	17	17	9	6	4	8	8	182
12.51-18.50	0	0	0	0	0	0	9	17	31	7	9	6	8	5	3	4	101
18.51-24.00	0	0	0	0	0	0	0	0	4	0	1	4	6	9	0	1	25
>24.00	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	4
TOTAL	8	4	7	4	10	11	24	45	56	35	33	24	24	26	15	15	341

PROGRAM: JFD VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

# STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	1	1	0	1	0	0	2	1	0	0	0	0	0	0	6
3.51- 7.50	3	0	3	1	0	3	0	6	4	5	5	1	1	1	0	1	34
7.51-12.50	0	0	0	0	1	1	6	5	5	6	5	7	3	0	2	8	49
12.51-18.50	0	0	0	0	0	0	0	2	5	2	1	1	0	3	0	0	14
18.51-24.00	0	0	0	0	0	0	0	0	0	0	1	0	1	6	0	0	2
>24.00	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
TOTAL	3	0	4	2	1	5	6	13	16	14	13	9	5	5	2	9	107

# STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	3	4	6	5	3	3	3	2	5	4	0	1	1	0	1	0	41
3.51- 7.50	41	17	38	22	29	32	36	26	31	57	53	19	12	18	15	26	472
7.51-12.50	84	51	55	36	38	37	60	71	89	109	105	41	37	53	49	90	1005
12.51-18.50	68	49	19	15	24	41	85	126	196	114	57	31	42	36	81	126	1110
18.51-24.00	37	12	0	0	2	10	22	56	163	37	8	17	34	50	72	77	597
>24.00	22	1	0	0	3	0	7	6	75	5	1	4	11	18	36	35	224
TOTAL	255	134	116	78	99	123	213	287	559	326	224	113	137	175	254	354	3449



PROGRAM: JPD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JPD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

\*\*\* JAN-JUNE 1990 \*\*\*

STABILITY BASED ON: DELTA T      BETWEEN 100.0 AND 10.0 METERS  
 WIND MEASURED AT: 100.0 METERS  
 WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 4344

TOTAL NUMBER OF VALID OBSERVATIONS: 3449

TOTAL NUMBER OF MISSING OBSERVATIONS: 895

PERCENT DATA RECOVERY FOR THIS PERIOD: 79.4 %

MEAN WIND SPEED FOR THIS PERIOD: 14.1 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

# PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
0.78	3.25	7.31	48.07	27.60	9.99	3.10

# DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	2	0	0	0	0	0	1	6	14	3	0	0	0	0	0	1	0
B	4	2	1	0	0	0	5	10	28	16	3	1	1	0	8	33	0
C	35	14	14	6	2	3	6	21	51	21	9	1	7	10	21	31	0
D	159	87	70	48	62	65	108	128	208	119	84	40	58	89	145	188	0
E	44	27	22	18	24	39	63	64	186	118	82	38	42	45	63	77	0
F	8	4	7	4	10	11	24	45	56	35	33	24	24	26	15	15	0
G	3	0	4	2	1	5	6	13	16	14	13	9	5	5	2	9	0
TOTAL	255	134	118	78	99	123	213	287	559	326	224	113	137	175	254	354	0



Stability Classes by Hour of Day  
100-Meter Wind vs. Delta T  
January-June 1990

PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 100.0 AND 10.0 METERS

			HOURLY STABILITIES																							
			HOURS																							
YR	MM	DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90	1	1	D	D	D	E	E	E	E	E	E	D	D	C	B	B	C	D	D	E	E	E	E	E	E	E
90	1	2	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
90	1	3	E	E	E	E	E	E	E	E	E	D	D	D	C	D	D	C	D	D	D	D	D	D	D	D
90	1	4	D	D	D	D	D	E	E	E	E	E	E	E	D	D	D	D	D	E	E	E	F	F	F	F
90	1	5	E	F	E	F	E	E	E	E	E	E	E	E	D	D	D	D	E	E	E	F	F	F	F	F
90	1	6	E	E	E	E	E	F	F	F	F	F	F	E	D	D	D	E	E	F	F	E	E	E	E	E
90	1	7	E	E	E	E	F	F	F	G	E	E	D	D	D	D	D	E	F	F	G	G	G	F	F	F
90	1	8	G	F	E	E	E	E	E	E	E	E	D	D	E	E	E	E	F	E	E	E	E	E	E	F
90	1	9	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	F	F	F	F	F	G
90	1	10	G	G	F	F	F	F	F	E	E	E	D	D	D	D	D	D	E	F	F	F	G	F	E	E
90	1	11	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	D	D	D	D	D
90	1	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F	F	G
90	1	13	F	F	F	F	F	F	E	E	E	E	D	D	C	C	D	D	D	E	E	E	E	E	E	E
90	1	14	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	G	G	G	G	G	G
90	1	15	G	G	G	G	G	G	G	G	G	G	F	E	D	D	D	D	D	E	E	E	E	E	F	F
90	1	16	G	F	F	F	-	E	E	-	-	-	-	D	D	C	D	D	E	E	D	E	D	-	-	-
90	1	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	E	E	E	E	E	E
90	1	18	D	D	D	D	D	D	D	D	D	D	D	D	C	C	D	D	D	D	E	E	E	E	E	E
90	1	19	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-	-	-	-	-	-
90	1	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	1	21	-	-	-	-	-	-	D	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
90	1	22	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	E	F	F	F	F	F	F	F
90	1	23	E	F	E	F	F	F	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
90	1	24	F	F	E	E	E	E	E	F	F	E	D	D	D	D	D	-	-	-	-	-	-	-	-	E
90	1	25	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
90	1	26	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	F	F
90	1	27	F	E	E	F	F	F	D	D	D	D	D	D	C	D	D	D	D	E	F	F	F	F	F	F
90	1	28	G	F	F	E	E	F	E	F	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E	F
90	1	29	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
90	1	30	E	E	F	F	E	D	D	D	D	C	B	A	B	C	D	D	D	D	D	D	D	D	D	D
90	1	31	E	D	D	D	D	E	E	E	D	D	D	D	C	D	D	D	E	E	E	E	E	E	E	E
90	2	1	E	E	D	D	D	D	D	D	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D
90	2	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-	-	-	-	-	-	-
90	2	3	-	-	-	-	-	-	-	D	D	C	C	C	C	C	D	D	D	D	D	D	D	E	E	E
90	2	4	F	F	F	G	G	F	F	E	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
90	2	5	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	F	F	E	F	F	G
90	2	6	G	G	G	G	G	G	G	F	F	E	D	D	D	-	D	D	E	E	E	E	F	G	G	G
90	2	7	G	F	-	-	-	-	E	E	E	D	D	C	C	C	D	D	E	E	E	F	E	E	E	E
90	2	8	E	E	E	E	E	E	F	F	E	D	D	D	D	D	D	D	D	E	E	E	E	F	F	F
90	2	9	G	F	F	F	E	E	F	F	F	E	D	D	C	B	C	C	D	D	E	F	F	F	G	G
90	2	10	G	F	F	F	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	F	F	F	F	F
90	2	11	F	G	G	G	F	F	F	E	E	D	D	D	D	D	D	D	D	E	F	G	G	G	G	G
90	2	12	G	G	G	F	F	F	E	F	E	D	D	D	D	D	D	D	D	E	E	E	F	E	E	E
90	2	13	D	D	D	D	D	D	D	D	D	C	B	A	A	B	C	C	D	D	D	D	D	D	D	D
90	2	14	D	D	D	D	D	D	D	D	D	D	D	D	C	C	C	D	-	-	-	-	-	D	D	-



PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 100.0 AND 10.0 METERS

			HOURLY STABILITIES																							
			HOURS																							
YR	MM	DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90	2	15	-	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D
90	2	16	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F
90	2	17	F	G	G	G	G	G	F	F	E	E	D	D	D	D	D	D	D	D	E	E	E	E	F	F
90	2	18	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	F
90	2	19	G	G	G	G	G	G	G	F	E	D	D	D	D	C	D	D	D	E	E	E	E	E	E	E
90	2	20	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
90	2	21	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	F	F	F
90	2	22	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90	2	23	D	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	E	D	E	E	E	E	D
90	2	24	D	D	D	D	D	D	D	D	D	D	B	B	B	B	B	C	D	D	D	E	E	E	E	E
90	2	25	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90	2	26	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	E	F	F	F	G	F	F
90	2	27	E	E	E	E	E	E	E	E	D	C	C	C	B	B	C	D	D	D	E	E	E	E	E	E
90	2	28	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F	F
90	3	1	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	E	F	F	G	G	F	F
90	3	2	F	F	E	F	F	F	F	E	D	D	D	D	D	C	D	D	D	E	E	E	E	E	E	E
90	3	3	E	E	E	E	D	D	E	D	D	D	D	D	C	C	D	D	D	E	E	F	F	F	F	F
90	3	4	F	E	F	E	E	E	E	D	D	D	C	B	B	B	C	D	D	D	E	E	E	E	E	E
90	3	5	E	E	E	E	F	F	F	F	E	D	C	C	C	C	D	D	D	-	-	-	-	-	-	-
90	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	12	-	-	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	F	F	E	E	E	E
90	3	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	D	D	D	E	E	F	E	E	E
90	3	16	E	E	E	E	F	F	F	E	D	D	C	D	-	-	-	-	-	D	D	E	E	E	E	E
90	3	17	E	E	E	E	E	E	E	D	-	-	-	-	-	-	-	-	D	D	D	E	E	D	D	E
90	3	18	E	E	E	E	E	E	E	F	D	D	C	C	C	C	C	C	D	D	D	D	E	E	E	E
90	3	19	E	E	E	E	D	D	D	D	D	C	B	C	-	-	-	-	-	-	-	E	F	F	F	E
90	3	20	E	E	E	E	E	E	E	E	D	D	C	B	B	B	B	B	D	D	E	E	E	E	E	E
90	3	21	E	E	E	E	F	F	F	F	E	D	D	D	D	C	C	C	C	D	D	E	E	E	E	E
90	3	22	E	E	-	-	-	-	-	-	-	-	-	-	C	C	D	D	D	D	D	D	D	D	D	D
90	3	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	24	-	-	-	-	-	-	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
90	3	25	E	E	E	E	E	-	-	-	-	D	D	D	D	D	D	D	D	D	E	E	F	E	E	E
90	3	26	E	E	E	E	E	E	E	D	D	D	D	D	C	D	C	D	D	D	D	E	E	E	F	F
90	3	27	F	F	F	F	F	F	E	E	D	C	C	B	A	B	-	-	-	D	D	D	D	D	D	D
90	3	28	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	3	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	D	D	D	D



RSION: 5P

( STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990

PD

D: 1/ 1/90 - 6/30/90

STABILITY ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

# HOURLY STABILITIES

## HOURS

YR	MM	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	E	E	E	E	E	E	E
90	4	2	E	E	E	E	D	D	D	C	B	B	B	B	B	B	B	C	D	E	E	E	F	F	F	F
90	4	3	F	F	G	F	F	F	F	D	D	D	D	D	C	C	D	D	D	E	E	E	E	F	F	F
90	4	4	E	E	E	E	E	D	D	-	C	C	B	B	B	C	B	C	D	D	E	E	E	F	G	G
90	4	5	F	F	E	D	D	D	D	D	D	C	C	B	C	B	B	D	D	D	E	E	E	E	E	F
90	4	6	F	F	F	G	F	F	E	D	C	C	B	B	B	B	C	C	C	D	D	E	F	F	F	F
90	4	7	F	G	G	G	G	G	F	F	D	D	D	C	C	C	C	C	D	D	E	F	F	E	E	-
90	4	8	-	-	-	-	-	-	-	D	D	C	B	A	B	A	A	C	D	D	D	D	D	D	D	D
90	4	9	D	E	D	E	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	4	10	-	-	-	-	-	-	-	D	C	C	B	B	B	B	B	D	D	D	D	D	D	D	D	D
90	4	11	D	D	D	D	D	D	D	-	B	C	B	B	B	C	C	D	D	D	E	F	F	G	G	G
90	4	12	G	G	G	G	G	G	G	F	D	D	D	D	D	D	D	D	-	-	-	-	-	-	-	-
90	4	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	4	14	E	E	D	-	F	F	F	F	-	-	-	-	C	D	C	D	D	D	E	E	E	-	-	-
90	4	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	E	F	F	G	G	G
90	4	16	G	G	F	F	F	F	E	D	D	D	D	D	C	C	D	C	C	C	D	D	D	D	D	D
90	4	17	D	D	D	D	D	D	D	D	D	C	C	B	C	C	C	D	D	D	D	E	E	E	E	E
90	4	18	E	D	E	E	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D	D
90	4	19	D	D	D	D	D	D	D	D	D	D	D	D	D	C	C	D	D	D	D	D	D	D	D	E
90	4	20	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
90	4	21	E	E	E	E	E	D	-	-	-	-	-	B	C	D	D	D	D	D	E	E	E	F	E	E
90	4	22	E	E	E	E	E	E	D	D	D	D	C	C	B	C	C	D	D	D	E	E	E	E	E	E
90	4	23	E	E	E	E	D	D	D	D	D	C	C	B	A	B	B	C	D	D	D	D	D	D	D	D
90	4	24	D	D	D	D	D	D	D	D	D	C	B	A	A	B	B	B	C	D	D	E	E	E	D	D
90	4	25	D	D	D	D	D	D	D	D	C	C	C	C	C	C	C	D	D	D	D	E	D	D	D	D
90	4	26	D	D	D	D	D	D	D	D	D	D	D	D	B	B	B	C	D	D	D	D	D	D	D	-
90	4	27	-	-	-	-	-	-	-	-	-	-	-	D	D	D	D	D	D	D	E	D	D	D	D	D
90	4	28	D	D	D	D	D	D	D	C	-	D	C	C	-	C	D	D	D	D	D	E	E	E	E	E
90	4	29	E	D	D	D	D	D	D	D	D	D	D	D	C	D	C	D	C	C	D	D	D	D	E	E
90	4	30	E	E	E	E	E	E	D	D	D	D	-	C	D	C	D	C	D	D	D	E	E	E	E	E
90	5	1	E	E	E	E	E	E	D	D	C	D	C	B	C	D	D	D	D	D	E	E	E	E	E	F
90	5	2	F	F	F	F	F	F	F	E	D	D	D	C	C	D	D	D	D	D	D	D	D	D	D	D
90	5	3	D	E	D	D	E	D	D	D	D	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-
90	5	4	-	-	-	-	-	-	-	-	-	-	-	C	C	B	C	C	C	D	D	D	E	E	E	E
90	5	5	E	E	E	E	E	E	D	D	C	D	C	D	D	D	D	D	D	D	E	F	F	F	F	F
90	5	6	F	E	E	E	E	E	E	D	D	D	D	D	C	C	C	C	D	D	D	E	F	F	F	F
90	5	7	E	E	E	E	E	E	D	D	C	B	B	A	A	A	B	B	C	D	D	E	E	E	E	E
90	5	8	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90	5	9	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90	5	10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	G	G
90	5	11	G	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	C	D	D	D	-	-	-	-
90	5	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	D	D	D	D	D	D	D
90	5	13	D	E	E	E	E	E	E	D	D	D	C	C	B	C	C	C	D	D	D	D	D	D	D	E
90	5	14	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	C	D	D	E	F	F	F	F	E
90	5	15	E	-	-	-	-	-	-	-	-	-	D	B	B	B	B	C	C	-	-	-	-	-	-	-

PROGRAM: JFD      VERSION: 5P  
 NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
 SITE IDENTIFIER: NPPD  
 DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 100.0 AND 10.0 METERS

			HOURLY STABILITIES																							
			HOURS																							
YR	MM	DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90	5	16	-	-	-	-	-	-	-	-	-	-	-	-	C	C	D	D	D	D	D	E	E	F	F	F
90	5	17	F	E	F	F	E	E	E	D	D	D	D	C	C	C	C	D	D	D	D	E	F	F	F	F
90	5	18	F	F	G	F	F	E	E	D	D	C	C	D	B	C	B	C	D	D	E	E	E	E	E	E
90	5	19	E	E	-	-	-	-	-	-	-	-	D	C	C	C	C	D	D	D	D	D	D	D	D	D
90	5	20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90	5	21	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
90	5	22	E	E	E	E	E	E	E	D	C	D	D	C	C	B	C	C	D	D	D	D	E	E	E	E
90	5	23	E	E	E	E	E	D	-	-	-	-	-	-	-	D	D	D	D	D	D	D	D	D	D	D
90	5	24	D	E	-	-	-	-	-	-	-	-	-	-	-	C	D	D	D	D	D	D	D	D	D	D
90	5	25	D	D	D	D	D	D	D	D	D	D	C	C	C	C	C	D	D	D	D	D	D	D	D	D
90	5	26	D	D	D	D	D	D	D	D	D	C	C	D	C	D	D	D	D	D	D	E	D	E	E	E
90	5	27	E	E	E	-	-	-	-	-	D	D	D	C	C	D	D	D	D	D	E	E	E	E	E	E
90	5	28	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F	F
90	5	29	F	F	F	F	E	E	E	D	D	D	D	D	-	-	-	D	D	D	D	D	E	E	E	E
90	5	30	E	E	D	-	-	-	-	-	-	-	-	-	-	D	D	D	D	D	D	D	D	D	D	D
90	5	31	D	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	6	2	-	-	-	-	-	-	-	-	D	B	B	D	D	D	C	C	D	D	D	E	E	E	E	E
90	6	3	E	E	F	E	F	E	D	D	D	C	B	B	B	B	B	C	D	D	D	E	E	E	D	D
90	6	4	D	D	E	E	E	E	E	D	D	D	D	C	-	-	-	B	C	D	D	D	D	E	D	D
90	6	5	D	D	D	D	D	D	D	C	C	D	B	D	C	C	D	D	D	D	E	E	E	E	F	E
90	6	6	E	E	E	E	E	E	E	E	E	D	D	D	D	D	C	D	D	D	D	E	E	E	E	E
90	6	7	E	E	D	D	D	D	D	D	D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	C	C	C	D	D	D	D	E	E	E	E
90	6	9	E	E	-	-	-	-	-	-	-	-	-	-	C	C	D	D	D	D	D	E	F	F	F	F
90	6	10	F	F	2	F	F	F	E	E	D	B	D	D	C	C	C	D	D	D	D	D	D	D	D	D
90	6	11	D	D	D	D	D	D	D	B	A	A	A	A	A	A	B	C	D	D	D	D	D	D	D	-
90	6	12	-	-	-	-	-	-	D	D	C	B	C	B	C	B	B	C	D	D	D	D	D	D	D	D
90	6	13	D	D	D	D	D	D	-	-	B	A	A	A	B	C	-	E	D	D	E	E	D	D	-	-
90	6	14	-	-	-	-	-	-	-	-	-	-	-	-	-	A	B	C	D	D	D	D	-	-	-	-
90	6	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	6	16	-	-	-	-	-	-	-	-	-	-	-	-	-	B	C	D	C	D	D	D	D	D	D	-
90	6	17	-	-	-	E	E	E	-	-	D	D	D	D	D	D	D	D	D	D	E	F	G	G	G	F
90	6	18	G	F	G	G	G	F	F	E	D	D	D	C	D	C	C	C	D	D	E	E	E	D	D	D
90	6	19	D	D	-	-	E	D	D	C	B	C	B	B	C	D	D	D	D	D	D	D	-	-	-	-
90	6	20	-	-	-	-	D	D	D	D	D	-	-	-	-	D	D	D	D	D	E	F	F	F	G	F
90	6	21	F	F	F	F	F	D	-	-	-	C	D	D	D	D	D	D	D	D	-	-	-	-	-	-
90	6	22	-	-	-	-	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	E	E	E	E	E
90	6	23	F	E	E	E	E	E	D	D	D	D	C	C	D	D	C	D	D	D	D	E	F	F	F	F
90	6	24	F	F	F	F	E	F	E	D	D	D	C	A	A	B	B	B	C	D	D	D	E	E	E	E
90	6	25	E	E	D	D	E	D	D	D	D	D	D	D	C	C	C	D	D	D	D	D	E	F	F	F
90	6	26	D	D	D	D	D	D	D	D	D	D	C	C	C	C	D	D	D	D	D	E	F	F	F	F
90	6	27	E	E	E	E	E	E	E	D	D	C	B	B	B	A	B	A	C	D	D	D	D	D	D	D
90	6	28	D	D	D	D	D	D	D	C	C	C	B	B	C	C	C	C	D	D	D	D	D	D	D	D
90	6	29	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	E	E	E	E	E	F	E	E	E



PROGRAM: JFD      VERSION: 5P  
NPPD-COOPER NUCLEAR STATION JFD: 100M WIND VS 100-10M DELTA T JAN-JUNE 1990  
SITE IDENTIFIER: NPPD  
DATA PERIOD EXAMINED: 1/ 1/90 - 6/30/90

STABILITY BASED ON: DELTA T      BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES  
HOURS

YR	MO	DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
90	6	30	E	E	F	F	F	E	E	D	D	D	D	D	E	E	D	D	D	D	D	D	E	F	F	F



## ATMOSPHERIC DIFFUSION ESTIMATES

The tables of atmospheric diffusion estimates in this section were generated using the computer code XQDDQ. Data are given for 22 distances and 16 compass points (directions from site) centered on the Cooper Nuclear Station. Tables are presented for the ground-level (vent) and elevated (stack) release options separately, and for the following time periods: January-March, April-June, and January-June 1990.

Atmospheric Diffusion Estimates  
Ground Level Releases  
January-March 1990

## VENTIS GROUND LEVEL RELEASES - JAN-MAR 1990

NO DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

SECTOR	DISTANCE IN MILES										DISTANCE IN MILES										DISTANCE IN MILES										DISTANCE IN MILES																	
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000															
S	1.135E-04	3.989E-05	2.175E-05	1.095E-05	4.300E-06	2.297E-06	1.441E-06	9.973E-07	7.374E-07	5.717E-07	4.591E-07	3.789E-07	1.926E-07	1.238E-07	7.025E-08	4.721E-08	3.475E-08	2.709E-08	2.196E-08	1.833E-08	1.563E-08	1.356E-08	3.789E-07	1.926E-07	1.238E-07	7.025E-08	4.721E-08	3.475E-08	2.709E-08	2.196E-08	1.833E-08	1.563E-08	1.356E-08	3.789E-07	1.926E-07	1.238E-07	7.025E-08	4.721E-08	3.475E-08	2.709E-08	2.196E-08	1.833E-08	1.563E-08	1.356E-08				
SSW	6.409E-05	2.163E-05	1.174E-05	5.907E-06	3.352E-06	1.269E-06	8.012E-07	5.577E-07	4.144E-07	3.227E-07	2.602E-07	2.155E-07	1.111E-07	7.217E-08	4.160E-08	2.832E-08	2.104E-08	1.655E-08	1.352E-08	1.135E-08	9.727E-09	8.478E-09	2.155E-07	1.111E-07	7.217E-08	4.160E-08	2.832E-08	2.104E-08	1.655E-08	1.352E-08	1.135E-08	9.727E-09	8.478E-09	2.155E-07	1.111E-07	7.217E-08	4.160E-08	2.832E-08	2.104E-08	1.655E-08	1.352E-08	1.135E-08	9.727E-09	8.478E-09				
SW	3.750E-05	1.263E-05	6.671E-06	3.312E-06	1.325E-06	7.161E-07	4.433E-07	3.162E-07	2.354E-07	1.836E-07	1.482E-07	1.229E-07	6.367E-08	4.153E-08	2.408E-08	1.647E-08	1.229E-08	9.696E-09	7.940E-09	6.682E-09	5.742E-09	5.016E-09	6.598E-08	3.437E-08	2.249E-08	1.309E-08	8.956E-09	6.687E-09	5.273E-09	4.317E-09	3.633E-09	3.121E-09	2.726E-09	6.598E-08	3.437E-08	2.249E-08	1.309E-08	8.956E-09	6.687E-09	5.273E-09	4.317E-09	3.633E-09	3.121E-09	2.726E-09				
WSW	2.090E-05	6.681E-06	3.609E-06	1.815E-06	7.210E-07	3.879E-07	2.448E-07	1.704E-07	1.264E-07	9.861E-08	7.952E-08	6.598E-08	3.437E-08	2.249E-08	1.309E-08	8.956E-09	6.687E-09	5.273E-09	4.317E-09	3.633E-09	3.121E-09	2.726E-09	1.037E-08	4.83E-09	3.627E-09	2.143E-09	1.484E-09	1.119E-09	8.94E-10	7.331E-10	6.206E-10	5.361E-10	4.704E-10	1.037E-08	4.83E-09	3.627E-09	2.143E-09	1.484E-09	1.119E-09	8.94E-10	7.331E-10	6.206E-10	5.361E-10	4.704E-10				
W	3.197E-06	1.012E-06	5.179E-07	2.560E-07	1.049E-07	5.761E-08	3.692E-08	2.600E-08	1.951E-08	1.532E-08	1.244E-08	1.772E-08	6.041E-08	3.144E-08	1.548E-08	6.095E-08	3.253E-08	1.410E-08	7.042E-08	3.138E-08	2.240E-08	1.999E-08	1.609E-08	5.314E-08	2.914E-08	1.462E-08	7.360E-08	3.606E-08	1.398E-08	6.004E-08	2.822E-08	1.459E-08	6.109E-08	3.517E-08	2.829E-08	1.798E-08	6.406E-08	3.521E-08	1.771E-08	7.021E-08	3.768E-08	1.647E-08	1.229E-08	9.696E-09	7.940E-09	6.682E-09	5.742E-09	5.016E-09
WNW	9.291E-05	3.078E-05	1.643E-05	8.249E-06	3.324E-06	1.803E-06	1.144E-06	7.995E-07	5.959E-07	4.651E-07	3.758E-07	9.291E-05	3.078E-05	1.643E-05	8.249E-06	3.324E-06	1.803E-06	1.144E-06	7.995E-07	5.959E-07	4.651E-07	3.758E-07	1.498E-04	5.026E-05	2.739E-05	1.385E-05	5.83E-06	3.031E-06	1.925E-06	1.346E-06	1.004E-06	7.837E-07	6.334E-07	1.609E-04	5.026E-05	2.739E-05	1.385E-05	5.83E-06	3.031E-06	1.925E-06	1.346E-06	1.004E-06	7.837E-07	6.334E-07				
NW	1.609E-04	5.314E-05	2.914E-05	1.462E-05	6.004E-06	3.270E-06	2.082E-06	1.459E-06	1.090E-06	8.523E-07	6.898E-07	1.609E-04	5.314E-05	2.914E-05	1.462E-05	6.004E-06	3.270E-06	2.082E-06	1.459E-06	1.090E-06	8.523E-07	6.898E-07	7.136E-05	2.418E-05	1.307E-05	6.566E-06	3.270E-06	2.082E-06	1.459E-06	1.090E-06	8.523E-07	6.898E-07	7.136E-05	2.418E-05	1.307E-05	6.566E-06	3.270E-06	2.082E-06	1.459E-06	1.090E-06	8.523E-07	6.898E-07						
NNE	7.955E-05	2.656E-05	1.453E-05	7.360E-06	2.937E-06	1.592E-06	9.985E-07	6.946E-07	5.159E-07	4.013E-07	3.233E-07	7.955E-05	2.656E-05	1.453E-05	7.360E-06	2.937E-06	1.592E-06	9.985E-07	6.946E-07	5.159E-07	4.013E-07	3.233E-07	1.798E-05	6.406E-06	3.521E-06	1.771E-06	7.021E-07	3.768E-08	1.647E-08	1.229E-08	9.696E-09	7.940E-09	6.682E-09	5.742E-09	5.016E-09	1.798E-05	6.406E-06	3.521E-06	1.771E-06	7.021E-07	3.768E-08	1.647E-08	1.229E-08	9.696E-09	7.940E-09	6.682E-09	5.742E-09	5.016E-09
ENE	9.422E-06	3.365E-06	1.805E-06	8.960E-07	3.456E-07	1.817E-07	1.125E-07	7.698E-08	5.637E-08	4.333E-08	3.453E-08	9.422E-06	3.365E-06	1.805E-06	8.960E-07	3.456E-07	1.817E-07	1.125E-07	7.698E-08	5.637E-08	4.333E-08	3.453E-08	1.492E-05	5.393E-06	2.923E-06	1.456E-06	5.629E-07	2.965E-07	1.839E-07	1.261E-07	9.247E-08	7.117E-08	5.678E-08	1.492E-05	5.393E-06	2.923E-06	1.456E-06	5.629E-07	2.965E-07	1.839E-07	1.261E-07	9.247E-08	7.117E-08	5.678E-08				
E	4.368E-05	1.529E-05	8.202E-06	4.062E-06	1.572E-06	8.304E-07	5.173E-07	3.562E-07	2.623E-07	2.027E-07	1.624E-07	4.368E-05	1.529E-05	8.202E-06	4.062E-06	1.572E-06	8.304E-07	5.173E-07	3.562E-07	2.623E-07	2.027E-07	1.624E-07	6.189E-05	2.072E-05	1.120E-05	5.626E-06	2.225E-06	1.192E-06	7.491E-07	5.195E-07	3.848E-07	2.988E-07	2.403E-07	6.189E-05	2.072E-05	1.120E-05	5.626E-06	2.225E-06	1.192E-06	7.491E-07	5.195E-07	3.848E-07	2.988E-07	2.403E-07				
ESE	6.189E-05	2.072E-05	1.120E-05	5.626E-06	2.225E-06	1.192E-06	7.491E-07	5.195E-07	3.848E-07	2.988E-07	2.403E-07	6.189E-05	2.072E-05	1.120E-05	5.626E-06	2.225E-06	1.192E-06	7.491E-07	5.195E-07	3.848E-07	2.988E-07	2.403E-07	3.789E-07	1.926E-07	1.238E-07	7.025E-08	4.721E-08	3.475E-08	2.709E-08	2.196E-08	1.833E-08	1.563E-08	1.356E-08	3.789E-07	1.926E-07	1.238E-07	7.025E-08	4.721E-08	3.475E-08	2.709E-08	2.196E-08	1.833E-08	1.563E-08	1.356E-08				
SSE	3.789E-07	1.926E-07	1.238E-07	7.025E-08	4.721E-08	3.475E-08	2.709E-08	2.196E-08	1.833E-08	1.563E-08	1.356E-08	3.789E-07	1.926E-07	1.238E-07	7.025E-08	4.721E-08	3.475E-08	2.709E-08	2.196E-08	1.833E-08	1.563E-08	1.356E-08	2.155E-07	1.111E-07	7.217E-08	4.160E-08	2.832E-08	2.104E-08	1.655E-08	1.352E-08	1.135E-08	9.727E-09	8.478E-09	2.155E-07	1.111E-07	7.217E-08	4.160E-08	2.832E-08	2.104E-08	1.655E-08	1.352E-08	1.135E-08	9.727E-09	8.478E-09				
SSW	2.155E-07	1.111E-07	7.217E-08	4.160E-08	2.832E-08	2.104E-08	1.655E-08	1.352E-08	1.135E-08	9.727E-09	8.478E-09	2.155E-07	1.111E-07	7.217E-08	4.160E-08	2.832E-08	2.104E-08	1.655E-08	1.352E-08	1.135E-08	9.727E-09	8.478E-09	6.598E-08	3.437E-08	2.249E-08	1.309E-08	8.956E-09	6.687E-09	5.273E-09	4.317E-09	3.633E-09	3.121E-09	2.726E-09	6.598E-08	3.437E-08	2.249E-08	1.309E-08	8.956E-09	6.687E-09	5.273E-09	4.317E-09	3.633E-09	3.121E-09	2.726E-09				
WSW	6.598E-08	3.437E-08	2.249E-08	1.309E-08	8.956E-09	6.687E-09	5.273E-09	4.317E-09	3.633E-09	3.121E-09	2.726E-09	6.598E-08	3.437E-08	2.249E-08	1.309E-08	8.956E-09	6.687E-09	5.273E-09	4.317E-09	3.633E-09	3.121E-09	2.726E-09	1.037E-08	4.83E-09	3.627E-09	2.143E-09	1.484E-09	1.119E-09	8.94E-10	7.331E-10	6.206E-10	5.361E-10	4.704E-10	1.037E-08	4.83E-09	3.627E-09	2.143E-09	1.484E-09	1.119E-09	8.94E-10	7.331E-10	6.206E-10	5.361E-10	4.704E-10				
W	1.037E-08	4.83E-09	3.627E-09	2.143E-09	1.484E-09	1.119E-09	8.94E-10	7.331E-10	6.206E-10	5.361E-10	4.704E-10	1.037E-08	4.83E-09	3.627E-09	2.143E-09	1.484E-09	1.119E-09	8.94E-10	7.331E-10	6.206E-10	5.361E-10	4.704E-10	5.346E-08	2.713E-08	1.744E-08	9.505E-09	6.672E-09	4.923E-09	3.847E-09	3.12E-09	2.61E-09	2.235E-09	1.944E-09	5.346E-08	2.713E-08	1.744E-08	9.505E-09	6.672E-09	4.923E-09	3.847E-09	3.12E-09	2.61E-09	2.235E-09	1.944E-09				
WNW	5.346E-08	2.713E-08	1.744E-08	9.505E-09	6.672E-09	4.923E-09	3.847E-09	3.12E-09	2.61E-09	2.235E-09	1.944E-09	5.346E-08	2.713E-08	1.744E-08	9.505E-09	6.672E-09	4.923E-09	3.847E-09	3.12E-09	2.61E-09	2.235E-09	1.944E-09	3.118E-07	1.617E-07	1.055E-07	6.110E-08	4.164E-08	3.100E-08	2.439E-08	1.993E-08	1.675E-08	1.437E-08	1.254E-08	3.118E-07	1.617E-07	1.055E-07	6.110E-08	4.164E-08	3.100E-08	2.439E-08	1.993E-08	1.675E-08	1.437E-08	1.254E-08				
NW	3.118E-07	1.617E-07	1.055E-07	6.110E-08	4.164E-08	3.100E-08	2.439E-08	1.993E-08	1.675E-08	1.437E-08	1.254E-08	3.118E-07	1.617E-07	1.055E-07	6.110E-08	4.164E-08</																																



VENTS GROUND LEVEL RELEASES - JAN-MAR 1990  
2.260 DAY DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHL/Q (SEC/METER CUBED)

SECTOR	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.130E-04	3.954E-05	2.146E-05	1.072E-05	4.189E-06	2.218E-06	1.380E-06	9.468E-07	6.942E-07	5.336E-07	4.249E-07
SSW	6.382E-05	2.145E-05	1.159E-05	5.805E-06	2.294E-06	1.226E-06	7.675E-07	4.298E-07	3.904E-07	3.015E-07	2.411E-07
SW	3.736E-05	1.253E-05	6.593E-06	3.261E-06	1.295E-06	6.943E-07	4.365E-07	3.023E-07	2.235E-07	1.730E-07	1.387E-07
WSW	2.032E-05	6.627E-06	3.564E-06	1.766E-06	7.034E-07	3.753E-07	2.350E-07	1.622E-07	1.196E-07	9.236E-08	7.388E-08
W	3.194E-06	1.010E-06	5.164E-07	2.511E-07	1.043E-07	5.717E-08	3.656E-08	2.570E-08	1.924E-08	1.508E-08	1.222E-08
NNW	1.766E-05	5.994E-06	3.109E-06	1.525E-06	5.943E-07	3.161E-07	1.968E-07	1.352E-07	9.931E-08	7.646E-08	6.100E-08
NW	9.256E-05	3.054E-05	1.624E-05	8.120E-06	3.247E-06	1.749E-06	1.102E-06	7.642E-07	5.655E-07	4.383E-07	3.516E-07
NNW	1.492E-04	4.986E-05	2.707E-05	1.363E-05	5.452E-06	2.937E-06	1.851E-06	1.284E-06	9.508E-07	7.370E-07	5.914E-07
N	1.604E-04	2.79E-05	2.885E-05	1.462E-05	5.885E-06	3.185E-06	2.015E-06	1.402E-06	1.042E-06	8.090E-07	6.506E-07
NNE	7.930E-05	2.640E-05	1.439E-05	7.268E-06	2.882E-06	1.543E-06	9.680E-07	6.94E-07	4.941E-07	3.821E-07	3.061E-07
NE	7.105E-05	2.397E-05	1.289E-05	6.451E-06	2.579E-06	1.351E-06	8.434E-07	5.805E-07	4.267E-07	3.288E-07	2.623E-07
E	1.792E-05	6.363E-06	3.484E-06	1.747E-06	6.877E-07	3.666E-07	2.292E-07	1.581E-07	1.164E-07	8.986E-08	7.184E-08
ESE	9.394E-06	3.344E-06	1.789E-06	8.851E-07	3.394E-07	1.774E-07	1.092E-07	7.435E-08	5.416E-08	4.141E-08	3.283E-08
SE	1.487E-05	5.358E-06	2.894E-06	1.437E-06	5.520E-07	2.889E-07	1.780E-07	1.213E-07	8.888E-08	6.759E-08	5.359E-08
SSE	4.351E-05	1.517E-05	8.109E-06	4.001E-06	1.536E-06	8.061E-07	4.984E-07	3.407E-07	2.491E-07	1.911E-07	1.520E-07
SSE	6.164E-05	2.055E-05	1.104E-05	5.534E-06	2.170E-06	1.153E-06	7.189E-07	4.945E-07	3.634E-07	2.799E-07	2.233E-07

ANNUAL AVERAGE CHL/Q (SEC/METER CUBED)

BEARING	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.478E-07	1.697E-07	1.048E-07	5.504E-08	3.435E-08	2.357E-08	1.717E-08	1.304E-08	1.025E-08	8.245E-09	6.767E-09
SSW	1.980E-07	9.804E-08	6.122E-08	3.269E-08	2.067E-08	1.433E-08	1.052E-08	8.053E-09	6.353E-09	5.132E-09	4.226E-09
SW	1.143E-07	5.722E-08	3.611E-08	1.967E-08	1.268E-08	8.950E-09	6.690E-09	5.206E-09	4.173E-09	3.422E-09	2.859E-09
WSW	6.081E-08	3.042E-08	1.913E-08	1.030E-08	6.548E-09	4.551E-09	3.350E-09	2.567E-09	2.027E-09	1.638E-09	1.349E-09
W	1.017E-08	5.315E-09	3.477E-09	2.010E-09	1.361E-09	9.003E-09	7.988E-10	6.285E-10	5.201E-10	4.392E-10	3.768E-10
NNW	5.002E-08	2.466E-08	1.542E-08	8.322E-09	5.348E-09	3.778E-09	2.835E-09	2.217E-09	1.788E-09	1.477E-09	1.243E-09
NW	2.897E-07	1.452E-07	9.170E-08	4.986E-08	3.202E-08	2.253E-08	1.686E-08	1.305E-08	1.044E-08	8.550E-09	7.133E-09
N	4.873E-07	2.443E-07	1.541E-07	8.388E-08	5.353E-08	3.754E-08	2.789E-08	2.192E-08	1.722E-08	1.406E-08	1.170E-08
NNE	5.374E-07	2.721E-07	1.730E-07	9.506E-08	6.151E-08	4.355E-08	3.265E-08	2.547E-08	2.048E-08	1.684E-08	1.411E-08
NE	2.510E-07	1.257E-07	7.922E-08	4.309E-08	2.776E-08	1.961E-08	1.469E-08	1.146E-08	9.223E-09	7.597E-09	6.376E-09
E	1.511E-07	1.057E-07	6.570E-08	3.485E-08	2.194E-08	1.517E-08	1.114E-08	8.524E-09	6.730E-09	5.445E-09	4.891E-09
ESE	5.901E-08	2.923E-08	1.825E-08	9.826E-09	6.262E-09	4.379E-09	3.251E-09	2.516E-09	2.009E-09	1.643E-09	1.370E-09
SE	2.677E-08	1.291E-08	7.943E-09	4.193E-09	2.658E-09	1.861E-09	1.388E-09	1.082E-09	8.713E-10	7.198E-10	6.067E-10
SSE	4.370E-08	2.103E-08	1.290E-08	6.746E-09	4.227E-09	2.921E-09	2.150E-09	1.633E-09	1.313E-09	1.070E-09	8.903E-10
SSE	1.245E-07	6.140E-08	3.827E-08	2.041E-08	1.291E-08	8.963E-09	6.600E-09	5.074E-09	4.008E-09	3.249E-09	2.686E-09
SSE	1.832E-07	9.032E-08	5.625E-08	2.991E-08	1.885E-08	1.304E-08	9.567E-09	7.319E-09	5.776E-09	4.670E-09	3.850E-09

CHL/Q (SEC/METER CUBED) FOR EACH SECTOR

SECTOR BOUNDARIES IN MILES

DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.071E-05	4.765E-06	1.430E-06	7.052E-07	4.286E-07	1.804E-07	5.691E-08	2.388E-08	1.316E-08	8.291E-09
SSW	1.121E-05	2.599E-06	7.946E-07	3.964E-07	2.430E-07	1.039E-07	5.691E-08	1.450E-08	8.112E-09	5.158E-09
SW	6.432E-06	1.465E-06	4.516E-07	2.268E-07	1.398E-07	6.051E-08	2.622E-08	9.041E-09	5.236E-09	3.436E-09
WSW	3.434E-06	7.981E-07	2.433E-07	1.214E-07	7.451E-08	3.216E-08	1.060E-08	4.603E-09	2.585E-09	1.646E-09
W	5.100E-07	1.169E-07	3.771E-08	1.950E-08	1.231E-08	5.576E-09	2.048E-09	1.009E-09	6.305E-10	4.401E-10
NNW	3.047E-06	6.782E-07	2.040E-07	1.009E-07	6.152E-08	2.619E-08	8.578E-09	3.820E-09	2.230E-09	1.482E-09
NW	1.591E-05	3.664E-06	1.139E-06	5.738E-07	3.543E-07	1.535E-07	5.123E-08	2.277E-08	1.313E-08	8.585E-09
NNW	2.616E-05	6.151E-06	1.914E-06	9.647E-07	5.960E-07	2.582E-07	8.589E-08	3.794E-08	2.173E-08	1.412E-08
N	2.785E-05	6.626E-06	2.082E-06	1.056E-06	6.556E-07	2.870E-07	9.747E-08	4.398E-08	2.562E-08	1.691E-08
NNE	1.389E-05	3.261E-06	1.002E-06	5.015E-07	3.085E-07	1.331E-07	4.431E-08	1.981E-08	1.153E-08	7.627E-09
NE	1.249E-05	2.880E-06	8.736E-07	4.334E-07	2.645E-07	1.122E-07	3.597E-08	1.536E-08	8.587E-09	5.472E-09
ESE	3.352E-06	7.803E-07	2.374E-07	1.182E-07	7.243E-08	3.098E-08	1.012E-08	4.430E-09	2.533E-09	1.650E-09
E	1.733E-06	3.887E-07	1.135E-07	5.507E-08	3.312E-08	1.378E-08	4.344E-09	1.884E-09	1.089E-09	7.228E-10
ESE	2.794E-06	6.317E-07	1.849E-07	8.966E-08	5.407E-08	2.246E-08	6.995E-09	2.961E-09	1.666E-09	1.076E-09
SE	7.853E-06	1.759E-06	5.173E-07	2.532E-07	1.534E-07	6.515E-08	2.105E-08	9.072E-09	5.101E-09	3.266E-09
SSE	1.071E-05	2.465E-06	7.449E-07	3.690E-07	2.252E-07	9.561E-08	3.085E-08	1.320E-08	7.373E-09	4.694E-09

VENTS GROUND LEVEL RELEASES - JAN-MAR 1990  
6,000 DAY DECAY, DEPLETED

CORRECTED FOR OPEN TERRAIN RECALCULATION

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)										DISTANCE IN MILES										
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000	
S	1.072E-04	3.633E-05	1.931E-05	9.505E-06	3.625E-06	1.883E-06	1.153E-06	7.806E-07	5.656E-07	4.303E-07	3.395E-07	2.756E-07	2.309E-07	1.972E-07	1.702E-07	1.482E-07	1.292E-07	1.132E-07	9.922E-08	8.792E-08	
SSW	6.058E-05	1.971E-05	1.043E-05	5.145E-06	1.985E-06	1.040E-06	6.471E-07	4.366E-07	3.179E-07	2.430E-07	1.925E-07	1.568E-07	1.322E-07	1.132E-07	9.722E-08	8.322E-08	7.122E-08	6.122E-08	5.222E-08	4.522E-08	
SW	3.545E-05	1.151E-05	5.948E-06	2.887E-06	1.118E-06	5.878E-07	3.633E-07	2.402E-07	1.810E-07	1.364E-07	1.106E-07	9.422E-08	8.022E-08	6.822E-08	5.822E-08	5.022E-08	4.322E-08	3.722E-08	3.222E-08	2.822E-08	
WSW	1.928E-05	6.087E-06	3.204E-06	1.582E-06	6.081E-07	3.182E-07	1.960E-07	1.335E-07	9.721E-08	7.360E-08	5.867E-08	4.867E-08	4.167E-08	3.667E-08	3.267E-08	2.967E-08	2.717E-08	2.517E-08	2.317E-08	2.117E-08	
W	3.025E-06	9.296E-07	4.611E-07	2.339E-07	8.895E-08	4.760E-08	2.982E-08	2.058E-08	1.517E-08	1.171E-08	9.360E-09	7.860E-09	6.760E-09	5.860E-09	5.160E-09	4.560E-09	4.060E-09	3.660E-09	3.360E-09	3.060E-09	
WNW	1.675E-05	5.505E-06	2.793E-06	1.350E-06	5.140E-07	2.672E-07	1.635E-07	1.107E-07	8.019E-08	6.101E-08	4.815E-08	3.815E-08	3.115E-08	2.615E-08	2.215E-08	1.915E-08	1.665E-08	1.465E-08	1.265E-08	1.065E-08	
NW	8.784E-05	2.805E-05	1.460E-05	7.189E-06	3.602E-06	2.002E-06	1.169E-06	6.269E-07	4.501E-07	3.501E-07	2.788E-07	2.288E-07	1.888E-07	1.588E-07	1.388E-07	1.238E-07	1.088E-07	9.588E-08	8.488E-08	7.588E-08	
NNW	1.416E-04	4.580E-05	2.433E-05	1.297E-05	6.710E-06	3.570E-06	2.072E-06	1.145E-06	6.393E-07	4.448E-07	3.293E-07	2.493E-07	1.993E-07	1.593E-07	1.293E-07	1.093E-07	9.433E-08	8.133E-08	7.033E-08	6.133E-08	
N	7.522E-05	2.422E-05	1.291E-05	6.420E-06	3.401E-06	2.011E-06	1.147E-06	6.403E-07	4.783E-07	3.642E-07	2.892E-07	2.392E-07	1.992E-07	1.692E-07	1.492E-07	1.292E-07	1.142E-07	1.012E-07	8.922E-08	7.922E-08	
NNE	6.745E-05	2.203E-05	1.160E-05	5.719E-06	3.096E-06	1.797E-06	1.032E-06	5.602E-07	4.032E-07	3.132E-07	2.532E-07	2.032E-07	1.632E-07	1.332E-07	1.132E-07	9.822E-08	8.522E-08	7.422E-08	6.522E-08	5.722E-08	
NE	1.700E-05	5.839E-06	3.128E-06	1.544E-06	5.928E-07	3.096E-07	1.903E-07	1.293E-07	9.601E-08	7.172E-08	5.642E-08	4.742E-08	4.042E-08	3.542E-08	3.142E-08	2.842E-08	2.542E-08	2.342E-08	2.142E-08	1.942E-08	
E	6.910E-06	3.068E-06	1.608E-06	7.916E-07	2.920E-07	1.498E-07	9.038E-08	6.058E-08	4.398E-08	3.268E-08	2.573E-08	2.173E-08	1.873E-08	1.673E-08	1.523E-08	1.373E-08	1.223E-08	1.123E-08	1.023E-08	9.23E-09	
ESE	1.411E-05	4.916E-06	2.597E-06	1.270E-06	6.754E-07	3.437E-07	1.476E-07	9.905E-08	7.123E-08	5.383E-08	4.223E-08	3.423E-08	2.823E-08	2.423E-08	2.123E-08	1.873E-08	1.673E-08	1.523E-08	1.373E-08	1.223E-08	
SE	4.125E-05	1.393E-05	7.286E-06	3.540E-06	1.326E-06	6.819E-07	4.168E-07	2.793E-07	2.017E-07	1.530E-07	1.205E-07	1.005E-07	8.55E-08	7.45E-08	6.65E-08	5.95E-08	5.35E-08	4.85E-08	4.45E-08	4.05E-08	
SSE	5.851E-05	1.888E-05	9.942E-06	4.902E-06	1.876E-06	9.774E-07	5.997E-07	4.069E-07	2.958E-07	2.251E-07	1.775E-07	1.475E-07	1.275E-07	1.125E-07	1.025E-07	9.25E-08	8.45E-08	7.75E-08	7.15E-08	6.65E-08	
SEQUENT BOUNDARIES IN MILES																					
CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT																					
DIRECTION	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50											
FROM SITE	1.873E-05	4.158E-06	1.199E-06	5.753E-07	3.427E-07	1.401E-07	4.232E-08	1.737E-08	9.519E-09	5.984E-09	3.730E-09	2.285E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10	2.811E-10	1.688E-10	1.075E-10	6.782E-11	4.253E-11
S	1.014E-05	2.267E-06	6.657E-07	3.233E-07	1.942E-07	8.058E-08	2.501E-08	1.052E-08	5.863E-09	3.730E-09	2.285E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10	2.811E-10	1.688E-10	1.075E-10	6.782E-11	4.253E-11	
SSW	5.815E-06	1.275E-06	3.770E-07	1.840E-07	1.109E-07	4.636E-08	1.461E-08	6.259E-09	3.561E-09	2.285E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10	2.811E-10	1.688E-10	1.075E-10	6.782E-11	4.253E-11		
SW	3.124E-06	6.956E-07	2.036E-07	9.884E-08	5.943E-08	2.488E-08	7.852E-09	3.339E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10	2.811E-10	1.688E-10	1.075E-10	6.782E-11	4.253E-11				
WSW	4.583E-07	1.046E-07	3.087E-08	1.540E-08	9.437E-09	4.056E-09	1.347E-09	6.064E-10	3.562E-10	2.373E-10	1.428E-09	9.181E-10	5.713E-09	3.562E-09	2.285E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10		
W	2.754E-06	5.901E-07	1.700E-07	8.160E-08	4.061E-08	1.992E-08	6.093E-09	2.549E-09	1.428E-09	9.181E-10	5.713E-09	3.562E-09	2.285E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10	2.811E-10	1.688E-10		
WNW	1.429E-05	3.190E-06	9.511E-07	4.652E-07	2.812E-07	1.177E-07	3.705E-08	1.578E-08	8.885E-09	5.713E-09	3.562E-09	2.285E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10	2.811E-10	1.688E-10	1.075E-10		
NW	2.365E-05	5.357E-06	1.599E-06	7.834E-07	4.737E-07	1.984E-07	6.253E-08	2.661E-08	1.493E-08	9.583E-09	5.984E-09	3.730E-09	2.285E-09	1.871E-09	1.193E-09	7.362E-10	4.591E-10	2.811E-10	1.688E-10		
NNW	2.514E-05	5.756E-06	1.732E-06	8.527E-07	5.173E-07	2.181E-07	6.953E-08	2.987E-08	1.689E-08	1.089E-08	7.428E-09	4.763E-09	3.037E-09	1.688E-09	1.075E-09	6.782E-10	4.253E-11	2.652E-11	1.688E-11		
NNE	1.254E-05	2.832E-06	8.325E-07	4.042E-07	2.428E-07	1.007E-07	3.132E-08	1.323E-08	7.428E-09	4.763E-09	3.037E-09	1.688E-09	1.075E-09	6.782E-10	4.253E-11	2.652E-11	1.688E-11	1.075E-11	6.782E-12		
NE	3.026E-06	6.783E-07	1.977E-07	9.561E-08	5.725E-08	2.363E-08	7.276E-09	3.037E-09	1.688E-09	1.075E-09	6.782E-10	4.253E-11	2.652E-11	1.688E-11	1.075E-11	6.782E-12	4.253E-13	2.652E-14	1.688E-15		
E	1.564E-06	3.374E-07	9.417E-08	4.436E-08	2.599E-08	1.038E-08	3.023E-09	1.216E-09	6.688E-10	4.151E-10	2.652E-11	1.688E-11	1.075E-11	6.782E-12	4.253E-13	2.652E-14	1.688E-15	1.075E-16	6.782E-17		
ESE	2.522E-06	5.489E-07	1.538E-07	7.255E-08	4.263E-08	1.707E-08	5.598E-09	2.255E-09	1.373E-09	8.483E-10	5.255E-10	3.255E-10	2.037E-10	1.255E-10	7.883E-11	4.983E-11	3.083E-11	1.983E-11	1.253E-11		
SE	7.098E-06	1.532E-06	4.318E-07	2.053E-07	1.217E-07	5.001E-08	1.534E-08	6.403E-09	2.603E-09	1.603E-09	9.883E-10	6.083E-10	3.883E-10	2.483E-10	1.583E-10	1.003E-10	6.33E-11	4.03E-11	2.53E-11	1.58E-11	
SSE	9.688E-06	2.149E-06	6.233E-07	3.005E-07	1.796E-07	7.408E-08	2.277E-08	7.408E-09	2.277E-09	7.408E-10	2.277E-10	7.408E-11	2.277E-11	7.408E-12	2.277E-13	7.408E-14	2.277E-15	7.408E-16	2.277E-17		



VENTS GROUND LEVEL RELEASES - JAN-MAR 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (M<sup>-2</sup>) AT FIXED POINTS BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	2.610E-07	8.826E-08	4.532E-08	2.154E-08	7.739E-09	3.838E-09	2.260E-09	1.480E-09	1.041E-09	7.716E-10	5.946E-10
SSW	1.191E-07	4.027E-08	2.067E-08	9.829E-09	3.531E-09	1.751E-09	1.031E-09	6.751E-10	4.750E-10	3.520E-10	2.713E-10
SW	6.535E-08	2.210E-08	1.135E-08	5.394E-09	1.930E-09	9.609E-10	5.658E-10	3.705E-10	2.607E-10	1.932E-10	1.489E-10
WSW	4.035E-08	1.365E-08	7.007E-09	3.331E-09	1.197E-09	5.934E-10	3.494E-10	2.288E-10	1.610E-10	1.193E-10	9.194E-11
W	1.092E-08	3.692E-09	1.896E-09	9.012E-10	3.237E-10	1.605E-10	9.453E-11	6.190E-11	4.355E-11	2.228E-11	2.487E-11
WNW	4.180E-08	1.413E-08	7.257E-09	3.450E-09	1.239E-09	6.146E-10	3.619E-10	2.370E-10	1.667E-10	1.236E-10	9.522E-11
NW	1.518E-07	5.135E-08	2.636E-08	1.253E-08	4.502E-09	2.233E-09	1.315E-09	8.608E-10	6.057E-10	4.489E-10	3.459E-10
NNW	2.497E-07	8.444E-08	4.335E-08	2.061E-08	7.404E-09	3.672E-09	2.162E-09	1.416E-09	9.961E-10	7.382E-10	5.689E-10
N	4.098E-07	1.386E-07	7.116E-08	3.383E-08	1.215E-08	6.026E-09	3.548E-09	2.323E-09	1.635E-09	1.212E-09	9.337E-10
NNE	2.574E-07	8.704E-08	4.469E-08	2.125E-08	7.632E-09	3.785E-09	2.228E-09	1.459E-09	1.027E-09	7.609E-10	5.864E-10
NE	1.202E-07	4.065E-08	2.087E-08	9.923E-09	3.564E-09	1.768E-09	1.041E-09	6.813E-10	4.795E-10	3.554E-10	2.739E-10
ENE	6.399E-08	2.164E-08	1.111E-08	5.282E-09	1.897E-09	9.410E-10	5.541E-10	3.628E-10	2.553E-10	1.892E-10	1.458E-10
E	5.570E-08	1.884E-08	9.671E-09	4.598E-09	1.652E-09	8.190E-10	4.823E-10	3.158E-10	2.222E-10	1.647E-10	1.269E-10
ESE	7.885E-08	2.666E-08	1.369E-08	6.509E-09	2.338E-09	1.159E-09	6.827E-10	4.470E-10	3.145E-10	2.331E-10	1.796E-10
SE	1.829E-07	6.184E-08	3.175E-08	1.510E-08	5.422E-09	2.689E-09	1.583E-09	1.037E-09	7.295E-10	5.406E-10	4.166E-10
SSE	2.072E-07	7.005E-08	3.597E-08	1.710E-08	6.142E-09	3.046E-09	1.794E-09	1.174E-09	8.264E-10	6.124E-10	4.719E-10

DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	4.724E-10	2.098E-10	1.271E-10	6.425E-11	3.889E-11	2.607E-11	1.868E-11	1.403E-11	1.091E-11	8.713E-12	7.112E-12
SSW	2.155E-10	9.574E-11	5.799E-11	2.931E-11	1.774E-11	1.190E-11	8.524E-12	6.400E-12	4.976E-12	3.975E-12	3.245E-12
SW	1.183E-10	5.254E-11	3.183E-11	1.609E-11	9.736E-12	6.528E-12	4.678E-12	3.512E-12	2.731E-12	2.182E-12	1.781E-12
WSW	7.304E-11	3.245E-11	1.965E-11	9.934E-12	6.013E-12	4.031E-12	2.889E-12	2.169E-12	1.687E-12	1.347E-12	1.100E-12
W	1.976E-11	8.778E-12	5.318E-12	2.688E-12	1.627E-12	1.091E-12	7.816E-13	5.869E-13	4.563E-13	3.645E-13	2.975E-13
WNW	7.565E-11	3.361E-11	2.036E-11	1.029E-11	6.228E-12	4.175E-12	2.992E-12	2.247E-12	1.747E-12	1.395E-12	1.139E-12
NW	2.748E-10	1.221E-10	7.395E-11	3.738E-11	2.262E-11	1.517E-11	1.087E-11	8.162E-12	6.346E-12	5.069E-12	4.138E-12
NNW	4.519E-10	2.008E-10	1.216E-10	6.147E-11	3.720E-11	2.494E-11	1.787E-11	1.342E-11	1.044E-11	8.336E-12	6.804E-12
N	7.417E-10	3.295E-10	1.996E-10	1.009E-10	6.106E-11	4.094E-11	2.934E-11	2.203E-11	1.713E-11	1.368E-11	1.117E-11
NNE	4.658E-10	2.069E-10	1.254E-10	6.336E-11	3.835E-11	2.571E-11	1.842E-11	1.383E-11	1.076E-11	8.593E-12	7.014E-12
NE	2.176E-10	9.665E-11	5.855E-11	2.959E-11	1.791E-11	1.201E-11	8.605E-12	6.461E-12	5.024E-12	4.013E-12	3.276E-12
ENE	1.158E-10	5.145E-11	3.117E-11	1.575E-11	9.535E-12	6.393E-12	4.581E-12	3.400E-12	2.675E-12	2.136E-12	1.744E-12
E	1.008E-10	4.478E-11	2.713E-11	1.371E-11	8.299E-12	5.564E-12	3.987E-12	2.994E-12	2.328E-12	1.860E-12	1.518E-12
ESE	1.427E-10	6.340E-11	3.840E-11	1.941E-11	1.175E-11	7.877E-12	5.644E-12	4.238E-12	3.295E-12	2.632E-12	2.149E-12
SE	3.310E-10	1.470E-10	8.907E-11	4.502E-11	2.725E-11	1.827E-11	1.309E-11	9.830E-12	7.643E-12	6.105E-12	4.983E-12
SSE	3.749E-10	1.666E-10	1.009E-10	5.100E-11	3.087E-11	2.069E-11	1.481E-11	1.113E-11	8.658E-12	6.916E-12	5.645E-12

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (M<sup>-2</sup>) BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.429E-08	9.073E-09	2.369E-09	1.064E-09	6.018E-10	2.314E-10	6.695E-11	2.653E-11	1.417E-11	8.770E-12
SSW	2.021E-08	4.139E-09	1.081E-09	4.853E-10	2.745E-10	1.056E-10	3.054E-11	1.211E-11	6.465E-12	4.001E-12
SW	1.109E-08	2.272E-09	5.930E-10	2.663E-10	1.507E-10	5.794E-11	1.676E-11	6.643E-12	3.548E-12	2.196E-12
WSW	6.848E-09	1.403E-09	3.662E-10	1.645E-10	9.304E-11	3.578E-11	1.035E-11	4.107E-12	2.191E-12	1.256E-12
W	1.853E-09	3.795E-10	9.908E-11	4.450E-11	2.517E-11	9.681E-12	2.801E-12	1.110E-12	5.928E-13	3.669E-13
WNW	7.093E-09	1.453E-09	3.793E-10	1.704E-10	9.637E-11	3.706E-11	1.072E-11	4.249E-12	2.269E-12	1.404E-12
NW	2.577E-08	5.278E-09	1.378E-09	6.189E-10	3.501E-10	1.346E-10	3.895E-11	1.544E-11	8.244E-12	5.102E-12
NNW	4.138E-08	8.680E-09	2.266E-09	1.018E-09	5.757E-10	2.214E-10	6.405E-11	2.539E-11	1.356E-11	8.391E-12
N	6.955E-08	1.425E-08	3.719E-09	1.670E-09	9.449E-10	3.634E-10	1.051E-10	4.167E-11	2.225E-11	1.377E-11
NNE	4.368E-08	8.947E-09	2.336E-09	1.049E-09	5.935E-10	2.282E-10	6.602E-11	2.617E-11	1.397E-11	8.649E-12
NE	2.040E-08	4.179E-09	1.091E-09	4.899E-10	2.772E-10	1.066E-10	3.083E-11	1.222E-11	6.526E-12	4.039E-12
ENE	1.086E-08	2.225E-09	5.807E-10	2.608E-10	1.476E-10	5.674E-11	1.642E-11	6.506E-12	3.474E-12	2.150E-12
E	9.453E-09	1.936E-09	5.055E-10	2.270E-10	1.284E-10	4.939E-11	1.429E-11	5.663E-12	3.024E-12	1.872E-12
ESE	1.338E-08	2.741E-09	7.156E-10	3.214E-10	1.818E-10	6.991E-11	2.023E-11	8.016E-12	4.281E-12	2.650E-12
SE	3.103E-08	6.357E-09	1.660E-09	7.457E-10	4.216E-10	1.621E-10	4.691E-11	1.859E-11	9.928E-12	6.145E-12
SSE	3.516E-08	7.201E-09	1.880E-09	8.443E-10	4.776E-10	1.837E-10	5.314E-11	2.106E-11	1.125E-11	6.961E-12



VENTS GROUND LEVEL RELEASES - JAN-MAR 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE		X/Q	X/Q	X/Q	D/Q
			(MILES)	(METERS)	(SEC/CUB.METER)	(SEC/CUB.METER)	(SEC/CUB.METER)	(PER SQ.(METER)
NO DECAY								
2.260 DAY DECAY								
8.000 DAY DECAY								
			UNDEPLETED		UNDEPLETED		DEPLETED	
A	SITE BOUNDARY	S	0.80	1287.	1.871E-05	1.845E-05	1.654E-05	3.854E-08
A	SITE BOUNDARY	SSW	0.82	1327.	9.377E-06	9.243E-06	8.275E-06	1.622E-08
A	SITE BOUNDARY	SW	0.98	1569.	3.512E-06	3.459E-06	3.066E-06	5.756E-09
A	SITE BOUNDARY	WSW	0.93	1489.	2.182E-06	2.149E-06	1.911E-06	4.070E-09
A	SITE BOUNDARY	W	0.91	1468.	3.188E-07	3.178E-07	2.805E-07	1.143E-09
A	SITE BOUNDARY	WNW	0.94	1509.	1.864E-06	1.783E-06	1.583E-06	4.072E-09
A	SITE BOUNDARY	NW	0.81	1307.	1.360E-05	1.343E-05	1.202E-05	2.153E-08
A	SITE BOUNDARY	NNW	0.69	1106.	3.120E-05	3.086E-05	2.785E-05	5.021E-08
A	SITE BOUNDARY	N	0.67	1086.	3.404E-05	3.373E-05	3.043E-05	8.497E-08
A	SITE BOUNDARY	NNE	0.60	965.	2.019E-05	2.003E-05	1.818E-05	6.467E-08
A	SITE BOUNDARY	NE	0.62	1005.	1.721E-05	1.703E-05	1.545E-05	2.838E-08
A	SITE BOUNDARY	ENE	0.59	945.	5.061E-06	5.021E-06	4.565E-06	1.644E-08
A	SITE BOUNDARY	E	0.53	845.	3.119E-06	3.099E-06	2.835E-06	1.739E-08
A	SITE BOUNDARY	ESE	0.54	865.	4.834E-06	4.800E-06	4.386E-06	2.370E-08
A	SITE BOUNDARY	SE	0.65	1046.	1.025E-05	1.015E-05	9.177E-06	4.038E-08
A	SITE BOUNDARY	SSE	0.81	1307.	9.276E-06	9.152E-06	8.196E-06	2.937E-08
A	NEAR. RESIDENCE	SW	1.30	2092.	1.819E-07	1.782E-07	1.553E-07	2.767E-09
A	NEAR. RESIDENCE	WSW	1.30	2092.	9.920E-07	9.709E-07	8.470E-07	1.709E-09
A	NEAR. RESIDENCE	W	1.00	1609.	2.560E-07	2.551E-07	2.239E-07	9.012E-10
A	NEAR. RESIDENCE	WNW	1.60	2576.	5.274E-07	5.157E-07	4.429E-07	1.056E-09
A	NEAR. RESIDENCE	NW	0.90	1448.	1.060E-05	1.045E-05	9.302E-06	1.647E-08
A	NEAR. RESIDENCE	NNW	1.90	3059.	3.370E-06	3.271E-06	2.780E-06	4.151E-09
A	NEAR. RESIDENCE	N	3.00	4829.	1.458E-06	1.402E-06	1.145E-06	2.322E-09
A	NEAR. RESIDENCE	NNE	2.40	3963.	1.085E-06	1.053E-06	8.748E-07	2.452E-09
A	NEAR. RESIDENCE	ENE	1.70	2737.	5.333E-07	5.210E-07	4.452E-07	1.394E-09
A	NEAR. RESIDENCE	E	1.80	2898.	2.290E-07	2.242E-07	1.903E-07	1.056E-09
A	NEAR. RESIDENCE	ESE	2.00	3220.	2.963E-07	2.887E-07	2.435E-07	1.159E-09
A	NEAR. RESIDENCE	SE	2.20	3542.	6.764E-07	6.546E-07	5.499E-07	2.140E-09
A	NEAREST COW	NNW	3.50	5634.	1.003E-06	9.503E-07	7.707E-07	9.955E-10
A	NEAREST GARDEN	SW	1.40	2253.	1.542E-06	1.509E-06	1.309E-06	2.298E-09
A	NEAREST GARDEN	WSW	1.30	2092.	9.920E-07	9.709E-07	8.470E-07	1.709E-09
A	NEAREST GARDEN	W	2.30	3702.	4.350E-08	4.311E-08	3.545E-08	1.150E-10
A	NEAREST GARDEN	WNW	1.60	2575.	5.283E-07	5.162E-07	4.433E-07	1.057E-09
A	NEAREST GARDEN	NW	0.90	1448.	1.060E-05	1.045E-05	9.302E-06	1.647E-08
A	NEAREST GARDEN	NNW	1.90	3058.	3.373E-06	3.273E-06	2.782E-06	4.155E-09
A	NEAREST GARDEN	NNE	2.70	4345.	8.556E-07	8.274E-07	6.810E-07	1.862E-09
A	NEAREST GARDEN	ENE	1.70	2736.	5.338E-07	5.214E-07	4.456E-07	1.395E-09
A	NEAREST GARDEN	E	1.80	2897.	2.292E-07	2.243E-07	1.905E-07	1.056E-09
A	NEAREST GARDEN	ESE	2.40	3863.	2.004E-07	1.942E-07	1.616E-07	7.513E-10
A	NEAREST GARDEN	SE	3.00	4828.	3.562E-07	3.407E-07	2.793E-07	1.037E-09

Atmospheric Diffusion Estimates  
Ground Level Releases  
April-June 1990

VENTS GROUND LEVEL RELEASES - APR-JUNE 1990  
NO DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

SECTOR	DISTANCE IN MILES											
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)												
S	3.860E-05	1.268E-05	6.688E-06	3.333E-06	1.337E-06	7.241E-07	4.591E-07	3.206E-07	2.388E-07	1.864E-07	1.506E-07	
SSW	3.684E-05	1.222E-05	6.463E-06	3.225E-06	1.297E-06	7.025E-07	4.455E-07	3.111E-07	2.318E-07	1.809E-07	1.461E-07	
SW	2.632E-05	8.442E-06	4.399E-06	2.186E-06	8.801E-07	4.776E-07	3.033E-07	2.121E-07	1.582E-07	1.236E-07	9.996E-08	
WSW	1.551E-05	5.484E-06	2.912E-06	1.441E-06	5.614E-07	2.974E-07	1.853E-07	1.275E-07	9.387E-08	7.246E-08	5.798E-08	
W	1.697E-05	5.806E-06	3.056E-06	1.513E-06	5.983E-07	3.205E-07	2.015E-07	1.397E-07	1.035E-07	8.034E-08	6.461E-08	
WNW	1.117E-05	3.990E-06	2.134E-06	1.037E-06	4.050E-07	2.119E-07	1.308E-07	8.925E-08	6.521E-08	5.001E-08	3.978E-08	
NW	3.889E-05	1.315E-05	6.928E-06	3.435E-06	1.367E-06	7.354E-07	4.640E-07	3.227E-07	2.397E-07	1.865E-07	1.503E-07	
NNW	6.210E-05	1.983E-05	1.028E-05	5.110E-06	2.083E-06	1.139E-06	7.280E-07	5.116E-07	3.831E-07	3.003E-07	2.436E-07	
N	6.535E-05	2.136E-05	1.135E-05	5.668E-06	2.270E-06	1.227E-06	7.773E-07	5.423E-07	4.037E-07	3.149E-07	2.542E-07	
NNE	2.278E-05	7.420E-06	4.025E-06	2.035E-06	8.152E-07	4.406E-07	2.789E-07	1.945E-07	1.448E-07	1.129E-07	9.111E-08	
NE	1.515E-05	4.668E-06	2.476E-06	1.251E-06	5.129E-07	2.816E-07	1.604E-07	1.270E-07	9.529E-08	7.479E-08	6.073E-08	
ENE	7.642E-06	2.568E-06	1.361E-06	6.779E-07	2.715E-07	1.468E-07	9.297E-08	6.486E-08	4.829E-08	3.766E-08	3.040E-08	
E	1.150E-05	3.706E-06	1.931E-06	9.585E-07	3.876E-07	2.111E-07	1.345E-07	9.427E-08	7.048E-08	5.57E-08	4.469E-08	
ESE	1.046E-05	3.555E-06	1.856E-06	9.116E-07	3.552E-07	1.884E-07	1.176E-07	8.115E-08	5.985E-08	4.631E-08	3.713E-08	
SE	1.377E-05	4.697E-06	2.524E-06	1.257E-06	4.876E-07	2.577E-07	1.604E-07	1.104E-07	8.124E-08	6.273E-08	5.020E-08	
SSE	3.618E-05	1.170E-05	6.234E-06	3.131E-06	1.265E-06	6.880E-07	4.377E-07	3.064E-07	2.288E-07	1.789E-07	1.448E-07	
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)												
BEARING	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	1.250E-07	6.499E-08	4.249E-08	2.471E-08	1.692E-08	1.264E-08	9.972E-09	8.170E-09	6.880E-09	5.915E-09	5.169E-09	
SSW	1.212E-07	6.289E-08	4.104E-08	2.379E-08	1.624E-08	1.210E-08	9.532E-09	7.798E-09	6.557E-09	5.631E-09	4.916E-09	
SW	8.335E-08	4.334E-08	2.842E-08	1.660E-08	1.142E-08	8.556E-09	6.771E-09	5.561E-09	4.692E-09	4.041E-09	3.538E-09	
WSW	4.771E-08	2.398E-08	1.530E-08	8.580E-09	5.718E-09	4.183E-09	3.245E-09	2.621E-09	2.180E-09	1.854E-09	1.604E-09	
W	5.340E-08	2.731E-08	1.745E-08	1.009E-08	6.829E-09	5.055E-09	3.960E-09	3.225E-09	2.702E-09	2.312E-09	2.013E-09	
WNW	3.256E-08	1.600E-08	1.004E-08	5.502E-09	3.613E-09	2.612E-09	2.006E-09	1.606E-09	1.326E-09	1.120E-09	9.629E-10	
NW	1.244E-07	6.408E-08	4.162E-08	2.398E-08	1.632E-08	1.213E-08	9.538E-09	7.791E-09	6.543E-09	5.613E-09	4.895E-09	
NNW	2.028E-07	1.067E-07	7.038E-08	4.139E-08	2.855E-08	2.145E-08	1.701E-08	1.399E-08	1.182E-08	1.019E-08	8.933E-09	
N	2.109E-07	1.093E-07	7.136E-08	4.140E-08	2.831E-08	2.113E-08	1.666E-08	1.364E-08	1.148E-08	9.863E-09	8.615E-09	
NNE	7.555E-08	3.913E-08	2.551E-08	1.477E-08	1.008E-08	7.510E-09	5.912E-09	4.834E-09	4.063E-09	3.487E-09	3.043E-09	
NE	5.063E-08	2.678E-08	1.771E-08	1.045E-08	7.228E-09	5.439E-09	4.317E-09	3.554E-09	3.005E-09	2.592E-09	2.272E-09	
ENE	2.522E-08	1.307E-08	8.522E-09	4.939E-09	3.373E-09	2.515E-09	1.982E-09	1.621E-09	1.364E-09	1.171E-09	1.023E-09	
E	3.718E-08	1.952E-08	1.285E-08	7.549E-09	5.212E-09	3.919E-09	3.109E-09	2.558E-09	2.162E-09	1.865E-09	1.635E-09	
ESE	3.062E-08	1.555E-08	1.009E-08	5.705E-09	3.870E-09	2.871E-09	2.253E-09	1.837E-09	1.541E-09	1.321E-09	1.151E-09	
SE	4.133E-08	2.083E-08	1.331E-08	535E-09	5.081E-09	3.751E-09	2.931E-09	2.382E-09	1.991E-09	1.701E-09	1.478E-09	
SSE	1.203E-07	6.290E-08	4.127E-08	2.410E-08	1.633E-08	1.237E-08	9.772E-09	8.013E-09	6.752E-09	5.809E-09	5.079E-09	
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)												
BEARING	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES															
	5-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT																
S	6.528E-06	1.508E-06	4.743E-07	2.422E-07	1.517E-07	6.832E-08	2.520E-08	1.271E-08	8.193E-09	5.924E-09						
SSW	6.304E-06	1.461E-06	4.603E-07	2.351E-07	1.472E-07	6.614E-08	2.427E-08	1.218E-08	7.821E-09	5.440E-09						
SW	4.314E-06	9.914E-07	3.133E-07	1.604E-07	1.007E-07	4.553E-08	1.692E-08	8.605E-09	5.574E-09	4.048E-09						
WSW	2.830E-06	6.395E-07	1.921E-07	9.534E-08	5.846E-08	2.539E-08	8.800E-09	4.217E-09	2.631E-09	1.858E-09						
W	2.981E-06	6.781E-07	2.085E-07	1.050E-07	6.512E-08	2.881E-08	1.032E-08	5.090E-09	3.236E-09	2.317E-09						
WNW	2.068E-06	4.640E-07	1.358E-07	6.625E-08	4.014E-08	1.703E-08	5.671E-09	2.837E-09	1.614E-09	1.123E-09						
NW	6.759E-06	1.546E-06	4.790E-07	2.431E-07	1.514E-07	6.751E-08	2.449E-08	1.221E-08	7.815E-09	5.623E-09						
NNW	1.010E-05	2.336E-06	7.511E-07	3.883E-07	2.453E-07	1.119E-07	4.213E-08	2.157E-08	1.403E-08	1.021E-08						
N	1.104E-05	2.562E-06	8.033E-07	4.093E-07	2.561E-07	1.150E-07	4.224E-08	2.124E-08	1.368E-08	9.879E-09						
NNE	3.895E-06	9.198E-07	2.883E-07	1.468E-07	9.180E-08	4.117E-08	1.507E-08	7.556E-09	4.848E-09	3.493E-09						
NE	2.419E-06	5.742E-07	1.860E-07	9.655E-08	6.115E-08	2.805E-08	1.375E-08	5.039E-09	3.563E-09	2.596E-09						
ENE	1.326E-06	3.064E-07	9.608E-08	4.897E-08	3.063E-08	1.375E-08	5.039E-09	2.530E-09	1.626E-09	1.173E-09						
E	1.893E-06	4.360E-07	1.388E-07	7.144E-08	4.501E-08	2.048E-08	7.688E-09	3.940E-09	2.565E-09	1.868E-09						
ESE	1.814E-06	4.047E-07	1.219E-07	6.078E-08	3.744E-08	1.643E-08	5.845E-09	2.890E-09	1.843E-09	1.323E-09						
SE	2.445E-06	5.565E-07	1.664E-07	8.252E-08	5.063E-08	2.205E-08	7.731E-09	3.778E-09	2.390E-09	1.705E-09						
SSE	6.070E-06	1.423E-06	4.519E-07	2.320E-07	1.458E-07	6.605E-08	2.455E-08	1.244E-08	8.035E-09	5.818E-09						



VENTS GROUND LEVEL RELEASES - APR-JUNE 1999  
2.260 DAY DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CH1/Q (SEC/METER CUBED)		DISTANCE IN MILES									
SECTOR		0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000
SSW	S	3.855E-05	1.265E-05	6.661E-06	3.315E-06	1.327E-06	7.160E-07	4.526E-07	3.151E-07	2.340E-07	1.821E-07
SSW	SSW	3.678E-05	1.219E-05	6.434E-06	3.206E-06	1.285E-06	6.939E-07	4.386E-07	3.033E-07	2.267E-07	1.763E-07
SSW	SW	2.628E-05	8.417E-06	4.380E-06	2.173E-06	8.721E-07	4.716E-07	2.985E-07	2.080E-07	1.547E-07	1.204E-07
SSW	WSW	1.549E-05	5.471E-06	2.902E-06	1.434E-06	5.575E-07	2.944E-07	1.831E-07	1.237E-07	9.228E-08	7.106E-08
SSW	W	1.695E-05	5.792E-06	3.046E-06	1.506E-06	5.940E-07	3.173E-07	1.990E-07	1.376E-07	1.016E-07	7.869E-08
SSW	WNW	1.117E-05	3.984E-06	2.129E-06	1.053E-06	4.031E-07	2.104E-07	1.297E-07	8.841E-08	6.449E-08	4.938E-08
SSW	NW	3.883E-05	1.311E-05	6.898E-06	3.415E-06	1.354E-06	7.264E-07	4.568E-07	3.167E-07	2.344E-07	1.818E-07
SSW	NNW	6.200E-05	1.977E-05	1.023E-05	5.078E-06	2.063E-06	1.125E-06	7.161E-07	5.014E-07	3.742E-07	2.923E-07
SSW	NNE	6.526E-05	2.130E-05	1.129E-05	5.639E-06	2.233E-06	1.213E-06	7.671E-07	5.337E-07	3.963E-07	3.082E-07
SSW	NE	2.275E-05	7.405E-06	4.013E-06	2.027E-06	8.101E-07	4.369E-07	2.760E-07	1.921E-07	1.426E-07	1.105E-07
SSW	ENE	1.512E-05	4.654E-06	2.465E-06	1.244E-06	5.083E-07	2.782E-07	1.776E-07	1.246E-07	9.320E-08	7.291E-08
SSW	E	7.631E-06	2.561E-06	1.356E-06	6.746E-07	2.695E-07	1.453E-07	9.177E-08	6.385E-08	4.740E-08	3.686E-08
SSW	ESE	1.149E-05	3.696E-06	1.924E-06	9.536E-07	3.847E-07	1.327E-07	9.273E-08	6.912E-08	5.394E-08	4.356E-08
SSW	SE	1.045E-05	3.548E-06	1.851E-06	9.083E-07	3.531E-07	1.870E-07	1.165E-07	8.016E-08	5.899E-08	4.553E-08
SSW	SSE	1.376E-05	4.691E-06	2.521E-06	1.254E-06	4.855E-07	2.563E-07	1.593E-07	1.094E-07	8.040E-08	6.198E-08
SSW	SSE	3.614E-05	1.167E-05	6.211E-06	3.116E-06	1.256E-06	6.211E-07	4.321E-07	3.017E-07	2.247E-07	1.752E-07
ANNUAL AVERAGE CH1/Q (SEC/METER CUBED)		DISTANCE IN MILES									
BEARING		5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000
S	S	1.213E-07	6.211E-08	3.998E-08	2.253E-08	1.496E-08	1.084E-08	8.300E-09	6.602E-09	5.401E-09	4.513E-09
SSW	SSW	1.174E-07	5.988E-08	3.843E-08	2.155E-08	1.423E-08	1.027E-08	7.836E-09	6.212E-09	5.065E-09	4.220E-09
SSW	SW	8.034E-08	4.121E-08	2.655E-08	1.498E-08	9.952E-09	7.212E-09	5.521E-09	4.389E-09	3.586E-09	2.993E-09
SSW	WSW	4.654E-08	2.309E-08	1.454E-08	7.948E-09	5.162E-09	3.682E-09	2.785E-09	2.194E-09	1.781E-09	1.478E-09
SSW	W	5.201E-08	2.623E-08	1.671E-08	9.284E-09	6.103E-09	4.392E-09	3.346E-09	2.651E-09	2.162E-09	1.802E-09
SSW	WNW	3.204E-08	1.562E-08	9.720E-09	5.241E-09	3.387E-09	2.409E-09	1.821E-09	1.435E-09	1.165E-09	9.686E-10
SSW	NW	1.205E-07	6.102E-08	3.896E-08	2.171E-08	1.429E-08	1.028E-08	7.830E-09	6.196E-09	5.045E-09	4.197E-09
SSW	NNW	1.960E-07	1.013E-07	6.561E-08	3.724E-08	2.480E-08	1.801E-08	1.381E-08	1.099E-08	8.992E-09	7.514E-09
SSW	NNE	2.052E-07	1.050E-07	6.754E-08	3.811E-08	2.536E-08	1.843E-08	1.455E-08	1.129E-08	9.264E-09	7.764E-09
SSW	NE	7.393E-08	3.787E-08	2.441E-08	1.362E-08	9.229E-09	6.729E-09	5.186E-09	4.151E-09	3.417E-09	2.872E-09
SSW	ENE	4.903E-08	2.550E-08	1.659E-08	9.477E-09	6.344E-09	4.625E-09	3.557E-09	2.839E-09	2.320E-09	1.949E-09
SSW	E	2.455E-08	1.254E-08	8.064E-09	4.543E-09	3.019E-09	2.191E-09	1.681E-09	1.340E-09	1.099E-09	9.206E-10
SSW	ESE	3.614E-08	1.868E-08	1.211E-08	6.906E-09	4.631E-09	3.385E-09	2.610E-09	2.090E-09	1.720E-09	1.445E-09
SSW	SE	2.997E-08	1.504E-08	9.564E-09	5.326E-09	3.530E-09	2.560E-09	1.965E-09	1.588E-09	1.288E-09	1.081E-09
SSW	SSE	4.071E-08	2.036E-08	1.292E-08	7.191E-09	4.774E-09	3.470E-09	2.670E-09	2.136E-09	1.759E-09	1.480E-09
SSW	SSE	1.172E-07	6.041E-08	3.908E-08	2.220E-08	1.482E-08	1.079E-08	8.305E-09	6.636E-09	5.451E-09	4.573E-09

CH1/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE		SEGMENT BOUNDARIES IN MILES									
		5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	S	6.504E-06	1.497E-06	6.678E-07	2.374E-07	1.478E-07	6.543E-08	2.304E-08	1.092E-08	6.630E-09	4.525E-09
SSW	SSW	6.277E-06	1.449E-06	4.533E-07	2.300E-07	1.430E-07	6.313E-08	2.205E-08	1.035E-08	5.239E-09	4.232E-09
SSW	SW	4.296E-06	9.832E-07	3.095E-07	1.569E-07	9.779E-08	4.339E-08	1.532E-08	7.266E-09	4.406E-09	3.001E-09
SSW	WSW	2.821E-06	6.355E-07	1.899E-07	9.375E-08	5.720E-08	2.450E-08	8.175E-09	3.718E-09	2.205E-09	1.483E-09
SSW	W	2.972E-06	6.737E-07	2.060E-07	1.032E-07	6.361E-08	2.772E-08	9.520E-09	4.430E-09	2.664E-09	1.807E-09
SSW	WNW	2.063E-06	4.621E-07	1.348E-07	6.537E-08	3.957E-08	1.665E-08	5.412E-09	2.434E-09	1.442E-09	9.718E-10
SSW	NW	6.731E-06	1.533E-06	4.725E-07	2.379E-07	1.472E-07	6.443E-08	2.225E-08	1.037E-08	6.224E-09	4.209E-09
SSW	NNW	1.004E-05	2.316E-06	7.392E-07	3.793E-07	2.379E-07	1.065E-07	3.801E-08	1.814E-08	1.103E-08	7.534E-09
SSW	NNE	1.100E-05	2.544E-06	7.931E-07	4.020E-07	2.500E-07	1.106E-07	3.898E-08	1.857E-08	1.134E-08	7.784E-09
SSW	NE	3.884E-06	9.146E-07	2.833E-07	1.447E-07	9.04E-08	3.900E-08	1.413E-08	6.778E-09	4.167E-09	2.879E-09
SSW	ENE	2.409E-06	5.695E-07	1.832E-07	9.445E-08	5.943E-08	2.677E-08	9.645E-09	4.656E-09	2.850E-09	1.954E-09
SSW	E	1.321E-06	3.043E-07	9.488E-08	4.809E-08	2.991E-08	1.322E-08	6.494E-09	2.208E-09	1.366E-09	9.230E-10
SSW	ESE	1.887E-06	4.330E-07	1.370E-07	7.008E-08	4.389E-08	1.964E-08	7.052E-09	3.406E-09	2.097E-09	1.448E-09
SSW	SE	1.809E-06	4.027E-07	1.207E-07	5.991E-08	3.673E-08	1.592E-08	5.469E-09	3.280E-09	1.575E-09	1.084E-09
SSW	SSE	2.440E-06	5.544E-07	1.652E-07	8.168E-08	4.995E-08	2.158E-08	7.390E-09	3.498E-09	2.145E-09	1.433E-09
SSW	SSE	6.049E-06	1.414E-06	4.664E-07	2.279E-07	1.424E-07	6.355E-08	2.267E-08	1.087E-08	6.662E-09	4.585E-09

VENTS GROUND LEVEL RELEASES - APR-JUNE 1990  
8.000 DAY DECAY. DEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

SECTOR	DISTANCE IN MILES									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000
S	3.652E-05	1.157E-05	5.953E-06	2.913E-06	1.133E-06	5.977E-07	3.704E-07	2.534E-07	1.421E-07	1.130E-07
SSW	3.685E-05	1.115E-05	5.752E-06	2.818E-06	1.098E-06	5.797E-07	3.593E-07	2.438E-07	1.797E-07	1.096E-07
SW	2.490E-05	7.703E-06	3.915E-06	1.910E-06	7.455E-07	3.940E-07	2.446E-07	1.675E-07	1.227E-07	7.494E-08
WSW	1.467E-05	5.004E-06	2.592E-06	1.260E-06	4.756E-07	2.456E-07	1.896E-07	1.009E-07	7.289E-08	4.356E-08
W	1.605E-05	5.299E-06	2.711E-06	1.323E-06	5.071E-07	2.646E-07	1.626E-07	1.105E-07	8.033E-08	4.852E-08
WNW	1.057E-05	3.642E-06	1.901E-06	9.241E-07	3.435E-07	1.752E-07	1.057E-07	7.071E-08	5.072E-08	3.996E-08
NW	3.679E-05	1.200E-05	6.166E-06	3.062E-06	1.158E-06	6.068E-07	3.742E-07	2.502E-07	1.858E-07	1.127E-07
NNW	5.875E-05	1.809E-05	9.150E-06	4.652E-06	1.764E-06	9.400E-07	5.870E-07	4.040E-07	2.970E-07	2.288E-07
N	6.183E-05	1.949E-05	1.009E-05	4.946E-06	1.924E-06	1.013E-06	6.273E-07	4.288E-07	3.34E-07	2.402E-07
NNE	2.155E-05	6.772E-06	3.584E-06	1.779E-06	6.911E-07	3.640E-07	2.253E-07	1.540E-07	1.125E-07	8.623E-08
NE	1.433E-05	4.259E-06	2.204E-06	1.094E-06	4.345E-07	2.324E-07	1.455E-07	1.004E-07	7.389E-08	5.700E-08
E	7.229E-06	2.343E-06	1.212E-06	5.926E-07	2.301E-07	1.212E-07	7.503E-08	5.129E-08	3.748E-08	2.83E-08
ESE	1.088E-05	3.382E-06	1.719E-06	8.378E-07	3.285E-07	1.743E-07	1.085E-07	6.43E-08	5.469E-08	4.208E-08
SE	9.899E-06	3.245E-06	1.653E-06	7.972E-07	3.011E-07	1.557E-07	9.503E-08	6.424E-08	4.551E-08	3.38E-08
SSE	1.303E-05	4.288E-06	2.250E-06	1.100E-06	4.136E-07	2.131E-07	1.297E-07	8.747E-08	6.321E-08	4.799E-08
SSE	3.423E-05	1.068E-05	5.549E-06	2.737E-06	1.072E-06	5.681E-07	3.532E-07	2.423E-07	1.776E-07	1.365E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

BEARING	DISTANCE IN MILES									
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	50.000
S	9.238E-08	4.522E-08	2.805E-08	1.496E-08	9.528E-09	6.681E-09	4.976E-09	3.868E-09	3.099E-09	2.542E-09
SSW	8.953E-08	4.372E-08	2.706E-08	1.437E-08	9.123E-09	6.379E-09	4.741E-09	3.676E-09	2.939E-09	2.407E-09
SW	6.132E-08	3.011E-08	1.872E-08	1.002E-08	6.403E-09	4.501E-09	3.360E-09	2.614E-09	2.097E-09	1.721E-09
WSW	3.531E-08	1.672E-08	1.013E-08	5.218E-09	3.241E-09	2.229E-09	1.635E-09	1.234E-09	9.940E-10	8.076E-10
W	3.951E-08	1.903E-08	1.167E-08	6.125E-09	3.858E-09	2.682E-09	1.985E-09	1.534E-09	1.223E-09	9.991E-10
WNW	2.416E-08	1.120E-08	6.63E-09	3.374E-09	2.071E-09	1.412E-09	1.029E-09	7.848E-10	6.191E-10	4.140E-10
NW	9.190E-08	4.454E-08	2.743E-08	1.448E-08	9.165E-09	6.392E-09	4.742E-09	3.671E-09	2.937E-09	1.998E-09
NNW	1.497E-07	7.413E-08	4.633E-08	2.495E-08	1.599E-08	1.126E-08	8.422E-09	6.562E-09	5.269E-09	4.329E-09
N	5.597E-08	2.733E-08	1.692E-08	9.009E-09	5.738E-09	4.024E-09	3.000E-09	2.333E-09	1.871E-09	1.537E-09
NNE	3.740E-08	1.861E-08	1.168E-08	6.318E-09	4.063E-09	2.869E-09	2.150E-09	1.678E-09	1.350E-09	1.111E-09
NE	1.865E-08	9.104E-09	5.635E-09	2.997E-09	1.904E-09	1.335E-09	9.942E-10	7.721E-10	6.185E-10	5.072E-10
E	2.749E-08	1.359E-08	8.485E-09	4.573E-09	2.939E-09	2.075E-09	1.554E-09	1.213E-09	9.761E-10	8.035E-10
ESE	2.268E-08	1.086E-08	6.634E-09	3.477E-09	2.199E-09	1.534E-09	1.139E-09	8.831E-10	7.064E-10	5.788E-10
SE	3.067E-08	1.459E-08	8.875E-09	4.624E-09	2.913E-09	2.030E-09	1.505E-09	1.146E-09	9.318E-10	7.632E-10
SSE	8.902E-08	4.383E-08	2.729E-08	1.463E-08	9.350E-09	6.573E-09	4.909E-09	3.822E-09	3.068E-09	2.520E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES									
	5-1	1-2	2-3	3-4	6-5	5-10	10-20	20-30	30-40	40-50
S	5.850E-06	1.291E-06	3.842E-07	1.883E-07	1.140E-07	4.807E-08	1.54E-08	6.759E-09	3.892E-09	2.552E-09
SSW	5.648E-06	1.250E-06	3.727E-07	1.826E-07	1.105E-07	4.649E-08	1.486E-08	6.455E-09	3.700E-09	2.417E-09
SW	3.866E-06	8.481E-07	2.536E-07	1.246E-07	7.560E-08	3.199E-08	1.035E-08	4.552E-09	2.830E-09	1.728E-09
WSW	2.536E-06	5.477E-07	1.557E-07	7.420E-08	4.399E-08	1.792E-08	5.430E-09	2.261E-09	1.264E-09	8.116E-10
W	2.672E-06	5.805E-07	1.690E-07	8.170E-08	4.897E-08	2.031E-08	6.350E-09	2.717E-09	1.544E-09	1.004E-09
WNW	1.854E-06	3.977E-07	1.102E-07	5.168E-08	3.027E-08	1.207E-08	3.530E-09	1.435E-09	7.914E-10	5.038E-10
NW	6.057E-06	1.323E-06	3.885E-07	1.889E-07	1.137E-07	4.748E-08	1.500E-08	6.472E-09	3.695E-09	2.408E-09
NNW	9.655E-06	1.998E-06	6.079E-07	3.016E-07	1.641E-07	7.857E-08	2.572E-08	1.139E-08	6.601E-09	4.346E-09
N	9.896E-06	2.193E-06	6.508E-07	3.185E-07	1.926E-07	8.103E-08	2.598E-08	1.136E-08	6.547E-09	4.298E-09
NNE	3.490E-06	7.876E-07	2.337E-07	1.143E-07	6.911E-08	2.907E-08	9.314E-09	4.072E-09	2.348E-09	1.543E-09
NE	2.167E-06	4.911E-07	1.506E-07	7.501E-08	4.592E-08	1.970E-08	6.507E-09	2.900E-09	1.688E-09	1.115E-09
E	1.697E-06	3.731E-07	1.125E-07	5.555E-08	3.383E-08	1.441E-08	4.716E-09	2.047E-09	1.220E-09	8.065E-10
ESE	1.626E-06	3.467E-07	9.889E-08	4.733E-08	2.819E-08	1.161E-08	3.610E-09	1.553E-09	8.890E-10	5.812E-10
SE	2.192E-06	4.770E-07	1.350E-07	6.434E-08	3.810E-08	1.567E-08	4.809E-09	2.056E-09	1.174E-09	7.65E-10
SSE	5.439E-06	1.218E-06	3.662E-07	1.805E-07	1.097E-07	4.652E-08	1.510E-08	6.648E-09	3.845E-09	2.530E-09



VENTS GROUND LEVEL RELEASES - APR-JUNE 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (Mg\*-2) AT FIXED POINTS BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	1.736E-07	5.870E-08	3.014E-08	1.433E-08	5.147E-09	2.553E-09	1.503E-09	9.841E-10	6.925E-10	5.132E-10	3.955E-10
SSW	1.220E-07	4.125E-08	2.118E-08	1.007E-08	3.617E-09	1.794E-09	1.056E-09	5.916E-10	4.866E-10	3.606E-10	2.779E-10
SW	9.629E-08	3.256E-08	1.672E-08	7.948E-09	2.855E-09	1.416E-09	8.337E-10	5.599E-10	3.841E-10	2.847E-10	2.194E-10
WSW	7.611E-08	2.574E-08	1.321E-08	6.283E-09	2.257E-09	1.119E-09	6.590E-10	4.315E-10	3.036E-10	2.250E-10	1.734E-10
W	8.411E-08	2.844E-08	1.460E-08	6.943E-09	2.494E-09	1.237E-09	7.282E-10	4.768E-10	3.355E-10	2.486E-10	1.916E-10
WNW	8.523E-08	2.882E-08	1.480E-08	7.035E-09	2.527E-09	1.253E-09	7.379E-10	4.832E-10	3.400E-10	2.520E-10	1.942E-10
NW	1.632E-07	5.519E-08	2.834E-08	1.347E-08	4.840E-09	2.400E-09	1.413E-09	9.253E-10	6.511E-10	4.825E-10	3.719E-10
NNW	2.903E-07	9.818E-08	5.041E-08	2.397E-08	8.608E-09	4.269E-09	2.514E-09	1.646E-09	1.158E-09	8.583E-10	6.614E-10
N	4.335E-07	1.466E-07	7.526E-08	3.578E-08	1.285E-08	6.374E-09	3.753E-09	2.457E-09	1.729E-09	1.281E-09	9.875E-10
NNE	1.452E-07	4.910E-08	2.521E-08	1.199E-08	4.305E-09	2.135E-09	1.257E-09	8.231E-10	5.752E-10	4.292E-10	3.308E-10
NE	5.613E-08	1.898E-08	9.745E-09	4.633E-09	1.664E-09	8.253E-10	4.859E-10	3.182E-10	2.239E-10	1.659E-10	1.279E-10
ENE	3.873E-08	1.310E-08	6.724E-09	3.197E-09	1.148E-09	5.695E-10	3.353E-10	2.196E-10	1.545E-10	1.145E-10	8.823E-11
E	6.672E-08	2.256E-08	1.158E-08	5.508E-09	1.978E-09	9.811E-10	5.777E-10	3.783E-10	2.662E-10	1.973E-10	1.526E-10
ESE	9.460E-08	3.199E-08	1.642E-08	7.809E-09	2.805E-09	1.391E-09	8.191E-10	5.363E-10	3.774E-10	2.797E-10	2.155E-10
SE	1.490E-07	5.038E-08	2.587E-08	1.230E-08	4.418E-09	2.191E-09	1.290E-09	8.447E-10	5.944E-10	4.405E-10	3.394E-10
SSE	2.413E-07	8.161E-08	4.190E-08	1.992E-08	7.156E-09	3.549E-09	2.089E-09	1.368E-09	9.627E-10	7.135E-10	5.498E-10

DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	3.142E-10	1.396E-10	8.455E-11	4.273E-11	2.587E-11	1.734E-11	1.243E-11	9.331E-12	7.255E-12	5.795E-12	4.730E-12
SSW	2.208E-10	9.808E-11	5.941E-11	3.003E-11	1.818E-11	1.219E-11	8.732E-12	6.557E-12	5.098E-12	4.072E-12	3.324E-12
SW	1.743E-10	7.742E-11	4.690E-11	2.370E-11	1.435E-11	9.619E-12	6.893E-12	5.176E-12	4.024E-12	3.215E-12	2.624E-12
WSW	1.378E-10	6.119E-11	3.707E-11	1.874E-11	1.134E-11	7.603E-12	5.448E-12	4.091E-12	3.181E-12	2.541E-12	2.074E-12
W	1.522E-10	6.762E-11	4.096E-11	2.070E-11	1.253E-11	8.402E-12	6.021E-12	4.521E-12	3.515E-12	2.808E-12	2.292E-12
WNW	1.543E-10	6.853E-11	4.151E-11	2.098E-11	1.270E-11	8.514E-12	6.101E-12	4.581E-12	3.562E-12	2.845E-12	2.322E-12
NW	2.954E-10	1.312E-10	7.950E-11	4.018E-11	2.432E-11	1.631E-11	1.168E-11	8.773E-12	6.822E-12	5.449E-12	4.448E-12
NNW	5.255E-10	2.334E-10	1.414E-10	7.147E-11	4.326E-11	2.900E-11	2.078E-11	1.561E-11	1.213E-11	9.692E-12	7.911E-12
N	7.845E-10	3.485E-10	2.111E-10	1.067E-10	6.458E-11	4.330E-11	3.103E-11	2.330E-11	1.812E-11	1.447E-11	1.181E-11
NNE	2.628E-10	1.167E-10	7.072E-11	3.574E-11	2.163E-11	1.450E-11	1.039E-11	7.804E-12	6.068E-12	4.847E-12	3.954E-12
NE	1.016E-10	4.513E-11	2.734E-11	1.382E-11	8.363E-12	5.607E-12	4.018E-12	3.017E-12	2.306E-12	1.874E-12	1.529E-12
ENE	7.009E-11	3.114E-11	1.886E-11	9.534E-12	5.770E-12	3.869E-12	2.772E-12	2.002E-12	1.619E-12	1.293E-12	1.055E-12
E	1.208E-10	5.365E-11	3.250E-11	1.643E-11	9.942E-12	6.666E-12	4.776E-12	3.586E-12	2.789E-12	2.227E-12	1.818E-12
ESE	1.712E-10	7.606E-11	4.607E-11	2.329E-11	1.410E-11	9.450E-12	6.772E-12	5.085E-12	3.954E-12	3.158E-12	2.578E-12
SE	2.697E-10	1.198E-10	7.256E-11	3.668E-11	2.220E-11	1.488E-11	1.067E-11	8.008E-12	6.227E-12	4.974E-12	4.060E-12
SSE	4.368E-10	1.940E-10	1.175E-10	5.941E-11	3.596E-11	2.411E-11	1.728E-11	1.297E-11	1.009E-11	8.057E-12	6.576E-12

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (Mg\*-2) BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.946E-08	6.034E-09	1.575E-09	7.075E-10	4.003E-10	1.539E-10	4.453E-11	1.765E-11	9.424E-12	5.833E-12
SSW	2.070E-08	4.240E-09	1.107E-09	4.972E-10	2.813E-10	1.082E-10	3.129E-11	1.240E-11	6.623E-12	4.099E-12
SW	1.634E-08	3.347E-09	8.738E-10	3.924E-10	2.220E-10	8.538E-11	2.470E-11	9.789E-12	5.228E-12	3.236E-12
WSW	1.292E-08	2.646E-09	6.907E-10	3.102E-10	1.755E-10	6.749E-11	1.952E-11	7.738E-12	4.132E-12	2.558E-12
W	1.427E-08	2.924E-09	7.633E-10	3.428E-10	1.939E-10	7.457E-11	2.157E-11	8.551E-12	4.566E-12	2.828E-12
WNW	1.446E-08	2.963E-09	7.734E-10	3.474E-10	1.965E-10	7.557E-11	2.186E-11	8.665E-12	4.627E-12	2.864E-12
NW	2.770E-08	5.674E-09	1.481E-09	6.652E-10	3.763E-10	1.447E-10	4.187E-11	1.659E-11	8.861E-12	5.485E-12
NNW	4.927E-08	1.009E-08	2.635E-09	1.183E-09	6.694E-10	2.574E-10	7.447E-11	2.952E-11	1.576E-11	9.756E-12
N	7.356E-08	1.507E-08	3.934E-09	1.767E-09	9.994E-10	3.843E-10	1.112E-10	4.407E-11	2.353E-11	1.457E-11
NNE	2.464E-08	5.047E-09	1.318E-09	5.918E-10	3.348E-10	1.287E-10	3.724E-11	1.476E-11	7.883E-12	4.879E-12
NE	9.525E-09	1.951E-09	5.093E-10	2.286E-10	1.294E-10	4.976E-11	1.440E-11	5.706E-12	3.047E-12	1.886E-12
ENE	6.572E-09	1.346E-09	3.514E-10	1.578E-10	8.929E-11	3.434E-11	9.934E-12	3.937E-12	2.103E-12	1.301E-12
E	1.132E-08	2.319E-09	6.055E-10	2.719E-10	1.538E-10	5.916E-11	1.712E-11	6.783E-12	3.622E-12	2.242E-12
ESE	1.605E-08	3.288E-09	8.585E-10	3.856E-10	2.181E-10	8.388E-11	2.427E-11	9.618E-12	5.136E-12	3.179E-12
SE	2.529E-08	5.179E-09	1.352E-09	6.072E-10	3.435E-10	1.321E-10	3.822E-11	1.515E-11	8.089E-12	5.007E-12
SSE	4.096E-08	8.389E-09	2.190E-09	9.836E-10	5.564E-10	2.147E-10	6.190E-11	2.454E-11	1.310E-11	8.110E-12



VENTS GROUND LEVEL RELEASES - APR-JUNE 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	X/Q (SEC/CUB.METER)			X/Q (SEC/CUB.METER)			D/Q (PER SQ.METER)
				NO DECAY			2.260 DAY DECAY			
				UNDEPLETED	UNDEPLETED	DEPLETED	UNDEPLETED	UNDEPLETED	DEPLETED	
A	SITE BOUNDARY	S	0.80	5.738E-06	1287.	5.714E-06	5.088E-06	2.563E-08		
A	SITE BOUNDARY	SSW	0.82	5.142E-06	1327.	5.117E-06	4.550E-06	1.462E-08		
A	SITE BOUNDARY	SW	0.98	2.317E-06	1569.	2.304E-06	2.028E-06	8.481E-09		
A	SITE BOUNDARY	WSW	0.93	1.739E-06	1489.	1.732E-06	1.528E-06	7.677E-09		
A	SITE BOUNDARY	W	0.91	1.899E-06	1468.	1.881E-06	1.661E-06	8.802E-09		
A	SITE BOUNDARY	WNW	0.94	1.236E-06	1509.	1.232E-06	1.085E-06	8.304E-09		
A	SITE BOUNDARY	WW	0.81	5.714E-06	1307.	5.686E-06	5.061E-06	2.314E-08		
A	SITE BOUNDARY	WNW	0.69	1.180E-05	1106.	1.175E-05	1.056E-05	5.838E-08		
A	SITE BOUNDARY	W	0.67	1.333E-05	1086.	1.329E-05	1.194E-05	8.987E-08		
A	SITE BOUNDARY	NNE	0.60	5.614E-06	965.	5.600E-06	5.044E-06	3.648E-08		
A	SITE BOUNDARY	NE	0.62	3.267E-06	1005.	3.253E-06	2.938E-06	1.325E-08		
A	SITE BOUNDARY	ENE	0.59	1.997E-06	945.	1.991E-06	1.804E-06	1.007E-08		
A	SITE BOUNDARY	E	0.53	3.419E-06	845.	3.410E-06	3.110E-06	2.083E-08		
A	SITE BOUNDARY	ESE	0.54	3.166E-06	865.	3.160E-06	2.877E-06	2.843E-08		
A	SITE BOUNDARY	SE	0.65	3.146E-06	1045.	3.140E-06	2.824E-06	3.290E-08		
A	SITE BOUNDARY	SSE	0.81	5.159E-06	1307.	5.139E-06	4.571E-06	3.422E-08		
A	NEAR. RESIDENCE	SW	1.30	2.092E-06	2092.	2.092E-06	1.933E-06	4.077E-09		
A	NEAR. RESIDENCE	WSW	1.30	2.092E-06	2092.	2.092E-06	1.933E-06	4.077E-09		
A	NEAR. RESIDENCE	W	1.00	1.609E-06	1609.	1.609E-06	1.506E-06	6.943E-09		
A	NEAR. RESIDENCE	WNW	1.60	2.576E-06	2576.	2.576E-06	2.467E-06	2.154E-09		
A	NEAR. RESIDENCE	WW	0.90	1.448E-06	1448.	1.448E-06	1.323E-06	1.770E-08		
A	NEAR. RESIDENCE	WNW	1.90	3.059E-06	3059.	3.059E-06	2.946E-06	4.827E-09		
A	NEAR. RESIDENCE	W	3.00	4.929E-06	4929.	4.929E-06	4.808E-06	8.256E-09		
A	NEAR. RESIDENCE	NNE	2.40	3.863E-06	3863.	3.863E-06	3.708E-06	1.387E-09		
A	NEAR. RESIDENCE	ENE	1.70	2.737E-06	2737.	2.737E-06	2.602E-06	8.434E-10		
A	NEAR. RESIDENCE	E	1.80	2.898E-06	2898.	2.898E-06	2.796E-06	1.157E-09		
A	NEAR. RESIDENCE	ESE	2.80	3.220E-06	3220.	3.220E-06	3.168E-06	2.390E-09		
A	NEAR. RESIDENCE	SE	2.20	3.542E-06	3542.	3.542E-06	3.490E-06	1.743E-09		
A	NEAREST COM		3.50	5.634E-06	5634.	5.634E-06	5.568E-06	3.987E-09		
A	NEAREST GARDEN	SW	1.60	2.253E-06	2253.	2.253E-06	2.190E-06	8.631E-10		
A	NEAREST GARDEN	WSW	1.30	2.092E-06	2092.	2.092E-06	1.933E-06	3.223E-09		
A	NEAREST GARDEN	W	2.30	3.762E-06	3762.	3.762E-06	3.671E-06	2.156E-09		
A	NEAREST GARDEN	WNW	1.60	2.575E-06	2575.	2.575E-06	2.467E-06	1.770E-08		
A	NEAREST GARDEN	WW	0.90	1.448E-06	1448.	1.448E-06	1.323E-06	4.831E-09		
A	NEAREST GARDEN	NNE	1.90	3.058E-06	3058.	3.058E-06	2.946E-06	1.050E-09		
A	NEAREST GARDEN	NE	2.70	4.345E-06	4345.	4.345E-06	4.265E-06	8.444E-10		
A	NEAREST GARDEN	ENE	1.70	2.736E-06	2736.	2.736E-06	2.603E-06	1.266E-09		
A	NEAREST GARDEN	E	1.80	2.897E-06	2897.	2.897E-06	2.795E-06	9.013E-10		
A	NEAREST GARDEN	ESE	2.40	3.863E-06	3863.	3.863E-06	3.707E-06	8.447E-10		
A	NEAREST GARDEN	SE	3.00	4.828E-06	4828.	4.828E-06	4.747E-06			

Atmospheric Diffusion Estimates  
Ground Level Releases  
January-June 1990

VENTS GROUND LEVEL RELEASES - JAN-JUNE 1990  
NO DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)										DISTANCE IN MILES										DISTANCE IN MILES											
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000	9.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000		
S	6.740E-05	2.309E-05	1.250E-05	6.274E-06	2.492E-06	1.339E-06	8.442E-07	5.866E-07	4.353E-07	3.384E-07	2.725E-07	2.255E-07	1.836E-07	1.532E-07	1.288E-07	1.091E-07	9.377E-08	8.153E-08	7.224E-08	6.566E-08	6.000E-08	5.500E-08	5.000E-08	4.500E-08	4.000E-08	3.500E-08	3.000E-08	2.500E-08	2.000E-08	1.500E-08		
SSW	5.585E-05	1.890E-05	1.016E-05	5.086E-06	2.023E-06	1.088E-06	6.861E-07	4.770E-07	3.540E-07	2.754E-07	2.218E-07	1.836E-07	1.532E-07	1.288E-07	1.091E-07	9.377E-08	8.153E-08	7.224E-08	6.566E-08	6.000E-08	5.500E-08	5.000E-08	4.500E-08	4.000E-08	3.500E-08	3.000E-08	2.500E-08	2.000E-08	1.500E-08	1.000E-08		
SW	3.440E-05	1.131E-05	5.978E-06	2.978E-06	1.198E-06	6.496E-07	4.123E-07	2.882E-07	2.149E-07	1.678E-07	1.356E-07	1.128E-07	9.40E-08	7.92E-08	6.73E-08	5.80E-08	5.00E-08	4.35E-08	3.80E-08	3.30E-08	2.90E-08	2.50E-08	2.10E-08	1.80E-08	1.50E-08	1.20E-08	1.00E-08	8.00E-09	6.00E-09	4.00E-09		
WSW	2.128E-05	7.404E-06	3.975E-06	1.980E-06	7.748E-07	4.120E-07	2.576E-07	1.778E-07	1.312E-07	1.015E-07	8.139E-08	6.73E-08	5.68E-08	4.88E-08	4.20E-08	3.60E-08	3.10E-08	2.60E-08	2.20E-08	1.90E-08	1.60E-08	1.40E-08	1.20E-08	1.00E-08	8.00E-09	6.00E-09	4.00E-09	2.00E-09	1.00E-09	5.00E-10		
W	1.392E-05	4.764E-06	2.510E-06	1.241E-06	6.872E-07	3.598E-07	2.128E-07	1.278E-07	8.328E-08	6.455E-08	5.184E-08	4.46E-08	3.88E-08	3.38E-08	2.98E-08	2.60E-08	2.20E-08	1.90E-08	1.60E-08	1.40E-08	1.20E-08	1.00E-08	8.00E-09	6.00E-09	4.00E-09	2.00E-09	1.00E-09	5.00E-10	2.00E-10	1.00E-10		
WNW	1.468E-05	5.052E-06	2.666E-06	1.319E-06	6.519E-06	3.410E-06	1.949E-06	1.240E-06	8.679E-07	6.480E-07	5.065E-07	4.098E-07	3.38E-07	2.88E-07	2.48E-07	2.18E-07	1.90E-07	1.60E-07	1.40E-07	1.20E-07	1.00E-07	8.00E-08	6.00E-08	4.00E-08	2.00E-08	1.00E-08	5.00E-09	2.00E-09	1.00E-09	5.00E-10		
NW	7.246E-05	2.445E-05	1.304E-05	6.519E-06	3.410E-06	1.949E-06	1.240E-06	8.679E-07	6.480E-07	5.065E-07	4.098E-07	3.38E-07	2.88E-07	2.48E-07	2.18E-07	1.90E-07	1.60E-07	1.40E-07	1.20E-07	1.00E-07	8.00E-08	6.00E-08	4.00E-08	2.00E-08	1.00E-08	5.00E-09	2.00E-09	1.00E-09	5.00E-10	2.00E-10		
NNW	9.907E-05	3.288E-05	1.762E-05	8.937E-06	4.582E-06	2.502E-06	1.312E-06	7.031E-07	3.717E-07	2.039E-07	1.127E-07	6.371E-08	3.598E-08	2.039E-08	1.127E-08	6.371E-09	3.598E-09	2.039E-09	1.127E-09	6.371E-10	3.598E-10	2.039E-10	1.127E-10	6.371E-11	3.598E-11	2.039E-11	1.127E-11	6.371E-12	3.598E-12	2.039E-12		
N	1.188E-04	3.945E-05	2.139E-05	1.180E-05	6.341E-06	3.410E-06	1.949E-06	1.240E-06	8.679E-07	6.480E-07	5.065E-07	4.098E-07	3.38E-07	2.88E-07	2.48E-07	2.18E-07	1.90E-07	1.60E-07	1.40E-07	1.20E-07	1.00E-07	8.00E-08	6.00E-08	4.00E-08	2.00E-08	1.00E-08	5.00E-09	2.00E-09	1.00E-09	5.00E-10		
NNE	4.748E-05	1.568E-05	8.574E-06	4.348E-06	2.241E-06	1.240E-06	6.787E-07	4.098E-07	2.465E-07	1.516E-07	9.09E-08	5.49E-08	3.28E-08	1.94E-08	1.12E-08	6.78E-09	4.09E-09	2.46E-09	1.51E-09	9.09E-10	5.49E-10	3.28E-10	1.94E-10	1.12E-10	6.78E-11	4.09E-11	2.46E-11	1.51E-11	9.09E-12	5.49E-12		
NE	3.514E-05	1.141E-05	6.140E-06	3.101E-06	1.600E-06	8.496E-07	4.353E-07	2.246E-07	1.161E-07	6.092E-08	3.384E-08	1.836E-08	1.091E-08	6.274E-09	3.598E-09	2.039E-09	1.127E-09	6.371E-10	3.598E-10	2.039E-10	1.127E-10	6.371E-11	3.598E-11	2.039E-11	1.127E-11	6.371E-12	3.598E-12	2.039E-12	1.127E-12	6.371E-13		
ENE	1.307E-05	4.584E-06	2.489E-06	1.241E-06	6.872E-07	3.598E-07	2.128E-07	1.278E-07	8.328E-08	6.455E-08	5.184E-08	4.46E-08	3.88E-08	3.38E-08	2.98E-08	2.60E-08	2.20E-08	1.90E-08	1.60E-08	1.40E-08	1.20E-08	1.00E-08	8.00E-09	6.00E-09	4.00E-09	2.00E-09	1.00E-09	5.00E-10	2.00E-10	1.00E-10		
E	1.033E-05	3.519E-06	1.890E-06	9.375E-07	4.764E-07	2.510E-07	1.241E-07	6.872E-08	3.598E-08	2.039E-08	1.127E-08	6.371E-09	3.598E-09	2.039E-09	1.127E-09	6.371E-10	3.598E-10	2.039E-10	1.127E-10	6.371E-11	3.598E-11	2.039E-11	1.127E-11	6.371E-12	3.598E-12	2.039E-12	1.127E-12	6.371E-13	3.598E-13	2.039E-13		
ESE	1.205E-05	4.250E-06	2.274E-06	1.127E-06	6.371E-07	3.598E-07	2.039E-07	1.127E-07	6.371E-08	3.598E-08	2.039E-08	1.127E-08	6.371E-09	3.598E-09	2.039E-09	1.127E-09	6.371E-10	3.598E-10	2.039E-10	1.127E-10	6.371E-11	3.598E-11	2.039E-11	1.127E-11	6.371E-12	3.598E-12	2.039E-12	1.127E-12	6.371E-13	3.598E-13		
SE	2.714E-05	9.402E-06	5.050E-06	2.502E-06	1.312E-06	7.031E-07	3.717E-07	2.039E-07	1.127E-07	6.371E-08	3.598E-08	2.039E-08	1.127E-08	6.371E-09	3.598E-09	2.039E-09	1.127E-09	6.371E-10	3.598E-10	2.039E-10	1.127E-10	6.371E-11	3.598E-11	2.039E-11	1.127E-11	6.371E-12	3.598E-12	2.039E-12	1.127E-12	6.371E-13		
SSE	4.671E-05	1.532E-05	8.248E-06	4.153E-06	2.160E-06	1.180E-06	6.341E-06	3.410E-06	1.949E-06	1.240E-06	8.679E-07	6.480E-07	5.065E-07	4.098E-07	3.38E-07	2.88E-07	2.48E-07	2.18E-07	1.90E-07	1.60E-07	1.40E-07	1.20E-07	1.00E-07	8.00E-08	6.00E-08	4.00E-08	2.00E-08	1.00E-08	5.00E-09	2.00E-09		
BEARING	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000																					
S	2.255E-07	1.158E-07	7.498E-08	4.300E-08	2.913E-08	2.158E-08	1.691E-08	1.377E-08	1.153E-08	9.869E-09	8.588E-09																					
SSW	1.836E-07	9.432E-08	6.114E-08	3.512E-08	2.384E-08	1.769E-08	1.388E-08	1.132E-08	9.491E-09	8.129E-09	7.081E-09																					
SW	1.126E-07	5.860E-08	3.834E-08	2.232E-08	1.530E-08	1.144E-08	9.034E-09	7.406E-09	6.239E-09	5.366E-09	4.691E-09																					
WSW	6.713E-08	3.410E-08	2.192E-08	1.244E-08	8.359E-09	6.155E-09	4.799E-09	3.893E-09	3.249E-09	2.772E-09	2.406E-09																					
W	4.283E-08	2.192E-08	1.417E-08	8.107E-09	5.484E-09	4.060E-09	3.180E-09	2.590E-09	2.170E-09	1.857E-09	1.616E-09																					
WNW	4.488E-08	2.269E-08	1.454E-08	8.225E-09	5.524E-09	4.066E-09	3.171E-09	2.572E-09	2.147E-09	1.832E-09	1.591E-09																					
NW	2.413E-07	1.247E-07	8.115E-08	4.685E-08	3.188E-08	2.371E-08	1.864E-08	1.522E-08	1.278E-08	1.096E-08	9.555E-09																					
NNW	3.405E-07	1.775E-07	1.163E-07	6.768E-08	4.633E-08	3.460E-08	2.729E-08	2.235E-08	1.881E-08	1.617E-08	1.412E-08																					
N	4.064E-07	2.110E-07	1.377E-07	7.945E-08	5.447E-08	4.057E-08	3.193E-08	2.610E-08	2.193E-08	1.882E-08	1.642E-08																					
NNE	1.608E-07	8.292E-08	5.390E-08	3.107E-08	2.112E-08	1.569E-08	1.232E-08	1.003E-08	8.431E-09	7.224E-09	6.294E-09																					
NE	1.177E-07	6.116E-08	3.996E-08	2.320E-08	1.583E-08	1.182E-08	9.317E-09	7.623E-09	6.412E-09	5.506E-09	4.807E-09																					
ENE	4.453E-08	2.281E-08	1.475E-08	8.437E-09	5.704E-09	4.219E-09	3.302E-09	2.686E-09	2.248E-09	1.922E-09	1.671E-09																					
E	3.354E-08	1.722E-08	1.116E-08	6.408E-09	4.352E-09	3.231E-09	2.537E-09	2.069E-09	1.736E-09	1.487E-09	1.296E-09																					
ESE	3.679E-08	1.844E-08	1.174E-08	6.582E-09	4.399E-09	3.225E-09	2.506E-09	2.026E-09	1.687E-09	1.436E-09	1.244E-09																					
SE	8.337E-08	4.252E-08	2.742E-08	1.565E-08	1.059E-08	7.839E-09	6.138E-09	4.996E-09	4.183E-09	3.578E-09	3.113E-09																					
SSE	1.530E-07	7.921E-08	5.163E-08	2.986E-08	2.035E-08	1.515E-08	1.192E-08	9.736E-09	8.179E-09	7.017E-09	6.120E-09																					
CHI/Q (SEC/METER CUBED)																																

DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	1.209E-05	2.820E-06	8.733E-07	4.416E-07	2.746E-07	1.220E-07	4.394E-08	2.172E-08	1.381E-08	9.888E-09
SSW	9.845E-06	2.288E-06	7.096E-07	3.592E-07	2.235E-07	9.941E-08	3.589E-08	1.781E-08	1.135E-08	8.144E-09
SW	5.828E-06	1.350E-06	4.259E-07	2.179E-07	1.366E-07	6.160E-08	2.276E-08	1.151E-08	7.427E-09	5.375E-09
WSW	3.850E-06	8.814E-07	2.668E-07	1.332E-07	8.207E-08	4.603E-08	2.573E-08	1.403E-08	3.907E-09	2.798E-09
W	2.447E-06	5.536E-07	1.686E-07	8.545E-08	5.227E-08	2.312E-08	8.289E-09	4.088E-09	2.599E-09	1.860E-09
WNW	2.598E-06	5.881E-07	1.784E-07	8.910E-08	5.489E-08	2.400E-08	8.429E-09	4.077E-09	2.581E-09	1.836E-09
NW	1.268E-05	2.945E-06	9.225E-07	4.696E-07	2.933E-07	1.313E-07	4.782E-08	2.386E-08	1.526E-08	1.098E-08
NNW	1.712E-05	4.028E-06	1.280E-06	6.569E-07	4.128E-07	1.865E-07	6.899E-08	3.480E-08	2.241E-08	1.619E-08
N	2.069E-05	4.892E-06	1.542E-06	7.877E-07	4.934E-07	2.219E-07	8.143E-08	4.082E-08	2.618E-08	1.885E-08
NNE	8.276E-06	1.965E-06	6.151E-07	3.129E-07	1.953E-07	8.729E-08	3.172E-08	1.579E-08	1.008E-08	7.237E-09
NE	5.960E-06	1.407E-06	4.513E-07	2.278E-07	1.428E-07	6.429E-08	2.364E-08	1.190E-08	7.646E-09	5.516E-09
E	2.402E-06	5.599E-07	1.730E-07	8.736E-08	5.427E-08	2.406E-08	8.625E-09	4.248E-09	2.695E-09	1.925E-09
E	1.825E-06	4.209E-07	1.300E-07	6.571E-08	4.085E-08	1.813E-08	6.550E-09	3.252E-09	2.076E-09	1.490E-09
ESE	2.203E-06	4.988E-07	1.489E-07	7.371E-08	4.512E-08	1.954E-08	6.758E-09	3.250E-09	2.034E-09	1.439E-09
SE	4.887E-06	1.111E-06	3.329E-07	1.656E-07	1.019E-07	4.489E-08	1.602E-08	7.892E-09	5.03E-09	3.585E-09
SSE	7.999E-06	1.874E-06	5.266E-07	2.978E-07	1.859E-07	8.334E-08	3.047E-08	1.524E-08	2.765E-09	7.029E-09



VENTS GROUND LEVEL RELEASES - JAN-JUNE 1990  
2.260 DAY DECAY, UNDEPLETED  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)		DISTANCE IN MILES											
SECTOR		0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
S	6.718E-05	2.294E-05	1.238E-05	6.191E-06	2.443E-06	1.305E-06	8.168E-07	5.639E-07	4.157E-07	3.212E-07	2.569E-07		
SSW	5.563E-05	1.876E-05	1.004E-05	5.012E-06	1.979E-06	1.057E-06	6.619E-07	4.570E-07	3.369E-07	2.602E-07	2.082E-07		
SW	3.430E-05	1.124E-05	5.916E-06	2.940E-06	1.173E-06	6.332E-07	3.994E-07	2.774E-07	2.056E-07	1.596E-07	1.282E-07		
WSW	2.121E-05	7.353E-06	3.935E-06	1.933E-06	7.591E-07	4.009E-07	2.489E-07	1.707E-07	1.251E-07	9.614E-08	7.657E-08		
W	1.388E-05	4.739E-06	2.490E-06	1.228E-06	4.797E-07	2.546E-07	1.587E-07	1.093E-07	8.039E-08	6.201E-08	4.956E-08		
WNW	1.464E-05	5.026E-06	2.645E-06	1.306E-06	5.096E-07	2.698E-07	1.679E-07	1.154E-07	8.470E-08	6.522E-08	5.204E-08		
NW	7.222E-05	2.428E-05	1.290E-05	6.427E-06	2.556E-06	1.371E-06	8.621E-07	5.970E-07	4.412E-07	3.416E-07	2.738E-07		
NNW	9.956E-05	3.268E-05	1.745E-05	8.747E-06	3.516E-06	1.901E-06	1.202E-06	8.366E-07	6.210E-07	4.826E-07	3.891E-07		
N	1.185E-04	3.922E-05	2.120E-05	1.067E-05	4.265E-06	2.298E-06	1.449E-06	1.007E-06	7.460E-07	5.790E-07	4.651E-07		
NNE	4.737E-05	1.561E-05	8.512E-06	4.306E-06	1.716E-06	9.226E-07	5.809E-07	4.030E-07	2.983E-07	2.313E-07	1.857E-07		
NE	3.503E-05	1.133E-05	6.080E-06	3.060E-06	1.225E-06	6.812E-07	4.172E-07	2.898E-07	2.148E-07	1.666E-07	1.339E-07		
ENE	1.303E-05	4.557E-06	2.467E-06	1.232E-06	4.860E-07	2.594E-07	1.624E-07	1.122E-07	8.271E-08	6.392E-08	5.116E-08		
E	1.031E-05	3.504E-06	1.868E-06	9.293E-07	3.670E-07	1.962E-07	1.231E-07	8.512E-08	6.288E-08	4.868E-08	3.903E-08		
ESE	1.203E-05	4.232E-06	2.259E-06	1.117E-06	4.315E-07	2.262E-07	1.405E-07	9.617E-08	7.039E-08	5.406E-08	4.304E-08		
SE	2.706E-05	9.348E-06	5.007E-06	2.479E-06	9.566E-07	5.036E-07	3.122E-07	2.139E-07	1.568E-07	1.205E-07	9.605E-08		
SSE	4.658E-05	1.523E-05	8.177E-06	4.105E-06	1.631E-06	8.752E-07	5.503E-07	3.813E-07	2.819E-07	2.184E-07	1.752E-07		
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)		DISTANCE IN MILES											
BEARING		5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	2.113E-07	1.051E-07	6.605E-08	3.572E-08	2.288E-08	1.608E-08	1.198E-08	9.294E-09	7.435E-09	6.089E-09	5.081E-09		
SSW	1.711E-07	8.503E-08	5.335E-08	2.878E-08	1.839E-08	1.289E-08	9.572E-09	7.406E-09	5.906E-09	4.821E-09	4.010E-09		
SW	1.050E-07	5.342E-08	3.394E-08	1.868E-08	1.213E-08	8.618E-09	6.479E-09	5.066E-09	4.079E-09	3.358E-09	2.815E-09		
WSW	6.274E-08	3.084E-08	1.919E-08	1.023E-08	6.472E-09	4.499E-09	3.321E-09	2.556E-09	2.029E-09	1.650E-09	1.367E-09		
W	4.075E-08	2.035E-08	1.284E-08	7.014E-09	4.539E-09	3.220E-09	2.421E-09	1.896E-09	1.530E-09	1.263E-09	1.061E-09		
WNW	4.268E-08	2.107E-08	1.319E-08	7.136E-09	4.595E-09	3.250E-09	2.440E-09	1.907E-09	1.539E-09	1.271E-09	1.069E-09		
NW	2.255E-07	1.128E-07	7.118E-08	3.670E-08	2.488E-08	1.752E-08	1.308E-08	1.016E-08	8.139E-09	6.669E-09	5.567E-09		
NNW	3.206E-07	1.625E-07	1.035E-07	5.716E-08	3.720E-08	2.648E-08	1.995E-08	1.564E-08	1.262E-08	1.042E-08	8.758E-09		
N	3.838E-07	1.939E-07	1.233E-07	6.791E-08	4.414E-08	3.140E-08	2.366E-08	1.853E-08	1.498E-08	1.238E-08	1.042E-08		
NNE	1.532E-07	7.730E-08	4.916E-08	2.716E-08	1.774E-08	1.268E-08	9.503E-09	7.569E-09	6.143E-09	5.101E-09	4.313E-09		
NE	1.104E-07	5.569E-08	3.533E-08	1.938E-08	1.255E-08	8.889E-09	6.667E-09	5.204E-09	4.183E-09	3.449E-09	2.880E-09		
ENE	4.209E-08	2.097E-08	1.321E-08	7.184E-09	4.633E-09	3.277E-09	2.458E-09	1.921E-09	1.547E-09	1.276E-09	1.072E-09		
E	3.215E-08	1.619E-08	1.029E-08	5.695E-09	3.737E-09	2.686E-09	2.044E-09	1.620E-09	1.321E-09	1.103E-09	9.367E-10		
ESE	3.524E-08	1.730E-08	1.079E-08	5.823E-09	3.755E-09	2.662E-09	2.004E-09	1.573E-09	1.274E-09	1.056E-09	8.917E-10		
SE	7.881E-08	3.908E-08	2.452E-08	1.327E-08	8.527E-09	6.010E-09	4.492E-09	3.498E-09	2.808E-09	2.307E-09	1.932E-09		
SSE	1.444E-07	7.275E-08	4.615E-08	2.533E-08	1.643E-08	1.166E-08	8.767E-09	6.861E-09	5.530E-09	4.561E-09	3.831E-09		
CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT		SEGMENT BOUNDARIES IN MILES											
DIRECTION FROM SITE		5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50		
S	1.197E-05	2.770E-06	8.457E-07	4.220E-07	2.591E-07	1.113E-07	3.675E-08	1.625E-08	9.352E-09	6.115E-09			
SSW	9.745E-06	2.243E-06	6.853E-07	3.420E-07	2.099E-07	9.008E-08	2.962E-08	1.303E-08	7.454E-09	4.842E-09			
SW	5.776E-06	1.327E-06	4.130E-07	2.086E-07	1.292E-07	5.640E-08	1.916E-08	8.700E-09	5.094E-09	3.371E-09			
WSW	3.814E-06	8.652E-07	2.581E-07	1.271E-07	7.725E-08	3.275E-08	1.055E-08	4.554E-09	2.574E-09	1.657E-09			
W	2.429E-06	5.459E-07	1.645E-07	8.165E-08	4.999E-08	2.155E-08	7.209E-09	3.252E-09	1.907E-09	1.267E-09			
WNW	2.579E-06	5.800E-07	1.741E-07	8.604E-08	5.248E-08	2.237E-08	7.353E-09	3.285E-09	1.920E-09	1.276E-09			
NW	1.255E-05	2.890E-06	8.919E-07	4.478E-07	2.760E-07	1.194E-07	3.978E-08	1.771E-08	1.023E-08	6.896E-09			
NNW	1.697E-05	3.960E-06	1.242E-06	6.299E-07	3.911E-07	1.714E-07	5.859E-08	2.673E-08	1.572E-08	1.046E-08			
N	2.052E-05	4.814E-06	1.499E-06	7.569E-07	4.687E-07	2.047E-07	6.965E-08	3.170E-08	1.865E-08	1.243E-08			
NNE	8.220E-06	1.939E-06	6.008E-07	3.027E-07	1.872E-07	8.166E-08	2.786E-08	1.280E-08	7.607E-09	5.118E-09			
NE	5.905E-06	1.383E-06	4.313E-07	2.179E-07	1.349E-07	5.881E-08	1.989E-08	8.976E-09	5.233E-09	3.453E-09			
ENE	2.383E-06	5.512E-07	1.682E-07	8.397E-08	5.159E-08	2.1E-08	7.389E-09	3.511E-09	1.932E-09	1.281E-09			
E	1.815E-06	4.161E-07	1.274E-07	6.382E-08	3.934E-08	1.711E-08	5.845E-09	2.710E-09	1.627E-09	1.106E-09			
ESE	2.190E-06	4.930E-07	1.458E-07	7.153E-08	4.341E-08	1.839E-08	6.009E-09	2.691E-09	1.582E-09	1.060E-09			
SE	4.848E-06	1.094E-06	3.239E-07	1.593E-07	9.692E-08	4.144E-08	1.366E-08	6.074E-09	3.519E-09	2.317E-09			
SSE	9.944E-06	1.845E-06	5.693E-07	2.861E-07	1.766E-07	7.686E-08	2.600E-08	1.177E-08	6.898E-09	4.578E-09			

VENTS GROUND LEVEL RELEASES - JAN-JUNE 1990  
8,000 DAY DECAY, DEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)										DISTANCE IN MILES									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
S	6.373E-05	2.135E-05	1.1E-05	5.471E-06	2.105E-06	1.101E-06	6.775E-07	4.608E-07	3.352E-07	2.559E-07	2.026E-07	1.650E-07	1.341E-07	1.091E-07	8.893E-08	7.342E-08	6.144E-08	5.208E-08	4.511E-08	3.941E-08
SSW	5.280E-05	1.722E-05	9.6E-06	4.433E-06	1.707E-06	8.935E-07	5.501E-07	3.743E-07	2.724E-07	2.090E-07	1.647E-07	1.341E-07	1.091E-07	8.893E-08	7.342E-08	6.144E-08	5.208E-08	4.511E-08	3.941E-08	3.257E-08
SW	3.253E-05	1.031E-05	5.308E-06	2.598E-06	1.012E-06	5.340E-07	3.101E-07	2.264E-07	1.656E-07	1.270E-07	1.009E-07	8.25E-08	6.84E-08	5.71E-08	4.81E-08	4.04E-08	3.36E-08	2.84E-08	2.43E-08	2.09E-08
WSW	2.012E-05	6.748E-06	3.532E-06	1.727E-06	6.542E-07	3.385E-07	2.066E-07	1.396E-07	1.010E-07	7.672E-08	6.047E-08	5.00E-08	4.25E-08	3.61E-08	3.07E-08	2.59E-08	2.16E-08	1.78E-08	1.45E-08	1.16E-08
W	1.316E-05	4.344E-06	2.232E-06	1.083E-06	4.120E-07	2.139E-07	1.309E-07	8.871E-08	6.433E-08	4.899E-08	3.870E-08	3.16E-08	2.64E-08	2.22E-08	1.88E-08	1.58E-08	1.32E-08	1.09E-08	9.00E-09	7.50E-09
WRW	1.388E-05	4.607E-06	2.370E-06	1.152E-06	4.375E-07	2.267E-07	1.385E-07	9.365E-08	6.779E-08	5.153E-08	4.043E-08	3.26E-08	2.71E-08	2.28E-08	1.92E-08	1.61E-08	1.34E-08	1.11E-08	9.20E-09	7.60E-09
NW	6.852E-05	2.228E-05	1.159E-05	5.683E-06	2.204E-06	1.159E-06	7.159E-07	4.885E-07	3.563E-07	2.727E-07	2.163E-07	1.75E-07	1.44E-07	1.19E-07	9.92E-08	8.25E-08	6.84E-08	5.71E-08	4.81E-08	4.04E-08
NNW	9.443E-05	2.998E-05	1.566E-05	7.226E-06	3.026E-06	1.603E-06	9.954E-07	6.592E-07	4.992E-07	3.852E-07	3.031E-07	2.48E-07	2.04E-07	1.70E-07	1.44E-07	1.19E-07	9.92E-08	8.25E-08	6.84E-08	5.71E-08
N	1.124E-04	3.597E-05	1.901E-05	9.188E-06	3.668E-06	1.935E-06	1.159E-06	6.592E-07	4.992E-07	3.852E-07	3.031E-07	2.48E-07	2.04E-07	1.70E-07	1.44E-07	1.19E-07	9.92E-08	8.25E-08	6.84E-08	5.71E-08
NNE	4.491E-05	1.430E-05	7.625E-06	3.795E-06	1.473E-06	7.746E-07	4.787E-07	3.267E-07	2.384E-07	1.825E-07	1.448E-07	1.19E-07	9.92E-08	8.25E-08	6.84E-08	5.71E-08	4.81E-08	4.04E-08	3.36E-08	2.84E-08
NE	3.323E-05	1.040E-05	5.457E-06	2.704E-06	1.036E-06	5.578E-07	3.459E-07	2.367E-07	1.730E-07	1.327E-07	1.054E-07	8.50E-08	7.00E-08	5.81E-08	4.88E-08	4.04E-08	3.36E-08	2.84E-08	2.43E-08	2.09E-08
ENE	2.136E-05	4.179E-06	2.212E-06	1.088E-06	4.179E-07	2.184E-07	1.343E-07	9.131E-08	6.641E-08	5.069E-08	4.012E-08	3.32E-08	2.79E-08	2.36E-08	1.99E-08	1.67E-08	1.39E-08	1.15E-08	9.50E-09	7.80E-09
E	9.777E-06	3.210E-06	1.673E-06	8.186E-07	3.146E-07	1.645E-07	1.012E-07	6.885E-08	5.011E-08	3.828E-08	3.032E-08	2.48E-08	2.04E-08	1.70E-08	1.44E-08	1.19E-08	9.92E-08	8.25E-08	6.84E-08	5.71E-08
ESE	1.140E-05	3.877E-06	2.023E-06	9.842E-07	3.699E-07	1.903E-07	1.156E-07	7.782E-08	5.613E-08	4.253E-08	3.345E-08	2.71E-08	2.28E-08	1.92E-08	1.61E-08	1.34E-08	1.11E-08	9.20E-09	7.60E-09	6.30E-09
SE	2.567E-05	8.572E-06	4.490E-06	2.189E-06	8.224E-07	4.238E-07	2.581E-07	1.741E-07	1.258E-07	9.555E-08	7.529E-08	6.14E-08	5.00E-08	4.25E-08	3.61E-08	3.07E-08	2.59E-08	2.16E-08	1.78E-08	1.45E-08
SSE	4.417E-05	1.396E-05	7.332E-06	3.623E-06	1.403E-06	7.369E-07	4.551E-07	3.104E-07	2.264E-07	1.733E-07	1.374E-07	1.10E-07	9.00E-08	7.50E-08	6.30E-08	5.30E-08	4.50E-08	3.80E-08	3.20E-08	2.70E-08

DIRECTION FROM SITE	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)										DISTANCE IN MILES									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
S	1.081E-05	2.407E-06	7.037E-07	3.479E-07	2.045E-07	1.101E-07	6.775E-08	4.608E-08	3.352E-08	2.559E-08	2.026E-08	1.650E-08	1.341E-08	1.091E-08	8.893E-09	7.342E-09	6.144E-09	5.208E-09	4.511E-09	3.941E-09
SSW	8.805E-06	1.951E-06	5.714E-07	2.770E-07	1.662E-07	8.893E-08	5.501E-08	3.743E-08	2.724E-08	2.090E-08	1.647E-08	1.341E-08	1.091E-08	8.893E-09	7.342E-09	6.144E-09	5.208E-09	4.511E-09	3.941E-09	3.257E-09
SW	5.215E-06	1.522E-06	3.433E-07	1.683E-07	1.018E-07	5.340E-08	3.101E-08	2.264E-08	1.656E-08	1.270E-08	1.009E-08	8.25E-09	6.84E-09	5.71E-09	4.81E-09	4.04E-09	3.36E-09	2.84E-09	2.43E-09	2.09E-09
WSW	3.444E-06	7.522E-07	4.150E-07	1.028E-07	6.107E-08	3.907E-08	2.499E-08	1.615E-08	1.101E-08	7.60E-09	5.50E-09	4.25E-09	3.61E-09	3.07E-09	2.59E-09	2.16E-09	1.78E-09	1.45E-09	1.16E-09	9.00E-09
W	2.190E-06	4.730E-07	1.3E-07	6.545E-08	3.907E-08	2.499E-08	1.615E-08	1.101E-08	7.60E-09	5.50E-09	4.25E-09	3.61E-09	3.07E-09	2.59E-09	2.16E-09	1.78E-09	1.45E-09	1.16E-09	9.00E-09	7.50E-09
WRW	2.324E-06	5.025E-07	1.441E-07	6.898E-08	4.102E-08	2.182E-08	1.159E-08	6.592E-09	4.992E-09	3.852E-09	3.031E-09	2.48E-09	2.04E-09	1.70E-09	1.44E-09	1.19E-09	9.92E-09	8.25E-09	6.84E-09	5.71E-09
NW	1.134E-05	2.512E-06	7.430E-07	3.622E-07	2.182E-07	1.159E-08	6.592E-09	4.992E-09	3.852E-09	3.031E-09	2.48E-09	2.04E-09	1.70E-09	1.44E-09	1.19E-09	9.92E-09	8.25E-09	6.84E-09	5.71E-09	4.81E-09
NNW	1.531E-05	3.438E-06	1.032E-06	5.075E-07	3.077E-07	1.297E-07	6.101E-08	3.267E-08	2.384E-08	1.825E-08	1.448E-08	1.19E-08	9.92E-09	8.25E-09	6.84E-09	5.71E-09	4.81E-09	4.04E-09	3.36E-09	2.84E-09
N	1.652E-05	4.176E-06	1.246E-06	6.089E-07	3.681E-07	1.544E-07	7.159E-08	4.885E-08	3.563E-08	2.727E-08	2.163E-08	1.75E-08	1.44E-08	1.19E-08	9.92E-09	8.25E-09	6.84E-09	5.71E-09	4.81E-09	4.04E-09
NE	7.407E-06	1.679E-06	4.968E-07	2.423E-07	1.461E-07	8.101E-08	4.925E-08	3.021E-08	2.221E-08	1.733E-08	1.374E-08	1.10E-08	9.00E-09	7.50E-09	6.30E-09	5.30E-09	4.50E-09	3.80E-09	3.20E-09	2.70E-09
NNE	5.331E-06	1.201E-06	3.587E-07	1.758E-07	1.064E-07	4.464E-08	2.725E-08	1.675E-08	1.275E-08	1.015E-08	8.25E-09	6.84E-09	5.71E-09	4.81E-09	4.04E-09	3.36E-09	2.84E-09	2.43E-09	2.09E-09	1.78E-09
NE	2.150E-06	4.781E-07	1.395E-07	6.754E-08	4.049E-08	2.499E-08	1.615E-08	1.101E-08	7.60E-09	5.50E-09	4.25E-09	3.61E-09	3.07E-09	2.59E-09	2.16E-09	1.78E-09	1.45E-09	1.16E-09	9.00E-09	7.50E-09
E	1.635E-06	3.599E-07	1.051E-07	5.096E-08	3.059E-08	1.272E-08	6.592E-09	4.992E-09	3.852E-09	3.031E-09	2.48E-09	2.04E-09	1.70E-09	1.44E-09	1.19E-09	9.92E-09	8.25E-09	6.84E-09	5.71E-09	4.81E-09
ESE	1.975E-06	4.266E-07	1.204E-07	5.715E-08	3.378E-08	1.369E-08	7.782E-09	5.613E-09	4.253E-09	3.345E-09	2.71E-09	2.28E-09	1.92E-09	1.61E-09	1.34E-09	1.11E-09	9.20E-09	7.60E-09	6.30E-09	5.30E-09
SE	4.374E-06	9.487E-07	2.687E-07	1.281E-07	7.605E-08	3.126E-08	1.624E-08	8.224E-09	4.238E-09	2.581E-09	1.741E-09	1.258E-09	9.555E-09	7.529E-09	6.14E-09	5.00E-09	4.25E-09	3.61E-09	3.07E-09	2.59E-09
SSE	7.158E-06	1.600E-06	4.724E-07	2.302E-07	1.367E-07	5.800E-08	3.104E-08	2.264E-08	1.733E-08	1.374E-08	1.10E-08	9.00E-09	7.50E-09	6.30E-09	5.30E-09	4.50E-09	3.80E-09	3.20E-09	2.70E-09	2.20E-09

SEGMENT BOUNDARIES IN MILES

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT



VENIS GROUND LEVEL RELEASES - JAN-JUNE 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

***** RELATIVE DEPOSITION PER UNIT AREA (M**2) AT FIXED POINTS BY DOWNWIND SECTORS *****											
DIRECTION		DISTANCES IN MILES									
FROM SITE		0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00
S		2.120E-07	7.170E-08	3.681E-08	1.750E-08	6.287E-09	3.118E-09	1.836E-09	1.202E-09	8.458E-10	6.268E-10
SSW		1.239E-07	4.190E-08	2.151E-08	1.023E-08	3.674E-09	1.822E-09	1.073E-09	7.025E-10	4.943E-10	3.663E-10
SW		8.182E-08	2.767E-08	1.421E-08	6.754E-09	2.426E-09	1.203E-09	7.084E-10	4.639E-10	3.264E-10	2.419E-10
WSW		6.051E-08	2.046E-08	1.051E-08	4.955E-09	1.794E-09	8.898E-10	5.239E-10	3.431E-10	2.414E-10	1.789E-10
W		5.058E-08	1.710E-08	8.782E-09	4.175E-09	1.500E-09	7.437E-10	4.379E-10	2.867E-10	2.018E-10	1.495E-10
WNW		6.362E-08	2.151E-08	1.105E-08	5.251E-09	1.886E-09	9.355E-10	5.508E-10	3.607E-10	2.538E-10	1.881E-10
NW		1.612E-07	5.451E-08	2.799E-08	1.331E-08	4.779E-09	2.370E-09	1.396E-09	9.138E-10	6.430E-10	4.765E-10
NNW		2.680E-07	9.061E-08	4.652E-08	2.212E-08	7.945E-09	3.940E-09	2.320E-09	1.519E-09	1.069E-09	7.922E-10
N		4.259E-07	1.440E-07	7.395E-08	3.516E-08	1.263E-08	6.263E-09	3.688E-09	2.415E-09	1.699E-09	1.259E-09
NNE		1.987E-07	6.718E-08	3.449E-08	1.640E-08	5.890E-09	2.921E-09	1.720E-09	1.126E-09	7.925E-10	5.873E-10
NE		8.312E-08	2.811E-08	1.443E-08	6.861E-09	2.464E-09	1.222E-09	7.197E-10	4.712E-10	3.316E-10	2.457E-10
ENE		5.145E-08	1.740E-08	8.933E-09	4.247E-09	1.526E-09	7.565E-10	4.455E-10	2.917E-10	2.052E-10	1.521E-10
E		6.116E-08	2.068E-08	1.062E-08	5.048E-09	1.813E-09	8.993E-10	5.295E-10	3.467E-10	2.440E-10	1.808E-10
ESE		8.651E-08	2.925E-08	1.502E-08	7.141E-09	2.565E-09	1.272E-09	7.490E-10	4.904E-10	3.451E-10	2.557E-10
SE		1.646E-07	5.565E-08	2.857E-08	1.358E-08	4.879E-09	2.420E-09	1.425E-09	9.329E-10	6.564E-10	4.865E-10
SSE		2.230E-07	7.542E-08	3.872E-08	1.841E-08	6.613E-09	3.279E-09	1.931E-09	1.264E-09	8.897E-10	6.594E-10
DIRECTION		DISTANCES IN MILES									
FROM SITE		5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	50.00
S		3.837E-10	1.705E-10	1.033E-10	5.220E-11	3.159E-11	2.118E-11	1.518E-11	1.140E-11	8.861E-12	7.078E-12
SSW		2.243E-10	9.963E-11	6.035E-11	3.050E-11	1.846E-11	1.238E-11	8.870E-12	6.661E-12	5.179E-12	4.137E-12
SW		1.481E-10	6.578E-11	3.985E-11	2.014E-11	1.219E-11	8.174E-12	5.857E-12	4.390E-12	3.419E-12	2.731E-12
WSW		1.095E-10	4.865E-11	2.947E-11	1.490E-11	9.016E-12	6.045E-12	4.332E-12	3.253E-12	2.529E-12	2.020E-12
W		9.154E-11	4.067E-11	2.463E-11	1.245E-11	7.536E-12	5.053E-12	3.620E-12	2.719E-12	2.114E-12	1.688E-12
WNW		1.151E-10	5.115E-11	3.099E-11	1.566E-11	9.479E-12	6.356E-12	4.554E-12	3.420E-12	2.659E-12	2.124E-12
NW		2.917E-10	1.296E-10	7.850E-11	3.968E-11	2.402E-11	1.610E-11	1.154E-11	8.664E-12	6.736E-12	5.381E-12
NNW		4.850E-10	2.154E-10	1.305E-10	6.596E-11	3.992E-11	2.677E-11	1.918E-11	1.440E-11	1.120E-11	8.945E-12
N		7.709E-10	3.425E-10	2.074E-10	1.049E-10	6.346E-11	4.255E-11	3.049E-11	2.289E-11	1.780E-11	1.422E-11
NNE		5.596E-10	1.597E-10	9.676E-11	4.891E-11	2.960E-11	1.985E-11	1.422E-11	1.068E-11	8.303E-12	6.632E-12
NE		1.504E-10	6.683E-11	4.048E-11	2.046E-11	1.238E-11	8.304E-12	5.950E-12	4.468E-12	3.474E-12	2.775E-12
ENE		9.312E-11	4.137E-11	2.506E-11	1.267E-11	7.666E-12	5.140E-12	3.683E-12	2.766E-12	2.150E-12	1.718E-12
E		1.107E-10	4.917E-11	2.979E-11	1.506E-11	9.112E-12	6.110E-12	4.378E-12	3.287E-12	2.556E-12	2.042E-12
ESE		1.566E-10	6.955E-11	4.213E-11	2.130E-11	1.289E-11	8.647E-12	6.192E-12	4.650E-12	3.615E-12	2.888E-12
SE		2.978E-10	1.323E-10	8.015E-11	4.051E-11	2.452E-11	1.644E-11	1.178E-11	8.845E-12	6.877E-12	5.494E-12
SSE		4.037E-10	1.793E-10	1.086E-10	5.490E-11	3.323E-11	2.228E-11	1.597E-11	1.199E-11	9.321E-12	7.446E-12
***** RELATIVE DEPOSITION PER UNIT AREA (M**2) BY DOWNWIND SECTORS *****											
DIRECTION		SEGMENT BOUNDARIES IN MILES									
FROM SITE		5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S		3.598E-08	7.370E-09	1.924E-09	8.642E-10	4.889E-10	1.880E-10	5.439E-11	2.156E-11	1.151E-11	7.125E-12
SSW		2.103E-08	4.307E-09	1.125E-09	5.050E-10	2.857E-10	1.099E-10	3.179E-11	1.260E-11	6.727E-12	4.164E-12
SW		1.389E-08	2.844E-09	7.425E-10	3.335E-10	1.886E-10	7.255E-11	2.099E-11	8.318E-12	4.442E-12	2.749E-12
WSW		1.027E-08	2.104E-09	5.492E-10	2.466E-10	1.395E-10	5.366E-11	1.552E-11	6.152E-12	3.285E-12	2.033E-12
W		8.583E-09	1.758E-09	4.590E-10	2.061E-10	1.166E-10	4.485E-11	1.297E-11	5.142E-12	2.746E-12	1.700E-12
WNW		1.080E-08	2.212E-09	5.773E-10	2.593E-10	1.467E-10	5.641E-11	1.632E-11	6.468E-12	3.454E-12	2.138E-12
NW		2.735E-08	5.603E-09	1.463E-09	6.570E-10	3.716E-10	1.429E-10	4.135E-11	1.639E-11	8.751E-12	5.416E-12
NNW		4.547E-08	9.314E-09	2.432E-09	1.092E-09	6.178E-10	2.374E-10	6.873E-11	2.724E-11	1.455E-11	9.004E-12
N		7.228E-08	1.481E-08	3.865E-09	1.736E-09	9.821E-10	3.777E-10	1.093E-10	4.330E-11	2.312E-11	1.431E-11
NNE		3.371E-08	6.906E-09	1.803E-09	8.097E-10	4.581E-10	1.761E-10	5.096E-11	2.020E-11	1.079E-11	6.676E-12
NE		1.411E-08	2.889E-09	7.543E-10	3.388E-10	1.916E-10	7.370E-11	2.132E-11	8.450E-12	4.513E-12	2.793E-12
ENE		8.732E-09	1.789E-09	4.669E-10	2.097E-10	1.186E-10	4.562E-11	1.320E-11	5.231E-12	2.793E-12	1.729E-12
E		1.038E-08	2.126E-09	5.550E-10	2.493E-10	1.410E-10	5.423E-11	1.569E-11	6.218E-12	3.320E-12	2.055E-12
ESE		1.468E-08	3.007E-09	7.850E-10	3.526E-10	1.995E-10	7.670E-11	2.219E-11	8.795E-12	4.696E-12	2.907E-12
SE		2.793E-08	5.720E-09	1.493E-09	6.707E-10	3.794E-10	1.459E-10	4.221E-11	1.673E-11	8.934E-12	5.530E-12
SSE		3.785E-08	7.753E-09	2.024E-09	9.090E-10	5.142E-10	1.978E-10	5.721E-11	2.267E-11	1.211E-11	7.495E-12



VENTS GROUND LEVEL RELEASES - JAN-JUN 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	X/Q (SEC/CUB.METER)	X/Q (SEC/CUB.METER)	X/Q (SEC/CUB.METER)	D/Q (PER SQ.METER)
				NO DECAY			
				UNDEPLETED	UNDEPLETED	8.000 DAY DECAY DEPLETED	
				2.260 DAY DECAY			
				UNDEPLETED	UNDEPLETED	8.000 DAY DECAY DEPLETED	
A	SITE BOUNDARY	S	1287.	1.075E-05	1.044E-05	9.516E-06	3.131E-08
A	SITE BOUNDARY	SSH	0.82	8.096E-06	7.999E-06	7.150E-06	1.688E-08
A	SITE BOUNDARY	SW	1327.	3.157E-06	3.118E-06	2.759E-06	7.207E-09
A	SITE BOUNDARY	WSH	0.98	2.387E-06	2.357E-06	2.092E-06	6.104E-09
A	SITE BOUNDARY	W	1489.	1.550E-06	1.536E-06	1.361E-06	5.293E-09
A	SITE BOUNDARY	WNW	0.91	1.540E-06	1.526E-06	1.350E-06	6.199E-09
A	SITE BOUNDARY	WN	1509.	1.078E-05	1.066E-05	9.516E-06	2.283E-08
A	SITE BOUNDARY	WNW	0.81	2.011E-05	1.994E-05	1.741E-05	5.388E-08
A	SITE BOUNDARY	N	1106.	2.505E-05	2.485E-05	2.224E-05	8.831E-08
A	SITE BOUNDARY	NNE	0.67	1.191E-05	1.184E-05	1.073E-05	4.991E-08
A	SITE BOUNDARY	NE	965.	8.081E-06	8.015E-06	7.256E-06	1.963E-08
A	SITE BOUNDARY	ENE	1005.	3.602E-06	3.578E-06	3.250E-06	1.338E-08
A	SITE BOUNDARY	E	945.	3.259E-06	3.244E-06	2.963E-06	1.910E-08
A	SITE BOUNDARY	ESE	845.	3.801E-06	3.784E-06	3.451E-06	2.600E-08
A	SITE BOUNDARY	SE	865.	6.300E-06	6.253E-06	5.647E-06	3.634E-08
A	SITE BOUNDARY	SSE	1046.	6.835E-06	6.771E-06	6.046E-06	3.162E-08
A	NEAR. RESIDENCE	SW	1307.	1.641E-06	1.614E-06	1.403E-06	3.464E-09
A	NEAR. RESIDENCE	WSH	2092.	1.072E-06	1.053E-06	9.161E-07	2.562E-09
A	NEAR. RESIDENCE	W	2092.	1.241E-06	1.228E-06	1.083E-06	4.175E-09
A	NEAR. RESIDENCE	WNW	1.00	4.478E-07	4.406E-07	3.765E-07	1.608E-09
A	NEAR. RESIDENCE	WN	1.60	8.387E-06	8.201E-06	7.364E-06	1.748E-08
A	NEAR. RESIDENCE	WNW	1448.	2.166E-06	2.116E-06	1.790E-06	4.453E-09
A	NEAR. RESIDENCE	N	3059.	1.042E-06	1.006E-06	8.195E-07	2.414E-09
A	NEAR. RESIDENCE	NNE	4829.	6.461E-07	6.313E-07	5.221E-07	1.893E-09
A	NEAR. RESIDENCE	ENE	3863.	3.757E-07	3.684E-07	3.140E-07	1.121E-09
A	NEAR. RESIDENCE	E	2737.	2.496E-07	2.458E-07	2.078E-07	1.159E-09
A	NEAR. RESIDENCE	ESE	2898.	2.308E-07	2.268E-07	1.901E-07	1.271E-09
A	NEAR. RESIDENCE	SE	3220.	6.477E-07	6.206E-07	4.992E-07	1.068E-09
A	NEAREST COW	WNW	2.20	4.197E-07	4.094E-07	3.420E-07	1.925E-09
A	NEAREST GARDEN	SW	3542.	1.393E-06	1.368E-06	1.183E-06	2.878E-09
A	NEAREST GARDEN	WSH	5634.	1.072E-06	1.053E-06	9.161E-07	2.562E-09
A	NEAREST GARDEN	W	2253.	1.935E-07	1.890E-07	1.570E-07	5.329E-10
A	NEAREST GARDEN	WNW	1.30	4.482E-07	4.409E-07	3.769E-07	1.609E-09
A	NEAREST GARDEN	WN	2.30	8.387E-06	8.281E-06	7.254E-06	1.748E-08
A	NEAREST GARDEN	WNW	0.90	2.168E-06	2.117E-06	1.791E-06	4.458E-09
A	NEAREST GARDEN	NNE	1.90	5.103E-07	4.972E-07	4.070E-07	1.437E-09
A	NEAREST GARDEN	ENE	3058.	3.760E-07	3.687E-07	3.142E-07	1.122E-09
A	NEAREST GARDEN	E	2736.	2.498E-07	2.460E-07	2.080E-07	1.140E-09
A	NEAREST GARDEN	ESE	2397.	1.564E-07	1.532E-07	1.265E-07	8.242E-10
A	NEAREST GARDEN	SE	3953.	2.213E-07	2.139E-07	1.741E-07	9.329E-10
A	NEAREST GARDEN	SE	4825.				

Atmospheric Diffusion Estimates  
Elevated Releases  
January-March 1990

ERP ELEVATED STACK RELEASE - JAN-MAR 1990  
NO DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

SECTOR	ANNUAL AVERAGE CH1/Q (SEC/METER CUBED)										DISTANCE IN MILES									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
S	1.607E-08	5.513E-08	8.215E-08	8.256E-08	7.286E-08	5.879E-08	4.694E-08	3.798E-08	3.131E-08	2.798E-08	2.500	2.250	2.000	1.750	1.500	1.250	1.000	750	500	250
SSW	2.129E-09	2.971E-08	5.262E-08	5.436E-08	4.851E-08	3.942E-08	3.165E-08	2.502E-08	2.051E-08	1.766E-08	1.525E-08	1.325E-08	1.155E-08	1.005E-08	8.73E-09	7.64E-09	6.71E-09	5.92E-09	5.26E-09	4.70E-09
SW	1.707E-10	1.570E-08	5.534E-08	5.428E-08	4.293E-07	8.486E-08	5.979E-08	4.461E-08	3.478E-08	2.804E-08	2.322E-08	1.967E-08	1.707E-08	1.491E-08	1.281E-08	1.097E-08	9.42E-09	8.06E-09	6.92E-09	5.96E-09
WSW	8.534E-11	7.842E-09	3.043E-08	5.359E-08	7.733E-08	4.978E-08	3.519E-08	2.649E-08	2.087E-08	1.700E-08	1.421E-08	1.201E-08	1.031E-08	8.81E-09	7.54E-09	6.48E-09	5.61E-09	4.92E-09	4.34E-09	3.84E-09
W	3.476E-10	2.650E-08	7.818E-08	7.199E-08	6.631E-08	5.500E-08	4.844E-08	4.265E-08	3.736E-08	3.261E-08	2.836E-08	2.459E-08	2.129E-08	1.849E-08	1.614E-08	1.419E-08	1.249E-08	1.104E-08	9.74E-09	8.56E-09
WNW	1.201E-10	9.994E-09	4.246E-08	7.716E-08	1.090E-07	6.696E-08	5.508E-08	4.602E-08	3.902E-08	3.289E-08	2.789E-08	2.354E-08	2.004E-08	1.724E-08	1.499E-08	1.294E-08	1.114E-08	9.64E-09	8.34E-09	7.24E-09
NW	1.237E-10	1.454E-08	8.099E-08	1.752E-07	3.002E-07	1.793E-07	1.203E-07	8.931E-08	6.968E-08	5.525E-08	4.518E-08	3.798E-08	3.131E-08	2.641E-08	2.250E-08	1.914E-08	1.624E-08	1.384E-08	1.184E-08	1.014E-08
NNW	1.162E-08	1.668E-08	2.703E-08	4.287E-08	7.472E-08	8.732E-08	9.371E-08	9.339E-08	9.014E-08	8.584E-08	8.154E-08	7.724E-08	7.294E-08	6.864E-08	6.434E-08	6.004E-08	5.574E-08	5.144E-08	4.714E-08	4.284E-08
N	9.391E-09	4.758E-08	6.176E-08	5.941E-08	5.870E-08	5.567E-08	5.034E-08	4.373E-08	3.814E-08	3.344E-08	2.974E-08	2.644E-08	2.354E-08	2.094E-08	1.854E-08	1.634E-08	1.434E-08	1.254E-08	1.094E-08	9.54E-09
NNE	3.209E-09	1.396E-08	3.237E-08	4.945E-08	6.278E-08	5.902E-08	5.285E-08	4.589E-08	3.990E-08	3.495E-08	3.090E-08	2.745E-08	2.445E-08	2.185E-08	1.945E-08	1.725E-08	1.525E-08	1.345E-08	1.185E-08	1.045E-08
NE	3.573E-09	1.316E-08	3.259E-08	5.366E-08	6.978E-08	6.631E-08	5.831E-08	5.044E-08	4.373E-08	3.822E-08	3.374E-08	2.944E-08	2.524E-08	2.124E-08	1.754E-08	1.414E-08	1.114E-08	8.94E-09	7.84E-09	6.94E-09
E	4.713E-16	5.402E-10	9.251E-09	1.869E-08	2.543E-08	2.420E-08	2.126E-08	1.839E-08	1.595E-08	1.396E-08	1.235E-08	1.097E-08	9.74E-09	8.56E-09	7.54E-09	6.64E-09	5.84E-09	5.14E-09	4.54E-09	4.04E-09
ESE	3.144E-11	2.088E-09	9.945E-09	1.674E-08	2.156E-08	2.057E-08	1.824E-08	1.594E-08	1.396E-08	1.235E-08	1.097E-08	9.74E-09	8.56E-09	7.54E-09	6.64E-09	5.84E-09	5.14E-09	4.54E-09	4.04E-09	3.64E-09
SE	8.534E-11	5.37E-09	2.490E-08	3.358E-08	3.625E-08	3.175E-08	2.644E-08	2.232E-08	1.891E-08	1.623E-08	1.411E-08	1.249E-08	1.104E-08	9.74E-09	8.56E-09	7.54E-09	6.64E-09	5.84E-09	5.14E-09	4.54E-09
SSE	2.010E-10	1.18E-08	3.336E-08	4.48E-08	4.781E-08	4.147E-08	3.459E-08	2.890E-08	2.444E-08	2.096E-08	1.822E-08	1.604E-08	1.414E-08	1.249E-08	1.104E-08	9.74E-09	8.56E-09	7.54E-09	6.64E-09	5.84E-09
SSE	2.122E-08	6.970E-08	9.30E-08	9.169E-08	8.052E-08	6.538E-08	5.265E-08	4.294E-08	3.571E-08	3.045E-08	2.645E-08	2.325E-08	2.035E-08	1.785E-08	1.565E-08	1.375E-08	1.205E-08	1.065E-08	9.45E-09	8.45E-09

SECTOR	ANNUAL AVERAGE CH1/Q (SEC/METER CUBED)										DISTANCE IN MILES									
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000
S	3.021E-08	1.911E-08	1.154E-08	6.431E-09	4.362E-09	3.241E-09	2.504E-09	2.015E-09	1.679E-09	1.428E-09	1.233E-09	1.083E-09	9.53E-10	8.38E-10	7.42E-10	6.62E-10	5.96E-10	5.42E-10	4.96E-10	4.56E-10
SSW	1.922E-08	1.114E-08	6.985E-09	3.822E-09	2.527E-09	1.826E-09	1.400E-09	1.119E-09	9.219E-10	7.775E-10	6.679E-10	5.819E-10	5.079E-10	4.439E-10	3.909E-10	3.479E-10	3.139E-10	2.869E-10	2.639E-10	2.439E-10
SW	2.085E-08	1.514E-08	9.922E-09	5.740E-09	4.140E-09	3.192E-09	2.507E-09	2.110E-09	1.763E-09	1.506E-09	1.309E-09	1.159E-09	1.039E-09	9.39E-10	8.54E-10	7.84E-10	7.24E-10	6.74E-10	6.34E-10	5.94E-10
WSW	1.279E-08	8.604E-09	6.357E-09	3.974E-09	2.690E-09	1.992E-09	1.561E-09	1.271E-09	1.064E-09	9.107E-10	7.925E-10	7.025E-10	6.325E-10	5.725E-10	5.225E-10	4.825E-10	4.425E-10	4.025E-10	3.725E-10	3.425E-10
W	1.272E-08	7.051E-09	5.086E-09	3.301E-09	2.402E-09	1.779E-09	1.389E-09	1.128E-09	9.422E-10	8.045E-10	6.988E-10	6.188E-10	5.588E-10	5.088E-10	4.688E-10	4.388E-10	4.088E-10	3.888E-10	3.688E-10	3.488E-10
WNW	1.538E-08	8.608E-09	5.842E-09	3.550E-09	2.445E-09	1.831E-09	1.450E-09	1.185E-09	9.915E-10	8.470E-10	7.360E-10	6.560E-10	5.960E-10	5.460E-10	5.060E-10	4.760E-10	4.460E-10	4.160E-10	3.960E-10	3.760E-10
NW	3.831E-08	2.140E-08	1.458E-08	8.841E-09	5.977E-09	4.211E-09	3.519E-09	2.871E-09	2.401E-09	2.032E-09	1.784E-09	1.584E-09	1.424E-09	1.284E-09	1.164E-09	1.064E-09	9.74E-10	8.94E-10	8.24E-10	7.64E-10
NNW	5.158E-08	3.061E-08	2.017E-08	1.182E-08	8.119E-09	6.076E-09	4.842E-09	3.997E-09	3.425E-09	2.958E-09	2.582E-09	2.282E-09	2.032E-09	1.832E-09	1.672E-09	1.532E-09	1.412E-09	1.302E-09	1.202E-09	1.112E-09
N	2.668E-08	1.761E-08	1.222E-08	7.740E-09	5.222E-09	3.806E-09	2.845E-09	2.245E-09	1.845E-09	1.545E-09	1.345E-09	1.195E-09	1.085E-09	9.95E-10	9.15E-10	8.45E-10	7.85E-10	7.35E-10	6.95E-10	6.55E-10
NNE	3.467E-08	4.675E-08	3.030E-08	1.780E-08	1.176E-08	8.703E-09	6.815E-09	5.547E-09	4.644E-09	3.972E-09	3.455E-09	3.035E-09	2.715E-09	2.455E-09	2.235E-09	2.055E-09	1.895E-09	1.755E-09	1.635E-09	1.525E-09
NE	3.774E-08	5.164E-08	3.347E-08	1.939E-08	1.298E-08	9.610E-09	7.607E-09	6.228E-09	5.226E-09	4.466E-09	3.833E-09	3.313E-09	2.893E-09	2.573E-09	2.313E-09	2.093E-09	1.913E-09	1.753E-09	1.613E-09	1.483E-09
ENE	1.360E-08	2.157E-08	1.432E-08	8.450E-09	5.822E-09	4.366E-09	3.607E-09	3.079E-09	2.533E-09	2.191E-09	1.912E-09	1.682E-09	1.492E-09	1.332E-09	1.192E-09	1.072E-09	9.72E-10	8.87E-10	8.12E-10	7.47E-10
E	1.240E-08	1.930E-08	1.276E-08	7.493E-09	5.143E-09	3.845E-09	3.034E-09	2.484E-09	2.143E-09	1.873E-09	1.633E-09	1.433E-09	1.273E-09	1.133E-09	1.013E-09	9.13E-10	8.33E-10	7.63E-10	7.03E-10	6.53E-10
ESE	1.440E-08	1.422E-08	9.256E-09	5.317E-09	3.594E-09	2.657E-09	2.076E-09	1.686E-09	1.409E-09	1.209E-09	1.049E-09	9.29E-10	8.39E-10	7.69E-10	7.09E-10	6.59E-10	6.19E-10	5.89E-10	5.59E-10	5.29E-10
SE	1.603E-08	9.944E-09	7.810E-09	5.711E-09	4.190E-09	3.283E-09	2.684E-09	2.257E-09	1.889E-09	1.615E-09	1.404E-09	1.244E-09	1.104E-09	1.004E-09	9.14E-10	8.44E-10	7.84E-10	7.34E-10	6.94E-10	6.54E-10
SSE	5.175E-08	3.004E-08	1.933E-08	1.099E-08	7.403E-09	5.463E-09	4.269E-09	3.468E-09	2.900E-09	2.478E-09	2.153E-09	1.893E-09	1.683E-09	1.513E-09	1.373E-09	1.253E-09	1.153E-09	1.063E-09	9.83E-10	9.13E-10

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT																				
DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES										DISTANCE IN MILES									
	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130	130-140	140-150
S	7.633E-08	6.876E-08	4.651E-08	3.422E-08	3.281E-08	1.788E-08	6.663E-09	3.250E-09	2.027E-09	1.430E-09	1.000E-09	7.00E-10	5.00E-10	3.50E-10	2.50E-10	1.80E-10	1.30E-10	9.0E-11	6.0E-11	4.0E-11
SSW	4.831E-08	4.577E-08	3.387E-08	2.909E-08	2.202E-08	1.105E-08	3.949E-09	1.843E-09	1.124E-09	7.797E-10	5.400E-10	3.800E-10	2.700E-10	1.900E-10	1.400E-10	1.000E-10	7.00E-11	5.00E-11	3.50E-11	2.50E-11
SW	6.384E-08	1.018E-07	6.041E-08	3.502E-08	2.377E-08	1.409E-08	5.965E-09	3.207E-09	2.117E-09	1.509E-09	1.090E-09	7.80E-10	5.60E-10	4.00E-10	2.90E-10	2.10E-10	1.50E-10	1.10E-10	8.0E-11	6.0E-11
WSW	3.570E-08	5.981E-08	3.560E-08	2.100E-08	1.451E-08	8.601E-09	3.933E-09	2.004E-09	1.275E-09	9.125E-10	6.612E-10	4.789E-10	3.489E-10	2.589E-10	1.989E-10	1.489E-10	1.089E-10	8.089E-11	6.089E-11	4.589E-11
W	7.283E-08	7.366E-08	3.894E-08	2.252E-08	1.507E-08	7.438E-09	3.298E-09	1.789E-09	1.132E-09	8.061E-10	5.877E-10	4.287E-10	3.187E-10	2.387E-10	1.787E-10	1.387E-10	1.087E-10	8.087E-11	6.087E-11	4.587E-11
WNW	5.067E-08	8.323E-08	4.701E-08	2.770E-08	1.830E-08	8.884E-09	3.568E-09	1.842E-09	1.187E-09	8.487E-10	6.187E-10	4.487E-10	3.287E-10	2.487E-10	1.887E-10	1.487E-10	1.087E-10	8.087E-11	6.087E-11	4.587E-11
NW	1.081E-07	2.187E-07	1.236E-07	6.979E-08	4.562E-08	2.213E-08	8.843E-09	4.475E-09	2.877E-09	2.056E-09	1.497E-09	1.097E-09	8.07E-10	6.07E-10	4.57E-10	3.37E-10	2.57E-10	1.97E-10	1.47E-10	1.07E-10
NNW	3.177E-08	7.324E-08	9.180E-08	8.459E-08	6.046E-08	3.063E-08	1.203E-08	6.127E-09	4.021E-09	2.957E-09	2.157E-09	1.607E-09	1.207E-09	9.07E-10	6.87E-10	5.17E-10	3.97E-10	2.97E-10	2.17E-10	1.57E-10
N	5.765E-08	5.756E-08	4.912E-08	3.799E-08	2.973E-08	1.854E-08	1.253E-08	8.980E-09	6.036E-09	4.333E-09	3.133E-09	2.333E-09	1.733E-09	1.233E-09	9.03E-10	6.73E-10	5.03E-10	3.83E-10	2.83E-10	2.03E-10
NNE	3.587E-08	5.850E-08	5.192E-08	3.973E-08	3.350E-08	3.675E-08	1.773E-08	8.783E-09	5.563E-09	3.980E-09	2.880E-09	2.180E-09	1.680E-09	1.280E-09	9.58E-10	7.28E-10	5.58E-10	4.28E-10	3.28E-10	2.48E-10
NE	3.759E-08	6.464E-08	5.730E-08	4.355E-08	3.655E-08	4.048E-08	1.960E-08	9.708E-09	6.240E-09	4.475E-09	3.245E-09	2.395E-09	1.795E-09	1.345E-09	1.045E-09	7.95E-10	6.05E-10	4.65E-10	3.55E-10	2.75E-10
ENE	1.151E-08	2.339E-08	2.089E-08	1.589E-08	1.329E-08	1.650E-08	8.584E-09	4.451E-09	3.015E-09	2.195E-09	1.645E-09	1.245E-09	9.45E-10	7.05E-10	5.35E-10	4.05E-10	3.05E-10	2.35E-10	1.85E-10	1.45E-10
E	1.122E-08	2.005E-08	1.794E-08	1.390E-08	1.190E-08	1.486E-08	7.612E-09	3.867E-09	2.511E-09	1.864E-09	1.364E-09	1.064E-09	8.14E-10	6.24E-10	4.74E-10	3.54E-10	2.74E-10	2.14E-10	1.64E-10	1.24E-10
ESE	2.509E-08	3.366E-08	2.628E-08	1.887E-08	1.485E-08	1.205E-08	5.427E-09	2.675E-09	1.892E-09	1.205E-09	8.62E-10	6.22E-10	4.62E-10	3.42E-10	2.62E-10	2.02E-10	1.52E-10	1.12E-10	8.62E-11	6.52E-11
SE	3.367E-08	4.432E-08	3.439E-08	2.439E-08	1.822E-08	1.035E-08	5.501E-09	3.285E-09	2.239E-09	1.618E-09	1.188E-09	8.68E-10	6.48E-10	4.88E-10	3.68E-10	2.88E-10	2.28E-10	1.78E-10	1.38E-10	1.08E-10
SSE	8.734E-08	7.628E-08	5.217E-08	4.235E-08	5.335E-08	3.010E-08	1.111E-08	5.502E-09	3.480E-09	2.483E-09	1.83E-09	1.33E-09	1.03E-09	7.83E-10	5.93E-10	4.53E-10	3.43E-10	2.63E-10	2.03E-10	1.53E-10



CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CURED)

SECTOR	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.607E-08	5.511E-08	8.208E-08	8.246E-08	7.272E-08	5.863E-08	4.678E-08	3.782E-08	3.116E-08	3.375E-08	4.449E-08
SSW	2.129E-09	2.970E-08	5.257E-08	5.257E-08	4.840E-08	3.929E-08	3.152E-08	3.186E-08	3.033E-08	2.549E-08	2.173E-08
SW	1.706E-10	1.568E-08	5.524E-08	9.409E-08	1.291E-07	8.451E-08	5.947E-08	4.322E-08	3.431E-08	2.779E-08	2.299E-08
WSW	8.530E-11	7.835E-09	3.038E-08	5.349E-08	7.707E-08	4.954E-08	3.496E-08	2.628E-08	2.067E-08	1.681E-08	1.403E-08
W	3.474E-10	2.648E-08	7.807E-08	9.183E-08	8.605E-08	5.477E-08	3.823E-08	2.845E-08	2.218E-08	1.790E-08	1.484E-08
WNW	1.200E-10	9.985E-09	4.241E-08	7.703E-08	1.087E-07	6.673E-08	4.539E-08	3.472E-08	2.772E-08	2.199E-08	1.799E-08
NW	1.236E-10	1.452E-08	8.089E-08	1.749E-07	2.995E-07	1.787E-07	1.198E-07	8.886E-08	6.927E-08	5.488E-08	4.484E-08
NNW	1.102E-08	1.667E-08	2.701E-08	4.282E-08	7.456E-08	8.709E-08	9.339E-08	9.300E-08	9.042E-08	7.209E-08	5.923E-08
N	9.389E-09	4.756E-08	6.172E-08	5.955E-08	5.861E-08	5.553E-08	5.021E-08	4.359E-08	3.800E-08	3.339E-08	2.961E-08
NNE	3.208E-09	1.396E-08	3.234E-08	4.938E-08	6.264E-08	8.264E-08	5.263E-08	4.569E-08	3.969E-08	3.474E-08	3.069E-08
NE	3.572E-09	1.316E-08	3.253E-08	5.348E-08	6.961E-08	8.609E-08	5.806E-08	5.019E-08	4.348E-08	3.797E-08	3.349E-08
ENE	4.711E-16	5.398E-10	9.241E-09	1.867E-08	2.539E-08	2.4E-08	2.118E-08	1.831E-08	1.587E-08	1.388E-08	1.227E-08
E	3.144E-11	2.088E-09	9.937E-09	1.673E-08	2.152E-08	2.01E-08	1.819E-08	1.588E-08	1.390E-08	1.226E-08	1.091E-08
ESE	8.530E-11	8.367E-09	2.487E-08	3.354E-08	3.619E-08	3.161E-08	2.656E-08	2.226E-08	1.884E-08	1.616E-08	1.404E-08
SE	2.010E-10	1.182E-08	3.334E-08	4.478E-08	4.774E-08	4.139E-08	3.451E-08	2.881E-08	2.435E-08	2.080E-08	1.814E-08
SSE	2.122E-08	6.967E-08	9.323E-07	9.160E-08	8.040E-08	6.523E-08	5.251E-08	4.282E-08	3.557E-08	4.749E-08	5.982E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CURED)

BEARING	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.000E-08	1.792E-08	1.138E-08	6.314E-09	4.237E-09	3.125E-09	2.397E-09	1.915E-09	1.584E-09	1.337E-09	1.166E-09
SSW	1.907E-08	1.100E-08	6.871E-09	3.730E-09	2.446E-09	1.754E-09	1.334E-09	1.058E-09	8.647E-10	7.237E-10	6.168E-10
SW	2.061E-08	1.482E-08	9.636E-09	5.506E-09	3.888E-09	2.945E-09	2.352E-09	1.878E-09	1.544E-09	1.296E-09	1.107E-09
WSW	1.259E-08	8.589E-09	6.14E-09	3.772E-09	2.509E-09	1.825E-09	1.406E-09	1.124E-09	9.250E-10	7.777E-10	6.502E-10
W	1.257E-08	8.920E-09	4.956E-09	3.171E-09	2.275E-09	1.661E-09	1.279E-09	1.025E-09	8.444E-10	7.113E-10	6.094E-10
WNW	1.525E-08	8.496E-09	5.741E-09	3.457E-09	2.360E-09	1.752E-09	1.374E-09	1.113E-09	9.232E-10	7.816E-10	6.731E-10
NW	3.799E-08	2.117E-08	1.434E-08	8.627E-09	5.785E-09	4.245E-09	3.352E-09	2.713E-09	2.251E-09	1.909E-09	1.646E-09
NNW	5.121E-08	3.028E-08	1.988E-08	1.156E-08	7.882E-09	5.855E-09	4.631E-09	3.794E-09	3.227E-09	2.766E-09	2.394E-09
N	2.654E-08	1.747E-08	1.104E-08	6.942E-09	4.694E-09	3.452E-09	2.742E-09	2.229E-09	1.841E-09	1.573E-09	1.376E-09
NNE	3.441E-08	4.616E-08	2.979E-08	1.797E-08	1.137E-08	8.343E-09	6.478E-09	5.229E-09	4.341E-09	3.682E-09	3.176E-09
NE	3.743E-08	5.104E-08	3.29E-08	1.874E-08	1.258E-08	9.242E-09	7.259E-09	5.897E-09	4.910E-09	4.164E-09	3.592E-09
ENE	1.351E-08	2.137E-08	1.413E-08	8.288E-09	5.674E-09	4.228E-09	3.470E-09	2.903E-09	2.424E-09	2.067E-09	1.792E-09
E	1.233E-08	1.906E-08	1.255E-08	4.971E-09	3.685E-09	2.882E-09	2.282E-09	2.340E-09	2.001E-09	1.733E-09	1.498E-09
ESE	1.432E-08	1.410E-08	9.150E-09	5.226E-09	3.513E-09	2.581E-09	2.003E-09	1.619E-09	1.344E-09	1.141E-09	9.846E-10
SE	1.595E-08	8.862E-09	7.717E-09	5.594E-09	4.070E-09	3.162E-09	2.563E-09	2.137E-09	1.774E-09	1.504E-09	1.297E-09
SSE	5.143E-08	2.976E-08	1.908E-08	1.078E-08	7.216E-09	5.291E-09	4.107E-09	3.316E-09	2.754E-09	2.338E-09	2.019E-09

CHI/Q (SEC/METER CURED) FOR EACH SEGMENT

DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.626E-08	6.862E-08	4.635E-08	3.405E-08	3.261E-08	1.770E-08	6.524E-09	3.134E-09	1.927E-09	1.339E-09
SSW	4.825E-08	4.566E-08	3.373E-08	2.893E-08	2.186E-08	1.096E-08	3.857E-09	1.770E-09	1.063E-09	7.259E-10
SW	6.372E-08	1.015E-07	6.009E-08	3.475E-08	2.353E-08	1.380E-08	5.705E-09	2.959E-09	1.886E-09	1.300E-09
WSW	3.564E-08	5.959E-08	3.538E-08	2.080E-08	1.432E-08	8.393E-09	3.738E-09	1.840E-09	1.129E-09	7.796E-10
W	7.272E-08	7.343E-08	3.873E-08	2.234E-08	1.491E-08	7.302E-09	3.169E-09	1.672E-09	1.029E-09	7.130E-10
WNW	5.059E-08	6.304E-08	4.681E-08	2.754E-08	1.816E-08	8.772E-09	3.477E-09	1.763E-09	1.116E-09	7.934E-10
NW	1.079E-07	2.181E-07	1.231E-07	6.939E-08	4.528E-08	2.186E-08	8.634E-09	4.299E-09	2.720E-09	1.913E-09
NNW	3.174E-08	7.308E-08	9.155E-08	8.417E-08	6.007E-08	3.031E-08	1.178E-08	5.904E-09	3.817E-09	2.765E-09
N	5.761E-08	5.746E-08	4.899E-08	3.784E-08	2.959E-08	1.842E-08	1.230E-08	8.670E-09	5.727E-09	4.048E-09
NNE	3.583E-08	5.836E-08	5.173E-08	3.932E-08	3.327E-08	3.627E-08	1.732E-08	8.404E-09	5.247E-09	3.690E-09
NE	3.754E-08	6.446E-08	5.705E-08	4.329E-08	3.997E-08	3.997E-08	1.916E-08	9.340E-09	5.910E-09	4.173E-09
ENE	1.150E-08	2.334E-08	2.082E-08	1.581E-08	1.321E-08	1.640E-08	8.425E-09	4.310E-09	2.882E-09	2.071E-09
E	1.121E-08	2.001E-08	1.789E-08	1.384E-08	1.184E-08	1.467E-08	7.433E-09	3.707E-09	2.366E-09	1.726E-09
ESE	2.506E-08	3.359E-08	2.620E-08	1.879E-08	1.477E-08	1.195E-08	5.337E-09	2.599E-09	1.624E-09	1.143E-09
SE	3.364E-08	4.426E-08	3.407E-08	2.430E-08	1.814E-08	1.026E-08	5.889E-09	3.164E-09	2.120E-09	1.508E-09
SSE	8.727E-08	7.655E-08	5.203E-08	4.219E-08	5.306E-08	2.983E-08	1.104E-08	5.331E-09	3.328E-09	2.343E-09

TRP ELEVATED STACK RELEASE - JAN-MAR 1990  
000 DAY DECAY, DEPLETED

ACTED FOR OPEN TERRAIN RECIRCULATION

SECTOR	ANNUAL AVERAGE CH1/Q (SEC/METER CUBED)										DISTANCE IN MILES									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
S	1.607E-08	5.464E-08	8.070E-08	8.116E-08	7.139E-08	5.723E-08	4.537E-08	3.646E-08	2.985E-08	2.433E-08	1.988E-08	1.638E-08	1.368E-08	1.148E-08	9.58E-09	8.07E-09	6.87E-09	5.92E-09	5.19E-09	4.56E-09
SSW	2.129E-09	2.945E-08	5.169E-08	5.341E-08	4.751E-08	3.836E-08	3.038E-08	2.411E-08	1.923E-08	1.543E-08	1.243E-08	1.013E-08	8.38E-09	7.07E-09	6.07E-09	5.27E-09	4.57E-09	3.97E-09	3.47E-09	3.07E-09
SW	1.706E-10	1.556E-08	5.463E-08	9.348E-08	1.275E-07	8.277E-08	5.784E-08	4.286E-08	3.321E-08	2.63E-08	2.13E-08	1.73E-08	1.43E-08	1.18E-08	9.83E-09	8.33E-09	7.13E-09	6.13E-09	5.33E-09	4.63E-09
WSW	8.532E-11	7.772E-09	3.005E-08	5.313E-08	7.611E-08	4.860E-08	3.415E-08	2.559E-08	2.008E-08	1.630E-08	1.359E-08	1.135E-08	9.58E-09	8.07E-09	6.87E-09	5.92E-09	5.19E-09	4.56E-09	3.97E-09	3.47E-09
W	3.476E-10	2.618E-08	7.729E-08	9.031E-08	6.48E-08	5.313E-08	4.286E-08	3.321E-08	2.63E-08	2.13E-08	1.73E-08	1.43E-08	1.18E-08	9.83E-09	8.33E-09	7.13E-09	6.13E-09	5.33E-09	4.63E-09	4.03E-09
WRW	1.201E-10	9.920E-09	4.213E-08	7.639E-08	1.076E-07	6.576E-08	4.659E-08	3.405E-08	2.715E-08	2.18E-08	1.750E-08	1.43E-08	1.18E-08	9.83E-09	8.33E-09	7.13E-09	6.13E-09	5.33E-09	4.63E-09	4.03E-09
RR	1.237E-10	1.441E-08	8.024E-08	1.737E-07	2.963E-07	1.756E-07	8.665E-08	6.739E-08	5.319E-08	4.27E-08	3.47E-08	2.89E-08	2.43E-08	2.03E-08	1.73E-08	1.43E-08	1.18E-08	9.83E-09	8.33E-09	7.13E-09
NRW	1.102E-08	1.653E-08	2.668E-08	4.256E-08	7.408E-08	8.639E-08	9.270E-08	9.239E-08	8.992E-08	8.732E-08	8.471E-08	8.212E-08	7.953E-08	7.694E-08	7.435E-08	7.176E-08	6.917E-08	6.658E-08	6.399E-08	6.140E-08
N	9.390E-09	4.715E-08	6.061E-08	5.854E-08	5.769E-08	5.684E-08	5.599E-08	5.514E-08	5.429E-08	5.344E-08	5.259E-08	5.174E-08	5.089E-08	5.004E-08	4.919E-08	4.834E-08	4.749E-08	4.664E-08	4.579E-08	4.494E-08
NNE	3.208E-09	1.385E-08	3.209E-08	4.919E-08	6.213E-08	5.885E-08	5.557E-08	5.229E-08	4.901E-08	4.573E-08	4.245E-08	3.917E-08	3.589E-08	3.261E-08	2.933E-08	2.605E-08	2.277E-08	1.949E-08	1.621E-08	1.293E-08
NE	3.572E-09	1.305E-08	3.235E-08	5.335E-08	6.909E-08	6.521E-08	6.133E-08	5.745E-08	5.357E-08	4.969E-08	4.581E-08	4.193E-08	3.805E-08	3.417E-08	3.029E-08	2.641E-08	2.253E-08	1.865E-08	1.477E-08	1.089E-08
ENE	4.712E-10	5.401E-08	9.249E-08	1.689E-08	2.523E-08	2.382E-08	2.241E-08	2.100E-08	1.959E-08	1.818E-08	1.677E-08	1.536E-08	1.395E-08	1.254E-08	1.113E-08	9.72E-09	8.33E-09	6.94E-09	5.55E-09	4.16E-09
E	3.144E-11	2.074E-09	9.490E-09	1.669E-08	3.327E-08	3.575E-08	3.823E-08	4.071E-08	4.319E-08	4.567E-08	4.815E-08	5.063E-08	5.311E-08	5.559E-08	5.807E-08	6.055E-08	6.303E-08	6.551E-08	6.799E-08	7.047E-08
ESE	8.533E-11	8.305E-09	2.461E-08	3.327E-08	3.575E-08	3.823E-08	4.071E-08	4.319E-08	4.567E-08	4.815E-08	5.063E-08	5.311E-08	5.559E-08	5.807E-08	6.055E-08	6.303E-08	6.551E-08	6.799E-08	7.047E-08	7.295E-08
SE	2.010E-10	1.173E-08	3.301E-08	4.455E-08	4.710E-08	4.965E-08	5.220E-08	5.475E-08	5.730E-08	5.985E-08	6.240E-08	6.495E-08	6.750E-08	7.005E-08	7.260E-08	7.515E-08	7.770E-08	8.025E-08	8.280E-08	8.535E-08
SSE	2.122E-08	6.908E-08	9.169E-08	9.021E-08	7.899E-08	6.376E-08	5.101E-08	4.137E-08	3.419E-08	2.895E-08	2.471E-08	2.047E-08	1.623E-08	1.200E-08	8.776E-09	5.552E-09	2.328E-09	1.104E-09	5.820E-10	2.596E-10
BEARING	ANNUAL AVERAGE CH1/Q (SEC/METER CUBED)										DISTANCE IN MILES									
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000
S	2.859E-08	1.673E-08	1.033E-08	5.436E-09	3.466E-09	2.431E-09	1.804E-09	1.400E-09	1.129E-09	9.329E-10	7.833E-10	6.647E-10	5.671E-10	4.895E-10	4.219E-10	3.643E-10	3.167E-10	2.791E-10	2.415E-10	2.039E-10
SSW	1.812E-08	1.021E-08	6.203E-09	3.200E-09	2.000E-09	1.388E-09	1.026E-09	7.934E-10	6.342E-10	5.199E-10	4.349E-10	3.673E-10	3.107E-10	2.641E-10	2.275E-10	1.969E-10	1.713E-10	1.457E-10	1.201E-10	9.45E-11
SW	1.966E-08	1.410E-08	8.843E-09	4.858E-09	3.242E-09	2.343E-09	1.825E-09	1.429E-09	1.154E-09	9.550E-10	8.052E-10	6.866E-10	5.990E-10	5.314E-10	4.748E-10	4.282E-10	3.816E-10	3.350E-10	2.884E-10	2.418E-10
WSW	1.221E-08	8.267E-09	5.781E-09	3.418E-09	2.205E-09	1.566E-09	1.183E-09	9.310E-10	7.556E-10	6.279E-10	5.315E-10	4.569E-10	3.943E-10	3.417E-10	2.991E-10	2.665E-10	2.339E-10	2.013E-10	1.687E-10	1.361E-10
W	1.216E-08	6.677E-09	4.773E-09	3.912E-09	1.982E-09	1.410E-09	1.042E-09	8.347E-10	6.768E-10	5.619E-10	4.753E-10	4.007E-10	3.481E-10	3.055E-10	2.629E-10	2.203E-10	1.777E-10	1.351E-10	9.25E-11	5.09E-11
WRW	1.476E-08	8.007E-09	5.251E-09	2.967E-09	1.877E-09	1.319E-09	1.002E-09	7.911E-10	6.408E-10	5.311E-10	4.486E-10	3.810E-10	3.284E-10	2.858E-10	2.432E-10	2.006E-10	1.580E-10	1.154E-10	7.38E-11	3.22E-11
NRW	3.650E-08	1.977E-08	1.303E-08	7.388E-09	4.724E-09	3.334E-09	2.544E-09	2.017E-09	1.636E-09	1.360E-09	1.151E-09	9.88E-10	8.51E-10	7.32E-10	6.34E-10	5.55E-10	4.86E-10	4.27E-10	3.68E-10	3.09E-10
N	5.041E-08	2.898E-08	1.841E-08	9.955E-09	6.272E-09	4.352E-09	3.233E-09	2.552E-09	2.113E-09	1.768E-09	1.498E-09	1.289E-09	1.129E-09	1.000E-09	8.81E-10	7.72E-10	6.73E-10	5.84E-10	5.05E-10	4.26E-10
NNE	3.349E-08	4.503E-08	2.819E-08	1.521E-08	9.724E-09	6.859E-09	5.147E-09	4.034E-09	3.262E-09	2.702E-09	2.280E-09	1.958E-09	1.686E-09	1.454E-09	1.252E-09	1.080E-09	9.38E-10	8.16E-10	7.13E-10	6.20E-10
NE	3.634E-08	4.968E-08	3.111E-08	1.680E-08	1.076E-08	7.597E-09	5.791E-09	4.594E-09	3.744E-09	3.115E-09	2.60E-09	2.20E-09	1.89E-09	1.66E-09	1.46E-09	1.29E-09	1.15E-09	1.01E-09	8.8E-10	7.6E-10
ENE	1.310E-08	2.090E-08	1.340E-08	7.370E-09	4.677E-09	3.273E-09	2.544E-09	2.050E-09	1.66E-09	1.352E-09	1.130E-09	9.51E-10	8.13E-10	7.04E-10	6.20E-10	5.50E-10	4.89E-10	4.38E-10	3.96E-10	3.54E-10
E	1.203E-08	1.875E-08	1.197E-08	6.538E-09	4.125E-09	2.873E-09	2.130E-09	1.650E-09	1.352E-09	1.130E-09	9.51E-10	8.13E-10	7.04E-10	6.20E-10	5.50E-10	4.89E-10	4.38E-10	3.96E-10	3.54E-10	3.12E-10
ESE	1.376E-08	1.356E-08	8.548E-09	4.600E-09	2.891E-09	2.008E-09	1.484E-09	1.149E-09	8.98E-10	7.517E-10	6.278E-10	5.24E-10	4.44E-10	3.84E-10	3.33E-10	2.91E-10	2.57E-10	2.31E-10	2.05E-10	1.80E-10
SE	1.526E-08	9.332E-09	7.289E-09	5.303E-09	3.854E-09	3.011E-09	2.450E-09	2.045E-09	1.669E-09	1.394E-09	1.184E-09	1.013E-09	8.77E-10	7.64E-10	6.69E-10	5.90E-10	5.21E-10	4.61E-10	4.09E-10	3.57E-10
SSE	4.971E-08	2.799E-08	1.738E-08	9.306E-09	5.949E-09	4.199E-09	3.155E-09	2.475E-09	2.003E-09	1.661E-09	1.404E-09	1.200E-09	1.040E-09	9.04E-10	7.91E-10	6.96E-10	6.16E-10	5.46E-10	4.84E-10	4.22E-10
DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES										SEGMENT BOUNDARIES IN MILES									
	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.511E-08	6.727E-08	4.497E-08	3.267E-08	3.115E-08	1.652E-08	5.648E-09	2.456E-09	1.413E-09	9.358E-10	7.511E-08	6.727E-08	4.497E-08	3.267E-08	3.115E-08	1.652E-08	5.648E-09	2.456E-09	1.413E-09	9.358E-10
SSW	4.751E-08	4.476E-08	3.275E-08	2.785E-08	2.086E-08	1.019E-08	3.334E-09	1.405E-09	7.991E-10	5.23E-10	4.751E-08	4.476E-08	3.275E-08	2.785E-08	2.086E-08	1.019E-08	3.334E-09	1.405E-09	7.991E-10	5.23E-10
SW	6.322E-08	1.001E-07	5.850E-08	3.346E-08	2.249E-08	1.304E-08	5.048E-09	2.376E-09	1.437E-09	9.586E-10	6.322E-08	1.001E-07	5.850E-08	3.346E-08	2.249E-08	1.304E-08	5.048E-09	2.376E-09	1.437E-09	9.586E-10
WSW	3.536E-08	5.878E-08	3.458E-08	2.021E-08	1.388E-08	8.038E-09	3.404E-09	1.583E-09	9.362E-10	6.302E-10	3.536E-08	5.878E-08	3.458E-08	2.021E-08	1.388E-08	8.038E-09	3.404E-09	1.583E-09	9.362E-10	6.302E-10
W	7.181E-08	7.206E-08	3.775E-08	2.169E-08	1.443E-08	7.049E-09	2.9.													



ERP ELEVATED STACK RELEASE - JAN-MAR 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (M<sup>-2</sup>) AT FIXED POINTS BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	DISTANCES IN MILES										
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	7.079E-09	5.770E-09	4.922E-09	3.409E-09	1.670E-09	1.027E-09	6.952E-10	4.997E-10	3.743E-10	3.101E-10	2.713E-10
SSW	3.308E-09	2.849E-09	2.559E-09	1.846E-09	9.341E-10	5.822E-10	3.968E-10	2.863E-10	2.634E-10	1.991E-10	1.539E-10
SW	1.376E-09	1.264E-09	1.289E-09	1.014E-09	9.717E-10	5.265E-10	3.257E-10	2.209E-10	1.596E-10	1.207E-10	9.447E-11
WSW	6.854E-10	6.168E-10	6.120E-10	7.692E-10	4.495E-10	2.426E-10	1.496E-10	1.013E-10	7.311E-11	5.525E-11	4.324E-11
W	3.529E-10	1.532E-09	1.350E-09	8.409E-10	3.865E-10	2.093E-10	1.292E-10	8.756E-11	6.320E-11	4.776E-11	3.737E-11
WNW	3.529E-10	3.698E-10	1.133E-09	8.458E-10	5.041E-10	2.554E-10	1.530E-10	1.032E-10	8.090E-11	6.479E-11	5.505E-11
NW	1.071E-09	1.181E-09	1.463E-09	2.965E-09	1.902E-09	9.467E-10	5.599E-10	3.726E-10	2.707E-10	2.107E-10	1.736E-10
NNW	1.693E-09	1.419E-09	1.268E-09	9.117E-10	7.922E-10	4.261E-10	2.625E-10	2.346E-10	1.852E-10	1.589E-10	1.445E-10
N	5.710E-09	4.547E-09	3.720E-09	2.486E-09	1.181E-09	7.166E-10	4.817E-10	3.449E-10	2.579E-10	1.991E-10	1.577E-10
NNE	1.434E-09	1.612E-09	2.030E-09	1.781E-09	1.025E-09	6.695E-10	4.671E-10	3.411E-10	2.575E-10	1.996E-10	1.581E-10
NE	1.096E-09	1.334E-09	1.789E-09	1.612E-09	9.413E-10	6.179E-10	4.321E-10	3.159E-10	2.387E-10	1.850E-10	1.465E-10
ENE	4.434E-11	2.660E-10	5.664E-10	5.867E-10	3.665E-10	2.457E-10	1.736E-10	1.275E-10	9.657E-11	7.495E-11	5.936E-11
E	3.768E-10	5.130E-10	7.417E-10	6.878E-10	4.077E-10	2.690E-10	1.886E-10	1.380E-10	1.043E-10	8.090E-11	6.406E-11
ESE	7.417E-10	9.544E-10	1.331E-09	1.218E-09	7.168E-10	4.718E-10	3.304E-10	2.416E-10	1.826E-10	1.416E-10	1.121E-10
SE	2.116E-09	2.208E-09	2.598E-09	2.209E-09	1.248E-09	8.105E-10	5.639E-10	4.111E-10	3.102E-10	2.404E-10	1.903E-10
SSE	7.123E-09	6.036E-09	5.489E-09	3.996E-09	2.036E-09	1.273E-09	8.687E-10	6.272E-10	4.709E-10	4.390E-10	4.033E-10

DIRECTION FROM SITE	DISTANCES IN MILES										
	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	2.183E-10	1.277E-10	8.300E-11	4.626E-11	2.931E-11	2.227E-11	1.595E-11	1.198E-11	9.712E-12	7.758E-12	6.332E-12
SSW	1.258E-10	7.340E-11	4.760E-11	2.643E-11	1.886E-11	1.314E-11	9.415E-12	7.070E-12	5.529E-12	4.417E-12	3.605E-12
SW	7.639E-11	5.213E-11	3.532E-11	2.035E-11	1.290E-11	8.952E-12	6.711E-12	5.079E-12	3.949E-12	3.155E-12	2.575E-12
WSW	3.478E-11	2.395E-11	1.628E-11	1.057E-11	6.399E-12	4.290E-12	3.074E-12	2.308E-12	1.795E-12	1.434E-12	1.170E-12
W	3.005E-11	1.348E-11	1.719E-11	1.089E-11	6.864E-12	4.602E-12	3.298E-12	2.476E-12	1.925E-12	1.538E-12	1.255E-12
WNW	4.910E-11	3.266E-11	2.436E-11	1.514E-11	1.015E-11	6.112E-12	4.189E-12	3.146E-12	2.446E-12	1.954E-12	1.595E-12
NW	1.503E-10	9.153E-11	6.565E-11	4.022E-11	2.462E-11	1.653E-11	1.188E-11	8.923E-12	6.938E-12	5.542E-12	4.523E-12
NNW	1.367E-10	1.055E-10	8.316E-11	5.380E-11	3.486E-11	2.309E-11	1.458E-11	1.029E-11	7.726E-12	6.171E-12	5.037E-12
N	1.274E-10	6.080E-11	3.740E-11	2.011E-11	9.302E-11	4.949E-11	3.546E-11	2.663E-11	2.070E-11	1.654E-11	1.350E-11
NNE	1.274E-10	2.509E-10	1.554E-10	8.061E-11	4.918E-11	3.291E-11	2.351E-11	1.759E-11	1.363E-11	1.086E-11	8.850E-12
NE	1.181E-10	2.406E-10	1.499E-10	7.834E-11	4.791E-11	3.205E-11	2.323E-11	1.745E-11	1.357E-11	1.084E-11	8.845E-12
ENE	4.780E-11	8.806E-11	6.830E-11	4.362E-11	2.809E-11	1.854E-11	1.295E-11	8.126E-12	6.322E-12	5.054E-12	4.129E-12
E	5.162E-11	8.689E-11	6.679E-11	4.240E-11	2.729E-11	1.804E-11	1.262E-11	9.204E-12	6.981E-12	5.146E-12	4.191E-12
ESE	9.037E-11	9.562E-11	6.843E-11	4.118E-11	2.622E-11	1.741E-11	1.227E-11	9.032E-12	6.910E-12	5.450E-12	4.401E-12
SE	1.534E-10	7.282E-11	4.450E-11	2.355E-11	1.446E-11	1.002E-11	7.534E-12	4.462E-12	1.124E-11	8.913E-12	7.239E-12
SSE	3.360E-10	2.467E-10	1.509E-10	7.716E-11	4.687E-11	3.139E-11	2.246E-11	1.684E-11	1.307E-11	1.042E-11	8.507E-12

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (M<sup>-2</sup>) BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES									
	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.438E-09	1.771E-09	7.054E-10	3.857E-10	2.632E-10	1.280E-10	4.669E-11	2.162E-11	1.225E-11	7.809E-12
SSW	2.306E-09	9.803E-10	4.020E-10	2.454E-10	1.576E-10	7.358E-11	2.777E-11	1.318E-11	7.153E-12	4.446E-12
SW	1.161E-09	7.832E-10	3.373E-10	1.623E-10	9.554E-11	5.005E-11	2.036E-11	9.107E-12	5.115E-12	3.175E-12
WSW	6.829E-10	4.286E-10	1.551E-10	7.436E-11	4.366E-11	2.295E-11	9.986E-12	4.366E-12	2.331E-12	1.443E-12
W	1.169E-09	4.087E-10	1.339E-10	6.428E-11	3.774E-11	1.881E-11	1.650E-11	4.684E-12	2.501E-12	1.548E-12
WNW	8.358E-10	4.695E-10	1.604E-10	8.113E-11	5.573E-11	3.262E-11	1.497E-11	6.421E-12	3.177E-12	1.967E-12
NW	2.068E-09	1.714E-09	5.881E-10	2.770E-10	1.760E-10	9.308E-11	3.894E-11	1.683E-11	9.012E-12	5.578E-12
NNW	1.143E-09	6.561E-10	2.950E-10	1.893E-10	1.459E-10	1.025E-10	5.191E-11	2.282E-11	1.053E-11	6.212E-12
N	3.355E-09	1.264E-09	4.896E-10	2.604E-10	1.587E-10	6.519E-11	5.636E-11	5.549E-11	2.689E-11	1.665E-11
NNE	1.826E-09	1.035E-09	6.707E-10	2.593E-10	1.590E-10	1.810E-10	8.325E-11	3.349E-11	1.777E-11	1.094E-11
NE	1.609E-09	9.466E-10	4.352E-10	2.403E-10	1.474E-10	1.731E-10	8.071E-11	3.275E-11	1.762E-11	1.091E-11
ENE	5.087E-10	3.617E-10	1.744E-10	9.717E-11	5.970E-11	7.033E-11	4.220E-11	1.885E-11	8.816E-12	5.087E-12
E	6.669E-10	4.083E-10	1.898E-10	1.050E-10	6.444E-11	7.012E-11	4.111E-11	1.834E-11	9.333E-12	5.336E-12
ESE	1.197E-09	7.192E-10	3.326E-10	1.839E-10	1.128E-10	8.237E-11	4.059E-11	1.770E-11	9.149E-12	5.494E-12
SE	2.339E-09	1.267E-09	5.685E-10	3.124E-10	1.915E-10	7.815E-11	2.416E-11	1.021E-11	1.131E-11	8.983E-12
SSE	4.947E-09	2.132E-09	8.798E-10	5.034E-10	3.890E-10	2.240E-10	8.008E-11	3.195E-11	1.701E-11	1.050E-11



ERP ELEVATED STACK RELEASE - JAN-MAR 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	K/Q (SEC/CUB.METER)	K/Q (SEC/CUB.METER)	K/Q (SEC/CUB.METER)	D/Q (PER SQ.METER)
NO DECAY							
				UNDEPLETED	UNDEPLETED	DEPLETED	
				2.260 DAY DECAY			
				8.000 DAY DECAY			
A	SITE BOUNDARY	S	0.80	1287.	8.261E-08	8.273E-08	4.588E-09
A	SITE BOUNDARY	SSW	0.82	1327.	5.380E-08	5.374E-08	2.337E-09
A	SITE BOUNDARY	SW	0.98	1549.	9.077E-08	9.059E-08	1.052E-09
A	SITE BOUNDARY	WSW	0.93	1489.	4.726E-08	4.718E-08	6.624E-10
A	SITE BOUNDARY	W	0.91	1468.	8.963E-08	8.951E-08	9.860E-10
A	SITE BOUNDARY	WNW	0.94	1509.	6.892E-08	6.881E-08	9.461E-10
A	SITE BOUNDARY	FW	0.81	1307.	1.036E-07	1.036E-07	1.446E-09
A	SITE BOUNDARY	WNW	0.69	1106.	2.272E-08	2.270E-08	1.239E-09
A	SITE BOUNDARY	N	0.67	1086.	5.783E-08	5.779E-08	3.902E-09
A	SITE BOUNDARY	NNE	0.60	965.	1.872E-08	1.871E-08	1.756E-09
A	SITE BOUNDARY	NE	0.62	1005.	1.938E-08	1.919E-08	1.543E-09
A	SITE BOUNDARY	ENE	0.59	945.	2.251E-09	2.249E-09	3.685E-10
A	SITE BOUNDARY	E	0.53	845.	2.525E-09	2.524E-09	5.330E-10
A	SITE BOUNDARY	ESE	0.54	865.	1.039E-08	1.038E-08	1.903E-09
A	SITE BOUNDARY	SE	0.65	1046.	2.345E-08	2.344E-08	2.412E-09
A	SITE BOUNDARY	SSE	0.81	1307.	9.323E-08	9.315E-08	5.104E-09
A	NEAR. RESIDENCE	SW	1.30	2092.	1.238E-07	1.235E-07	1.298E-09
A	NEAR. RESIDENCE	WSW	1.30	2092.	7.072E-08	7.054E-08	6.018E-10
A	NEAR. RESIDENCE	W	1.00	1609.	9.199E-08	9.183E-08	8.409E-10
A	NEAR. RESIDENCE	WNW	1.60	2576.	9.782E-08	9.755E-08	4.322E-10
A	NEAR. RESIDENCE	NW	0.90	1448.	1.371E-07	1.369E-07	3.128E-09
A	NEAR. RESIDENCE	WNW	3.90	3059.	8.546E-08	8.546E-08	4.765E-10
A	NEAR. RESIDENCE	N	3.00	4829.	4.373E-08	4.359E-08	3.448E-10
A	NEAR. RESIDENCE	NNE	2.40	3863.	5.430E-08	5.410E-08	4.999E-10
A	NEAR. RESIDENCE	ENE	1.70	2737.	2.540E-08	2.533E-08	3.099E-10
A	NEAR. RESIDENCE	E	1.80	2896.	2.127E-08	2.123E-08	3.133E-10
A	NEAR. RESIDENCE	ESE	2.00	3220.	3.174E-08	3.167E-08	4.716E-10
A	NEAR. RESIDENCE	SE	2.20	3542.	3.860E-08	3.853E-08	6.959E-10
A	NEAREST COW	WNW	3.50	5634.	9.083E-08	9.088E-08	1.851E-10
A	NEAREST GARDEN	SW	1.40	2253.	4.283E-07	1.279E-07	1.119E-09
A	NEAREST GARDEN	WSW	1.30	2092.	7.072E-08	7.054E-08	6.018E-10
A	NEAREST GARDEN	W	2.30	3702.	4.396E-08	4.374E-08	1.546E-10
A	NEAREST GARDEN	WNW	1.60	2575.	9.788E-08	9.762E-08	4.326E-10
A	NEAREST GARDEN	NW	0.90	1448.	1.371E-07	1.369E-07	3.128E-09
A	NEAREST GARDEN	WNW	1.90	3058.	8.543E-08	8.523E-08	4.769E-10
A	NEAREST GARDEN	NNE	2.70	4345.	4.998E-08	4.976E-08	4.101E-10
A	NEAREST GARDEN	ENE	1.70	2736.	2.540E-08	2.534E-08	3.101E-10
A	NEAREST GARDEN	E	1.80	2897.	2.127E-08	2.123E-08	3.135E-10
A	NEAREST GARDEN	ESE	2.40	3863.	2.761E-08	2.753E-08	3.533E-10
A	NEAREST GARDEN	SE	3.00	4828.	2.890E-08	2.881E-08	4.111E-10

Atmospheric Diffusion Estimates  
Elevated Releases  
April-June 1990

ERP ELEVATED STACK RELEASE - APR-JUNE 1990  
NO DELAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

SECTOR	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	7.345E-10	4.795E-08	9.300E-08	8.813E-08	7.127E-08	5.687E-08	4.594E-08	3.781E-08	4.056E-08	4.151E-08	
SSW	1.523E-09	2.079E-08	3.977E-08	4.311E-08	4.016E-08	3.331E-08	2.711E-08	2.813E-08	2.775E-08	2.382E-08	2.074E-08
SW	2.759E-09	3.971E-08	9.470E-08	1.250E-07	1.417E-07	9.096E-08	6.364E-08	4.739E-08	3.694E-08	2.981E-08	2.472E-08
WSW	1.707E-10	1.235E-08	5.609E-08	1.117E-07	1.612E-07	9.857E-08	6.669E-08	4.845E-08	3.705E-08	2.945E-08	2.411E-08
W	3.282E-10	4.834E-08	2.048E-07	2.504E-07	2.194E-07	1.349E-07	5.164E-08	6.752E-08	5.113E-08	4.067E-08	3.330E-08
WNW	1.989E-10	1.386E-08	1.093E-07	1.968E-07	2.563E-07	1.591E-07	1.093E-07	8.496E-08	6.885E-08	5.499E-08	4.525E-08
NW	1.511E-08	3.690E-08	1.071E-07	2.199E-07	3.570E-07	2.102E-07	1.394E-07	1.020E-07	7.845E-08	6.175E-08	5.017E-08
NNW	1.048E-07	1.906E-07	2.135E-07	1.788E-07	1.811E-07	1.513E-07	1.258E-07	1.075E-07	9.371E-08	7.345E-08	5.950E-08
NNE	3.957E-08	1.051E-07	1.214E-07	1.009E-07	7.558E-08	5.933E-08	4.760E-08	3.905E-08	3.270E-08	2.789E-08	2.417E-08
NE	2.685E-09	3.134E-08	4.725E-08	4.159E-08	3.159E-08	2.422E-08	1.898E-08	6.711E-09	7.326E-09	6.283E-09	5.470E-09
ENE	1.147E-09	5.165E-09	9.485E-09	1.267E-08	1.416E-08	1.244E-08	1.039E-08	8.671E-09	1.237E-08	1.057E-08	9.049E-09
E	1.316E-09	1.535E-08	2.762E-08	2.946E-08	2.641E-08	2.117E-08	1.679E-08	1.353E-08	1.113E-08	9.332E-09	7.968E-09
ESE	2.750E-10	2.024E-08	4.077E-08	4.264E-08	3.717E-08	2.948E-08	2.365E-08	1.921E-08	1.594E-08	1.350E-08	1.163E-08
SE	1.147E-08	6.135E-08	7.982E-08	7.211E-08	5.811E-08	4.546E-08	3.615E-08	2.919E-08	2.407E-08	2.023E-08	1.729E-08
SSE	4.095E-08	1.513E-07	1.490E-07	1.152E-07	8.352E-08	6.419E-08	5.065E-08	4.098E-08	3.391E-08	4.476E-08	5.054E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

BEARING	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.627E-08	2.247E-08	1.438E-08	8.083E-09	5.556E-09	4.145E-09	3.210E-09	2.589E-09	2.165E-09	1.847E-09	1.596E-09
SSW	1.870E-08	1.202E-08	7.633E-09	4.250E-09	2.866E-09	2.094E-09	1.615E-09	1.297E-09	1.074E-09	9.099E-10	7.846E-10
SW	2.233E-08	1.596E-08	1.039E-08	5.985E-09	4.231E-09	3.218E-09	2.576E-09	2.090E-09	1.745E-09	1.489E-09	1.293E-09
WSW	2.085E-08	1.272E-08	8.876E-09	5.437E-09	3.642E-09	2.676E-09	2.084E-09	1.687E-09	1.406E-09	1.198E-09	1.039E-09
W	2.791E-08	1.480E-08	1.009E-08	6.054E-09	4.169E-09	3.040E-09	2.348E-09	1.889E-09	1.566E-09	1.327E-09	1.145E-09
WNW	3.863E-08	2.215E-08	1.527E-08	9.461E-09	6.569E-09	4.950E-09	3.943E-09	3.238E-09	2.717E-09	2.324E-09	2.021E-09
NW	4.214E-08	2.261E-08	1.494E-08	8.684E-09	5.805E-09	4.255E-09	3.331E-09	2.697E-09	2.243E-09	1.908E-09	1.651E-09
NNW	5.042E-08	2.802E-08	1.807E-08	1.030E-08	6.963E-09	5.149E-09	4.059E-09	3.322E-09	2.822E-09	2.424E-09	2.106E-09
NNE	2.594E-08	3.436E-08	2.227E-08	1.280E-08	8.966E-09	6.457E-09	5.070E-09	4.137E-09	3.471E-09	2.974E-09	2.592E-09
NE	9.347E-09	1.148E-08	7.408E-09	4.236E-09	2.872E-09	2.130E-09	1.694E-09	1.392E-09	1.172E-09	1.003E-09	8.730E-10
ENE	5.797E-09	7.537E-09	4.922E-09	2.841E-09	1.927E-09	1.427E-09	1.141E-09	9.401E-10	7.849E-10	6.697E-10	5.812E-10
E	7.953E-09	7.866E-09	5.047E-09	2.850E-09	1.910E-09	1.403E-09	1.091E-09	8.831E-10	7.447E-10	6.393E-10	5.534E-10
ESE	1.185E-08	1.431E-08	9.441E-09	5.521E-09	3.783E-09	2.823E-09	2.223E-09	1.817E-09	1.527E-09	1.310E-09	1.142E-09
SE	1.500E-08	8.847E-09	6.534E-09	4.347E-09	3.071E-09	2.341E-09	1.875E-09	1.553E-09	1.294E-09	1.101E-09	9.538E-10
SSE	4.255E-08	2.273E-08	1.444E-08	8.063E-09	5.370E-09	3.927E-09	3.045E-09	2.450E-09	2.043E-09	1.737E-09	1.502E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES

DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	8.527E-08	8.286E-08	5.434E-08	4.118E-08	3.929E-08	2.194E-08	8.358E-09	4.148E-09	2.605E-09	1.848E-09
SSW	3.704E-08	3.777E-08	2.917E-08	2.636E-08	2.090E-08	1.155E-08	4.387E-09	2.108E-09	1.303E-09	9.122E-10
SW	9.593E-08	1.154E-07	6.443E-08	3.721E-08	2.534E-08	1.490E-08	6.185E-09	3.231E-09	2.097E-09	1.452E-09
WSW	7.109E-08	1.224E-07	6.789E-08	3.741E-08	2.449E-08	1.282E-08	5.404E-09	2.697E-09	1.694E-09	1.201E-09
W	1.903E-07	1.867E-07	9.322E-08	5.161E-08	3.349E-08	1.562E-08	6.113E-09	3.065E-09	1.897E-09	1.331E-09
WNW	1.270E-07	1.999E-07	1.128E-07	6.817E-08	4.568E-08	2.275E-08	9.465E-09	4.979E-09	3.241E-09	2.328E-09
NW	1.416E-07	2.613E-07	1.433E-07	7.881E-08	5.063E-08	2.354E-08	8.795E-09	4.299E-09	2.705E-09	1.912E-09
NNW	1.499E-07	1.665E-07	1.256E-07	8.992E-08	6.027E-08	2.857E-08	1.055E-08	5.197E-09	3.342E-09	2.425E-09
N	1.930E-07	1.327E-07	8.456E-08	5.644E-08	4.052E-08	2.210E-08	1.308E-08	6.499E-09	4.150E-09	2.980E-09
NNE	1.083E-07	7.378E-08	4.731E-08	3.268E-08	2.593E-08	2.712E-08	1.308E-08	8.235E-09	5.455E-09	3.894E-09
NE	4.120E-08	3.053E-08	1.889E-08	1.258E-08	9.609E-09	9.195E-09	4.335E-09	2.154E-09	1.395E-09	1.005E-09
ENE	9.940E-09	1.306E-08	1.025E-08	7.313E-09	5.832E-09	5.988E-09	2.897E-09	1.446E-09	9.385E-10	6.710E-10
E	2.571E-08	2.476E-08	1.665E-08	1.113E-08	8.367E-09	6.632E-09	2.921E-09	1.413E-09	8.898E-10	6.387E-10
ESE	3.704E-08	3.506E-08	2.348E-08	1.594E-08	1.227E-08	1.160E-08	5.620E-09	2.839E-09	1.823E-09	1.312E-09
SE	7.229E-08	5.569E-08	3.590E-08	2.407E-08	1.731E-08	9.187E-09	4.266E-09	2.349E-09	1.546E-09	1.104E-09
SSE	1.345E-07	8.197E-08	5.040E-08	4.006E-08	4.587E-08	2.345E-08	8.282E-09	3.959E-09	2.467E-09	1.741E-09



## CORRECTED FOR OPEN TERRAIN RECIRCULATION

## ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

SECTOR	DISTANCE IN MILES									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000
S	7.343E-10	4.792E-09	9.291E-08	7.999E-08	8.791E-08	7.103E-08	5.662E-08	4.570E-08	3.757E-08	4.000
SSW	1.523E-09	2.077E-09	3.973E-08	4.304E-08	4.003E-08	3.319E-08	2.698E-08	2.795E-08	2.754E-08	4.116E-08
SW	2.758E-09	3.968E-08	9.458E-08	1.247E-07	1.413E-07	9.059E-08	6.330E-08	4.708E-08	3.665E-08	2.954E-08
WSW	1.706E-10	1.234E-08	5.603E-08	1.115E-07	1.607E-07	9.816E-08	6.634E-08	4.813E-08	3.677E-08	2.919E-08
W	3.281E-10	4.831E-08	2.046E-07	2.500E-07	2.188E-07	1.344E-07	9.119E-08	6.636E-08	5.078E-08	3.301E-08
WNW	1.989E-10	1.386E-08	1.092E-07	1.965E-07	2.557E-07	1.581E-07	1.088E-07	8.445E-08	6.832E-08	4.401E-08
NW	1.511E-08	3.687E-08	1.070E-07	1.95E-07	3.561E-07	2.095E-07	1.388E-07	1.014E-07	7.796E-08	4.975E-08
N	4.927E-08	9.734E-08	1.516E-07	1.747E-07	1.808E-07	1.509E-07	1.264E-07	1.070E-07	9.324E-08	5.911E-08
NNE	3.956E-08	1.051E-07	1.213E-07	9.886E-08	7.41E-08	5.914E-08	4.741E-08	3.886E-08	3.251E-08	2.708E-08
NE	2.684E-09	3.132E-08	4.720E-08	4.152E-08	3.152E-08	2.415E-08	1.891E-08	1.519E-08	1.250E-08	8.988E-09
ENE	1.147E-09	5.163E-09	9.476E-09	1.265E-08	1.412E-08	1.240E-08	1.935E-08	8.626E-09	7.281E-09	6.239E-09
E	1.316E-09	1.534E-08	2.761E-08	2.942E-08	2.637E-08	2.112E-08	1.674E-08	1.348E-08	1.108E-08	7.923E-09
ESE	2.749E-10	2.022E-08	4.073E-08	4.258E-08	3.709E-08	2.961E-08	2.358E-08	1.913E-08	1.587E-08	1.342E-08
SE	1.146E-08	6.133E-08	7.977E-08	7.204E-08	5.902E-08	4.556E-08	3.605E-08	2.909E-08	2.397E-08	2.014E-08
SSE	4.094E-08	1.513E-07	1.489E-07	1.151E-07	8.338E-08	6.404E-08	5.051E-08	4.083E-08	3.376E-08	4.454E-08

## ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

BEARING	DISTANCE IN MILES									
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	50.000
S	3.592E-08	2.273E-08	1.408E-08	7.833E-09	5.326E-09	3.930E-09	3.011E-09	2.403E-09	1.987E-09	1.435E-09
SSW	1.049E-08	1.182E-08	7.464E-09	4.110E-09	2.740E-09	1.980E-09	1.511E-09	1.201E-09	9.837E-10	8.243E-10
SW	2.207E-08	1.566E-08	1.013E-08	5.757E-09	4.016E-09	3.015E-09	2.381E-09	1.907E-09	1.572E-09	1.135E-09
WSW	2.061E-08	1.247E-08	8.625E-09	5.190E-09	3.421E-09	2.472E-09	1.894E-09	1.508E-09	1.236E-09	1.036E-09
W	2.763E-08	1.458E-08	9.890E-09	5.876E-09	4.007E-09	2.893E-09	2.213E-09	1.763E-09	1.447E-09	1.215E-09
WNW	3.821E-08	2.177E-08	1.490E-08	9.109E-09	6.239E-09	4.637E-09	3.642E-09	2.949E-09	2.441E-09	2.060E-09
NW	4.176E-08	2.230E-08	1.466E-08	8.433E-09	5.581E-09	4.051E-09	3.139E-09	2.516E-09	2.072E-09	1.745E-09
NNW	5.005E-08	2.771E-08	1.780E-08	1.007E-08	6.756E-09	4.958E-09	3.879E-09	3.150E-09	2.565E-09	2.263E-09
N	3.491E-08	2.077E-08	1.617E-08	1.211E-08	9.300E-09	8.120E-09	6.335E-09	5.115E-09	4.238E-09	3.589E-09
NNE	2.572E-08	3.383E-08	2.181E-08	1.240E-08	8.331E-09	6.119E-09	4.752E-09	3.183E-09	2.698E-09	2.326E-09
NE	9.277E-09	1.133E-08	7.280E-09	4.126E-09	2.773E-09	2.038E-09	1.606E-09	1.308E-09	1.091E-09	9.250E-10
ENE	5.741E-09	7.388E-09	4.791E-09	2.766E-09	1.823E-09	1.331E-09	1.049E-09	8.516E-10	7.009E-10	5.896E-10
E	7.902E-09	7.791E-09	4.983E-09	2.796E-09	1.862E-09	1.359E-09	1.051E-09	8.450E-10	7.082E-10	5.198E-10
ESE	1.178E-08	1.416E-08	9.304E-09	5.401E-09	3.673E-09	2.721E-09	2.127E-09	1.726E-09	1.439E-09	1.225E-09
SE	1.492E-08	8.769E-09	6.456E-09	4.267E-09	2.955E-09	2.269E-09	1.806E-09	1.487E-09	1.230E-09	1.041E-09
SSE	4.227E-08	2.251E-08	1.425E-08	7.904E-09	5.229E-09	3.799E-09	2.926E-09	2.346E-09	1.938E-09	1.636E-09

## CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES									
	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	8.517E-08	8.265E-08	5.610E-08	4.092E-08	3.896E-08	2.162E-08	8.107E-09	3.935E-09	2.418E-09	1.679E-09
SSW	3.698E-08	3.766E-08	2.902E-08	2.616E-08	2.069E-08	1.137E-08	4.246E-09	1.995E-09	1.207E-09	8.267E-10
SW	9.578E-08	1.151E-07	6.409E-08	3.692E-08	2.508E-08	1.463E-08	5.955E-09	3.028E-09	1.915E-09	1.327E-09
WSW	7.098E-08	1.220E-07	6.754E-08	3.713E-08	7.424E-08	1.257E-08	5.167E-09	2.494E-09	1.515E-09	1.039E-09
W	1.900E-07	1.882E-07	9.277E-08	5.125E-08	3.319E-08	1.540E-08	5.937E-09	2.918E-09	1.771E-09	1.218E-09
WNW	1.268E-07	1.993E-07	1.123E-07	6.768E-08	4.525E-08	2.237E-08	9.121E-09	4.654E-09	2.954E-09	2.264E-09
NW	1.498E-07	1.661E-07	1.427E-07	7.832E-08	5.021E-08	2.323E-08	1.549E-09	4.094E-09	2.525E-09	1.749E-09
N	1.929E-07	1.325E-07	8.429E-08	5.618E-08	4.028E-08	2.187E-08	1.204E-08	7.889E-09	5.130E-09	3.598E-09
NNE	1.082E-07	7.361E-08	4.712E-08	3.251E-08	2.573E-08	2.669E-08	4.225E-09	2.061E-09	3.849E-09	2.704E-09
NE	4.115E-08	3.047E-08	1.882E-08	1.251E-08	9.545E-09	9.074E-09	4.225E-09	2.061E-09	1.310E-09	9.271E-10
ENE	9.928E-07	1.303E-08	1.020E-08	7.268E-09	5.783E-09	5.868E-09	2.784E-09	1.350E-09	8.507E-10	5.911E-10
E	2.569E-07	2.471E-08	1.660E-08	1.108E-08	8.319E-09	6.568E-09	2.867E-09	1.370E-09	8.516E-10	6.038E-10
ESE	3.699E-08	3.499E-08	2.341E-08	1.587E-08	1.219E-08	1.147E-08	5.501E-09	2.737E-09	1.731E-09	1.228E-09
SE	7.224E-08	5.560E-08	3.580E-08	2.398E-08	1.723E-08	9.107E-09	4.188E-09	2.278E-09	1.480E-09	1.043E-09
SSE	1.344E-07	8.184E-08	5.025E-08	3.989E-08	2.560E-08	2.37E-08	8.125E-09	3.831E-09	2.356E-09	1.460E-09

ERP ELEVATED STACK RELEASE - APR-JUNE 1990  
8,000 DAY DECAY, DEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)		DISTANCE IN MILES									
SECTOR	0.250	0.500	0.750	1.000	500	2,000	2,500	3,000	3,500	4,000	4,500
S	7.344E-10	4.752E-08	9.136E-08	8.629E-08	8.629E-08	6.32E-08	5.489E-08	4.401E-08	3.596E-08	3.847E-08	3.929E-08
SSW	1.523E-09	2.060E-08	3.910E-08	4.241E-08	3.937E-08	3.245E-08	2.622E-08	2.109E-08	1.663E-08	2.275E-08	1.972E-08
SW	2.758E-09	3.933E-08	9.313E-08	1.233E-07	1.390E-07	8.832E-08	6.127E-08	4.531E-08	3.510E-08	2.817E-08	2.325E-08
WSW	1.706E-10	1.224E-08	5.555E-08	1.110E-07	1.587E-07	9.42E-08	6.452E-08	4.653E-08	3.539E-08	2.798E-08	2.280E-08
W	3.281E-10	4.614E-08	2.034E-07	2.470E-07	2.143E-07	1.306E-07	8.807E-08	6.375E-08	4.857E-08	3.845E-08	3.134E-08
NNW	1.989E-10	1.380E-08	1.069E-07	1.948E-07	2.521E-07	1.552E-07	1.060E-07	8.214E-08	6.639E-08	5.278E-08	4.320E-08
NW	1.511E-08	3.657E-08	1.061E-07	2.180E-07	3.520E-07	2.056E-07	1.355E-07	9.862E-08	7.557E-08	5.917E-08	4.780E-08
NNW	4.928E-08	9.651E-08	1.491E-07	1.725E-07	1.778E-07	1.473E-07	1.228E-07	1.037E-07	9.024E-08	7.031E-08	5.661E-08
N	1.048E-07	1.889E-07	2.092E-07	1.749E-07	1.5E-07	1.040E-07	8.256E-08	5.82E-08	4.379E-08	3.491E-08	2.819E-08
NNE	3.957E-08	1.042E-07	1.189E-07	9.760E-08	7.357E-08	5.753E-08	4.595E-08	3.53E-08	2.730E-08	2.659E-08	2.297E-08
NE	2.685E-09	3.106E-08	4.627E-08	4.060E-08	3.073E-08	2.344E-08	1.827E-08	1.41E-08	1.197E-08	1.001E-08	8.536E-09
ENE	1.147E-09	5.120E-09	9.370E-09	1.256E-08	1.397E-08	1.218E-08	1.010E-08	8.66E-09	7.023E-09	5.989E-09	5.187E-09
E	1.316E-09	1.521E-08	2.717E-08	2.900E-08	2.590E-08	2.062E-08	1.623E-08	1.298E-08	1.060E-08	8.829E-09	7.493E-09
ESE	2.750E-10	2.006E-08	4.006E-08	4.189E-08	3.638E-08	2.887E-08	2.285E-08	1.844E-08	1.521E-08	1.281E-08	1.099E-08
SE	1.147E-08	6.080E-08	7.831E-08	7.069E-08	5.681E-08	4.439E-08	3.493E-08	2.804E-08	2.298E-08	1.922E-08	1.634E-08
SSE	4.095E-08	1.499E-07	1.459E-07	1.126E-07	8.140E-08	6.230E-08	4.892E-08	3.937E-08	3.241E-08	2.499E-08	1.865E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

BEARING	5,000	7,500	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
S	4.18E-08	2.071E-08	1.284E-08	6.795E-09	4.383E-09	3.097E-09	2.294E-09	1.777E-09	1.434E-09	1.186E-09	9.939E-10
SSW	1.773E-08	1.115E-08	6.856E-09	3.584E-09	2.267E-09	1.588E-09	1.108E-09	9.173E-10	7.363E-10	6.057E-10	5.082E-10
SW	2.097E-08	1.483E-08	9.347E-09	5.043E-09	3.316E-09	2.369E-09	1.65E-09	1.424E-09	1.150E-09	9.521E-10	8.030E-10
WSW	1.966E-08	1.173E-08	7.939E-09	4.612E-09	2.945E-09	2.077E-09	1.45E-09	1.220E-09	9.859E-10	8.159E-10	6.861E-10
W	2.616E-08	1.364E-08	9.144E-09	5.176E-09	3.364E-09	2.358E-09	1.7E-09	1.370E-09	1.103E-09	9.097E-10	7.652E-10
NNW	3.669E-08	2.040E-08	1.360E-08	7.847E-09	5.014E-09	3.535E-09	2.694E-09	2.130E-09	1.728E-09	1.431E-09	1.208E-09
NW	3.992E-08	2.074E-08	1.325E-08	7.206E-09	4.529E-09	3.151E-09	2.365E-09	1.851E-09	1.491E-09	1.21E-09	1.037E-09
NNW	4.770E-08	2.571E-08	1.604E-08	8.555E-09	5.370E-09	3.728E-09	2.780E-09	2.172E-09	1.781E-09	1.483E-09	1.251E-09
N	3.304E-08	1.939E-08	1.505E-08	1.133E-08	9.216E-09	7.294E-09	5.565E-09	4.407E-09	3.588E-09	2.991E-09	2.541E-09
NNE	2.470E-08	3.286E-08	2.057E-08	1.109E-08	7.069E-09	4.973E-09	3.723E-09	2.910E-09	2.347E-09	1.940E-09	1.634E-09
NE	8.824E-09	1.090E-08	6.799E-09	3.650E-09	2.324E-09	1.633E-09	1.246E-09	9.900E-10	8.081E-10	6.719E-10	5.692E-10
ENE	5.498E-09	7.184E-09	4.536E-09	2.443E-09	1.533E-09	1.063E-09	8.017E-10	6.295E-10	5.050E-10	4.158E-10	3.490E-10
E	7.464E-09	7.376E-09	4.585E-09	2.434E-09	1.523E-09	1.058E-09	7.823E-10	6.049E-10	4.889E-10	4.046E-10	3.396E-10
ESE	1.120E-08	1.366E-08	8.726E-09	4.778E-09	3.037E-09	2.127E-09	1.584E-09	1.231E-09	9.870E-10	8.109E-10	6.790E-10
SE	1.411E-08	8.167E-09	5.966E-09	3.911E-09	2.725E-09	2.056E-09	1.633E-09	1.337E-09	1.066E-09	9.025E-10	7.643E-10
SSE	4.071E-08	2.104E-08	1.289E-08	6.776E-09	4.275E-09	2.985E-09	2.223E-09	1.731E-09	1.392E-09	1.147E-09	9.640E-10

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES										
DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	8.387E-08	8.100E-08	5.439E-08	3.922E-08	3.715E-08	2.020E-08	7.066E-09	3.119E-09	1.794E-09	1.189E-09
SSW	3.46E-08	3.697E-08	2.823E-08	2.529E-08	1.988E-08	1.070E-08	3.726E-09	1.606E-09	9.235E-10	6.083E-10
SW	9.458E-08	1.130E-07	6.210E-08	3.538E-08	2.386E-08	1.376E-08	5.232E-09	2.40E-09	1.433E-09	9.557E-10
WSW	7.057E-08	1.203E-07	6.576E-08	3.576E-08	2.317E-08	1.181E-08	4.610E-09	2.101E-09	1.220E-09	8.189E-10
W	1.882E-07	1.844E-07	8.968E-08	4.905E-08	3.153E-08	1.442E-08	5.253E-09	2.386E-09	1.379E-09	9.134E-10
NNW	1.260E-07	1.963E-07	1.096E-07	6.571E-08	4.363E-08	2.100E-08	7.865E-09	3.592E-09	2.137E-09	1.437E-09
NW	1.404E-07	2.572E-07	1.394E-07	7.591E-08	4.825E-08	2.167E-08	7.359E-09	3.204E-09	1.861E-09	1.236E-09
NNW	1.478E-07	1.631E-07	1.217E-07	8.649E-08	5.737E-08	2.630E-08	8.803E-09	3.787E-09	2.197E-09	1.485E-09
N	1.894E-07	1.293E-07	8.158E-08	5.384E-08	3.827E-08	2.050E-08	1.122E-08	7.115E-09	4.426E-09	3.001E-09
NNE	1.061E-07	7.178E-08	4.567E-08	3.128E-08	2.468E-08	1.141E-08	5.032E-09	2.928E-09	1.947E-09	1.189E-09
NE	4.037E-08	2.969E-08	1.819E-08	1.190E-08	9.081E-09	6.616E-09	3.760E-09	1.662E-09	9.936E-10	6.742E-10
ENE	9.844E-09	1.286E-08	9.959E-09	7.013E-09	5.540E-09	5.632E-09	2.504E-09	1.084E-09	6.309E-10	4.174E-10
E	2.533E-08	2.424E-08	1.610E-08	1.060E-08	7.878E-09	6.155E-09	2.508E-09	1.072E-09	6.114E-10	4.055E-10
ESE	3.643E-08	3.427E-08	2.269E-08	1.522E-08	1.161E-09	1.092E-09	4.982E-09	2.152E-09	1.239E-09	8.142E-10
SE	7.103E-08	5.437E-08	3.470E-08	2.299E-08	1.637E-08	8.510E-09	3.841E-09	2.065E-09	1.326E-09	9.056E-10
SSE	1.320E-07	7.983E-08	4.867E-08	3.843E-08	4.403E-08	2.175E-08	7.024E-09	3.024E-09	1.742E-09	1.152E-09



ERP ELEVATED STACK RELEASE - APR-JUNE 1990  
CORRECTED FOR OPEN TERRAIN RECURVULATION

***** RELATIVE DEPOSITION PER UNIT AREA (M**2) AT FIXED POINTS BY DOWNWIND SECTORS *****											
DIRECTION		DISTANCES IN MILES									
FROM SITE		0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00
S		6.534E-09	5.383E-09	4.677E-09	3.288E-09	1.630E-09	1.008E-09	6.839E-10	4.923E-10	3.690E-10	2.919E-10
SSW		1.986E-09	1.770E-09	1.734E-09	1.329E-09	7.031E-10	4.458E-10	3.066E-10	2.222E-10	2.053E-10	1.553E-10
SW		3.584E-09	2.906E-09	2.455E-09	1.687E-09	1.353E-09	7.277E-10	4.486E-10	3.038E-10	2.193E-10	1.658E-10
WSW		1.336E-09	1.253E-09	1.311E-09	1.978E-09	1.032E-09	5.575E-10	3.440E-10	2.330E-10	1.681E-10	1.271E-10
W		4.009E-10	4.621E-09	4.343E-09	2.858E-09	1.378E-09	7.411E-10	4.557E-10	3.077E-10	2.215E-10	1.671E-10
WNW		7.258E-10	9.729E-10	4.305E-09	3.082E-09	1.939E-09	9.723E-10	5.743E-10	3.794E-10	2.812E-10	2.155E-10
NW		2.982E-09	2.675E-09	2.643E-09	4.248E-09	2.624E-09	1.305E-09	7.703E-10	5.100E-10	3.674E-10	2.828E-10
NNW		1.041E-08	8.370E-09	6.965E-09	4.724E-09	3.728E-09	2.002E-09	1.239E-09	9.593E-10	6.802E-10	5.122E-10
N		2.458E-08	1.896E-08	1.459E-08	9.202E-09	4.138E-09	2.450E-09	1.625E-09	1.155E-09	8.605E-10	6.633E-10
NNE		1.161E-08	8.781E-09	6.484E-09	3.914E-09	1.682E-09	9.743E-10	6.381E-10	4.505E-10	3.344E-10	2.574E-10
NE		2.918E-09	2.289E-09	1.821E-09	1.186E-09	5.392E-10	3.305E-10	2.209E-10	1.577E-10	1.177E-10	9.085E-11
ENE		6.631E-10	5.967E-10	5.921E-10	4.576E-10	2.895E-10	1.547E-10	1.065E-10	7.722E-11	5.810E-11	4.498E-11
E		2.291E-09	1.910E-09	1.693E-09	1.209E-09	6.067E-10	3.769E-10	2.565E-10	1.849E-10	1.387E-10	1.072E-10
ESE		2.629E-09	2.248E-09	2.073E-09	1.525E-09	7.830E-10	4.908E-10	3.356E-10	2.424E-10	1.821E-10	1.409E-10
SE		7.472E-09	5.942E-09	4.849E-09	3.232E-09	1.532E-09	9.288E-10	6.241E-10	4.468E-10	3.340E-10	2.579E-10
SSE		1.422E-08	1.091E-08	8.304E-09	5.177E-09	2.302E-09	1.355E-09	8.962E-10	6.360E-10	4.734E-10	4.285E-10
DIRECTION		DISTANCES IN MILES									
FROM SITE		5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00
S		2.157E-10	1.246E-10	9.056E-11	4.466E-11	2.826E-11	2.159E-11	1.547E-11	1.162E-11	9.466E-12	7.543E-12
SSW		9.858E-11	5.952E-11	3.895E-11	2.177E-11	1.567E-11	1.059E-11	7.587E-12	5.698E-12	4.492E-12	3.588E-12
SW		1.049E-10	6.359E-11	4.180E-11	2.354E-11	1.496E-11	1.152E-11	8.192E-12	6.190E-12	4.813E-12	3.844E-12
WSW		7.997E-11	5.196E-11	3.474E-11	2.271E-11	1.374E-11	9.214E-12	6.652E-12	4.995E-12	3.884E-12	3.102E-12
W		1.052E-10	4.755E-11	4.852E-11	2.794E-11	1.915E-11	1.297E-11	9.293E-12	6.978E-12	5.426E-12	4.334E-12
WNW		1.483E-10	8.516E-11	5.931E-11	3.491E-11	2.461E-11	1.584E-11	1.093E-11	8.207E-12	6.411E-12	5.121E-12
NW		1.961E-10	1.138E-10	7.976E-11	5.036E-11	3.077E-11	2.063E-11	1.471E-11	1.105E-11	8.591E-12	6.862E-12
NNW		3.347E-10	1.732E-10	1.140E-10	6.436E-11	4.094E-11	2.784E-11	2.303E-11	1.683E-11	1.306E-11	1.043E-11
N		4.246E-10	2.032E-10	1.253E-10	6.773E-11	8.506E-11	6.013E-11	4.302E-11	3.230E-11	2.512E-11	2.007E-11
NNE		1.649E-10	1.905E-10	1.189E-10	6.239E-11	3.828E-11	2.567E-11	1.836E-11	1.376E-11	1.068E-11	8.519E-12
NE		5.813E-11	6.352E-11	3.939E-11	2.050E-11	1.255E-11	8.412E-12	6.054E-12	4.546E-12	3.535E-12	2.823E-12
ENE		2.873E-11	2.771E-11	1.954E-11	1.165E-11	7.429E-12	4.964E-12	3.521E-12	2.454E-12	1.910E-12	1.528E-12
E		6.853E-11	5.203E-11	3.469E-11	1.976E-11	1.254E-11	8.474E-12	6.093E-12	4.585E-12	3.569E-12	3.154E-12
ESE		9.001E-11	8.108E-11	5.642E-11	3.330E-11	2.123E-11	1.424E-11	1.014E-11	7.554E-12	5.831E-12	4.642E-12
SE		1.649E-10	7.875E-11	4.844E-11	2.607E-11	1.635E-11	1.149E-11	8.703E-12	1.161E-11	9.075E-12	7.320E-12
SSE		3.196E-10	2.285E-10	1.400E-10	7.174E-11	4.363E-11	2.924E-11	2.093E-11	1.570E-11	1.219E-11	9.732E-12
***** RELATIVE DEPOSITION PER UNIT AREA (M**2) BY DOWNWIND SECTORS *****											
DIRECTION		SEGMENT BOUNDARIES IN MILES									
FROM SITE		5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S		4.217E-09	1.722E-09	6.936E-10	3.748E-10	2.557E-10	1.253E-10	4.535E-11	2.092E-11	1.190E-11	7.600E-12
SSW		1.562E-09	7.279E-10	3.099E-10	1.910E-10	1.230E-10	5.906E-11	2.288E-11	1.074E-11	5.778E-12	3.611E-12
SW		2.214E-09	1.149E-09	4.651E-10	2.231E-10	1.312E-10	6.308E-11	2.379E-11	1.111E-11	6.237E-12	3.870E-12
WSW		1.595E-09	1.031E-09	3.565E-10	1.710E-10	1.004E-10	5.053E-11	2.140E-11	9.396E-12	5.045E-12	3.123E-12
W		3.745E-09	1.424E-09	4.726E-10	2.254E-10	1.321E-10	6.080E-11	2.860E-11	1.315E-11	7.048E-12	4.363E-12
WNW		3.048E-09	1.763E-09	6.025E-10	2.842E-10	1.769E-10	8.770E-11	3.576E-11	1.621E-11	8.300E-12	5.155E-12
NW		3.364E-09	2.399E-09	8.087E-10	3.759E-10	2.330E-10	1.170E-10	4.819E-11	2.097E-11	1.116E-11	6.907E-12
NNW		6.281E-09	3.182E-09	1.330E-09	6.959E-10	4.107E-10	1.828E-10	6.499E-11	2.941E-11	1.717E-11	1.050E-11
N		1.317E-08	4.513E-09	1.657E-09	8.696E-10	5.288E-10	2.178E-10	8.823E-11	5.993E-11	3.263E-11	2.020E-11
NNE		5.852E-09	1.864E-09	6.527E-10	3.382E-10	2.053E-10	1.530E-10	6.423E-11	2.611E-11	1.390E-11	8.576E-12
NE		1.643E-09	5.938E-10	2.248E-10	1.189E-10	7.242E-11	5.159E-11	2.116E-11	8.571E-12	4.592E-12	2.842E-12
ENE		5.333E-10	2.516E-10	1.076E-10	5.857E-11	3.584E-11	2.431E-11	1.153E-11	5.044E-12	2.551E-12	1.538E-12
E		1.526E-09	6.383E-10	2.599E-10	1.399E-10	8.545E-11	4.799E-11	1.987E-11	8.606E-12	4.629E-12	3.062E-12
ESE		1.868E-09	8.180E-10	3.397E-10	1.836E-10	1.123E-10	7.211E-11	3.307E-11	1.447E-11	7.637E-12	4.675E-12
SE		4.373E-09	1.642E-09	6.344E-10	3.372E-10	2.056E-10	8.443E-11	2.672E-11	1.167E-11	9.814E-12	7.363E-12
SSE		7.494E-09	2.520E-09	9.146E-10	5.028E-10	3.735E-10	2.094E-10	7.441E-11	2.976E-11	1.586E-11	9.797E-12



ERP ELEVATED STACK RELEASE - APR-JUNE 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	X/Q (SEC/CUB.METER)	X/Q (SEC/CUB.METER)	X/Q (SEC.CUB.METER)	D/Q (PER SQ.METER)
				NO DECAY	2.260 DAY DECAY	8.000 DAY DECAY	
				UNDEPLETED	UNDEPLETED	DEPLETED	
A	SITE BOUNDARY	S	0.80	9.531E-08	9.521E-08	9.360E-08	4.375E-09
A	SITE BOUNDARY	SSW	0.82	1287.	4.139E-08	4.067E-08	1.622E-09
A	SITE BOUNDARY	SW	0.98	1327.	1.223E-07	1.208E-07	1.763E-09
A	SITE BOUNDARY	WSW	0.93	1569.	9.590E-08	9.575E-08	1.424E-09
A	SITE BOUNDARY	W	0.91	1468.	2.435E-07	2.407E-07	3.244E-09
A	SITE BOUNDARY	WNW	0.94	1509.	1.791E-07	1.789E-07	3.438E-09
A	SITE BOUNDARY	NW	0.81	1307.	1.339E-07	1.329E-07	2.505E-09
A	SITE BOUNDARY	NNW	0.69	1106.	1.357E-07	1.334E-07	7.210E-09
A	SITE BOUNDARY	N	0.67	1086.	2.082E-07	2.045E-07	1.562E-08
A	SITE BOUNDARY	NNE	0.60	965.	1.145E-07	1.128E-07	7.709E-09
A	SITE BOUNDARY	NE	0.62	1005.	4.133E-08	4.067E-08	2.015E-09
A	SITE BOUNDARY	ENE	0.59	945.	6.192E-09	6.120E-09	5.859E-10
A	SITE BOUNDARY	E	0.53	845.	1.670E-08	1.653E-08	1.876E-09
A	SITE BOUNDARY	ESE	0.54	865.	2.384E-08	2.358E-08	2.201E-09
A	SITE BOUNDARY	SE	0.65	1046.	7.363E-08	7.242E-08	5.185E-09
A	SITE BOUNDARY	SSE	0.81	1307.	1.386E-07	1.355E-07	7.363E-09
A	NEAR. RESIDENCE	SW	1.30	2092.	1.417E-07	1.395E-07	1.822E-09
A	NEAR. RESIDENCE	WSW	1.30	2092.	1.543E-07	1.524E-07	1.379E-09
A	NEAR. RESIDENCE	W	1.00	1609.	2.504E-07	2.470E-07	2.850E-09
A	NEAR. RESIDENCE	WNW	1.60	2576.	2.305E-07	2.299E-07	1.659E-09
A	NEAR. RESIDENCE	NW	0.90	1448.	1.740E-07	1.727E-07	4.726E-09
A	NEAR. RESIDENCE	NNW	1.90	3059.	1.571E-07	1.532E-07	2.238E-09
A	NEAR. RESIDENCE	N	3.00	4829.	6.862E-08	6.581E-08	1.155E-09
A	NEAR. RESIDENCE	NNE	2.40	3863.	4.965E-08	4.797E-08	6.894E-10
A	NEAR. RESIDENCE	ENE	1.70	2737.	1.362E-08	1.339E-08	1.984E-10
A	NEAR. RESIDENCE	E	1.80	2898.	2.322E-08	2.288E-08	4.396E-10
A	NEAR. RESIDENCE	ESE	2.00	3220.	2.967E-08	2.866E-08	4.906E-10
A	NEAR. RESIDENCE	SE	2.20	3542.	4.145E-08	4.024E-08	7.842E-10
A	NEAR. RESIDENCE	NNW	3.50	5634.	9.366E-08	9.019E-08	6.798E-10
A	NEAREST COM	SW	1.40	2253.	1.430E-07	1.405E-07	1.564E-09
A	NEAREST GARDEN	WSW	1.30	2092.	1.543E-07	1.524E-07	1.379E-09
A	NEAREST GARDEN	W	2.30	3702.	1.059E-07	1.021E-07	5.460E-10
A	NEAREST GARDEN	NNW	1.60	2575.	2.307E-07	2.264E-07	1.660E-09
A	NEAREST GARDEN	NW	0.90	1448.	1.740E-07	1.727E-07	4.726E-09
A	NEAREST GARDEN	NNW	1.90	3058.	1.571E-07	1.532E-07	7.40E-09
A	NEAREST GARDEN	NNE	2.70	4345.	4.386E-08	4.227E-08	5.512E-10
A	NEAREST GARDEN	ENE	1.70	2736.	1.362E-08	1.340E-08	1.985E-10
A	NEAREST GARDEN	E	1.80	2897.	2.323E-08	2.269E-08	4.399E-10
A	NEAREST GARDEN	ESE	2.40	3863.	2.472E-08	2.391E-08	3.602E-10
A	NEAREST GARDEN	SE	3.00	4828.	2.919E-08	2.804E-08	4.468E-10

Atmospheric Diffusion Estimates  
Elevated Releases  
January-June 1990



ERP ELEVATED STACK RELEASE - JAN-JUNE 1990  
NO DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000
S	8.277E-09	5.148E-08	8.766E-08	9.047E-08	8.062E-08	6.513E-08	5.194E-08	4.203E-08	3.461E-08	3.731E-08
SSW	1.821E-09	2.518E-08	4.609E-08	4.864E-08	4.427E-08	3.632E-08	2.94E-08	3.004E-08	2.911E-08	2.473E-08
SW	1.466E-09	2.790E-08	7.535E-08	1.099E-07	1.357E-07	8.796E-08	6.175E-08	4.603E-08	3.588E-08	2.894E-08
WSW	1.287E-10	1.013E-08	4.347E-08	8.313E-08	1.199E-07	7.450E-08	5.120E-08	3.765E-08	2.909E-08	2.333E-08
W	3.377E-10	3.760E-08	1.425E-07	1.725E-07	1.540E-07	9.561E-08	6.548E-08	4.801E-08	3.698E-08	2.956E-08
NNW	1.601E-10	1.194E-08	7.644E-08	1.380E-07	1.839E-07	1.138E-07	7.797E-08	6.034E-08	4.871E-08	3.884E-08
NW	7.742E-09	2.590E-08	9.428E-08	1.979E-07	3.291E-07	1.950E-07	9.575E-08	7.414E-08	5.853E-08	4.771E-08
NNW	3.047E-08	5.770E-08	9.038E-08	1.100E-07	1.288E-07	1.198E-07	1.105E-07	1.005E-07	9.231E-08	7.298E-08
N	5.788E-08	1.203E-07	1.369E-07	1.202E-07	9.800E-08	8.183E-08	6.825E-08	5.639E-08	4.742E-08	4.055E-08
NNE	2.169E-08	6.029E-08	7.763E-08	7.514E-08	6.929E-08	5.975E-08	5.018E-08	4.241E-08	3.624E-08	3.136E-08
NE	3.121E-09	2.240E-08	4.004E-08	4.748E-08	5.037E-08	4.492E-08	3.832E-08	3.256E-08	2.789E-08	2.416E-08
ENE	5.832E-10	2.891E-09	9.370E-09	1.563E-08	1.971E-08	1.822E-08	1.573E-08	1.345E-08	1.157E-08	1.006E-08
E	6.845E-10	8.827E-09	1.893E-08	3.320E-08	2.403E-08	2.087E-08	1.750E-08	1.471E-08	1.252E-08	1.080E-08
ESE	1.817E-10	1.440E-08	3.297E-08	8.188E-08	3.672E-08	3.070E-08	2.512E-08	2.074E-08	1.740E-08	1.484E-08
SE	5.927E-09	3.700E-08	5.696E-08	5.869E-08	5.303E-08	4.360E-08	3.388E-08	2.903E-08	2.423E-08	2.059E-08
SSE	3.125E-08	1.112E-07	1.216E-07	1.037E-07	8.205E-08	6.478E-08	5.164E-08	4.193E-08	3.479E-08	2.927E-08

BEARING	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)									
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000
S	3.329E-08	2.033E-08	1.298E-08	7.281E-09	4.979E-09	3.701E-09	2.863E-09	2.307E-09	1.926E-09	1.661E-09
SSW	1.896E-08	1.159E-08	7.314E-09	4.040E-09	2.699E-09	1.962E-09	1.210E-09	9.994E-10	8.488E-10	7.272E-10
SW	2.160E-08	1.562E-08	1.016E-08	5.874E-09	4.188E-09	3.205E-09	2.586E-09	2.100E-09	1.754E-09	1.501E-09
WSW	1.689E-08	1.080E-08	7.637E-09	4.718E-09	3.174E-09	2.339E-09	1.827E-09	1.483E-09	1.238E-09	1.057E-09
W	2.044E-08	1.099E-08	7.629E-09	4.700E-09	3.300E-09	2.420E-09	1.876E-09	1.515E-09	1.259E-09	1.070E-09
NNW	2.720E-08	1.549E-08	1.063E-08	6.554E-09	4.541E-09	3.416E-09	2.717E-09	2.229E-09	1.869E-09	1.598E-09
NW	4.026E-08	2.202E-08	1.476E-08	8.761E-09	5.809E-09	4.337E-09	3.233E-09	2.782E-09	2.321E-09	1.979E-09
NNW	3.098E-08	1.933E-08	1.582E-08	1.105E-08	7.532E-09	5.605E-09	4.444E-09	3.654E-09	3.119E-09	2.687E-09
NNE	3.024E-08	1.933E-08	1.582E-08	1.256E-08	1.064E-08	8.886E-09	7.016E-09	5.728E-09	4.795E-09	4.102E-09
NE	3.024E-08	1.933E-08	1.582E-08	1.505E-08	1.020E-08	7.562E-09	5.928E-09	4.830E-09	4.048E-09	3.465E-09
ENE	2.331E-08	1.233E-08	2.022E-08	1.159E-08	7.848E-09	5.908E-09	4.601E-09	3.770E-09	3.166E-09	2.706E-09
E	9.633E-09	1.444E-08	9.542E-09	5.599E-09	3.842E-09	2.872E-09	2.354E-09	1.971E-09	1.654E-09	1.418E-09
ESE	1.014E-08	1.349E-08	8.840E-09	5.133E-09	3.500E-09	2.604E-09	2.046E-09	1.671E-09	1.432E-09	1.246E-09
SE	1.311E-08	1.426E-08	9.350E-09	5.421E-09	3.691E-09	2.741E-09	2.151E-09	1.753E-09	1.469E-09	1.257E-09
SSE	1.551E-08	9.387E-09	7.162E-09	5.017E-09	3.621E-09	2.604E-09	2.273E-09	1.900E-09	1.587E-09	1.354E-09
	4.707E-08	2.633E-08	1.684E-08	9.500E-09	6.370E-09	4.682E-09	3.646E-09	2.955E-09	2.464E-09	2.101E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT										
SEGMENT BOUNDARIES IN MILES										
DISTANCE IN MILES										
DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	8.087E-08	7.593E-08	5.151E-08	3.776E-08	3.610E-08	1.994E-08	7.524E-09	3.706E-09	2.321E-09	1.643E-09
SSW	4.258E-08	4.171E-08	3.148E-08	2.770E-08	2.145E-08	1.133E-08	4.172E-09	1.977E-09	1.215E-09	8.471E-10
SW	8.015E-08	1.087E-07	6.245E-08	3.613E-08	2.457E-08	1.450E-08	7.77E-09	3.219E-09	2.107E-09	1.501E-09
WSW	5.369E-08	9.160E-08	5.201E-08	2.934E-08	1.958E-08	1.075E-08	4.80E-09	2.357E-09	1.888E-09	1.059E-09
W	1.325E-07	1.322E-07	6.633E-08	3.731E-08	2.443E-08	1.160E-08	4.729E-09	2.437E-09	1.521E-09	1.073E-09
NNW	8.945E-08	1.425E-07	8.046E-08	4.627E-08	3.222E-08	1.593E-08	6.566E-09	3.436E-09	2.231E-09	1.601E-09
NW	1.251E-07	2.404E-07	1.336E-07	7.448E-08	4.816E-08	2.285E-08	8.819E-09	4.386E-09	2.790E-09	1.983E-09
NNW	9.183E-08	1.206E-07	1.090E-07	8.730E-08	6.036E-08	2.939E-08	1.128E-08	5.654E-09	3.676E-09	2.686E-09
N	1.265E-07	9.576E-08	6.713E-08	4.737E-08	3.522E-08	2.036E-08	1.243E-08	6.606E-09	5.740E-09	4.110E-09
NNE	7.267E-08	6.627E-08	4.958E-08	3.615E-08	2.565E-08	3.186E-08	1.538E-08	7.612E-09	4.846E-09	3.471E-09
NE	3.942E-08	4.730E-08	3.778E-08	2.781E-08	2.286E-08	2.658E-08	1.184E-08	5.868E-09	3.777E-09	2.711E-09
ENE	1.071E-08	1.814E-08	1.548E-08	1.153E-08	9.499E-09	1.119E-08	5.694E-09	2.923E-09	1.960E-09	1.420E-09
E	1.859E-08	2.244E-08	1.729E-08	1.249E-08	1.010E-08	1.069E-08	5.231E-09	2.620E-09	1.876E-09	1.241E-09
ESE	3.116E-08	3.437E-08	2.486E-08	1.758E-08	1.353E-08	1.182E-08	5.525E-09	2.758E-09	1.756E-09	1.259E-09
SE	5.330E-08	5.010E-08	3.504E-08	2.423E-08	1.776E-08	9.759E-09	4.873E-09	2.809E-09	1.887E-09	1.357E-09
SSE	1.113E-07	7.917E-08	5.127E-08	4.119E-08	4.955E-08	2.672E-08	9.740E-09	4.718E-09	2.966E-09	2.105E-09



ERP ELEVATED STACK RELEASE - JAN-JUNE 1990  
2.260 DAY DECAY, UNDEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

SECTOR	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	8.276E-09	5.145E-08	8.759E-08	9.035E-08	8.044E-08	6.493E-08	5.178E-08	4.182E-08	3.442E-08	3.706E-08	3.788E-08
SSW	1.821E-09	2.516E-08	4.604E-08	4.857E-08	4.416E-08	3.619E-08	2.921E-08	2.987E-08	2.691E-08	2.654E-08	2.112E-08
SW	1.486E-09	2.788E-08	7.525E-08	1.099E-07	1.353E-07	8.760E-08	6.142E-08	4.572E-08	3.560E-08	2.868E-08	2.374E-08
WSW	1.287E-10	1.012E-08	4.342E-08	8.299E-08	1.196E-07	7.425E-08	5.091E-08	3.739E-08	2.885E-08	2.310E-08	1.903E-08
W	3.376E-10	3.757E-08	1.424E-07	1.722E-07	1.535E-07	9.522E-07	5.515E-08	4.772E-08	3.671E-08	2.407E-08	2.162E-08
NNW	1.601E-10	1.195E-08	7.636E-08	1.377E-07	1.834E-07	1.134E-07	7.760E-08	6.000E-08	4.837E-08	3.853E-08	3.162E-08
N	7.740E-09	2.588E-08	9.417E-08	1.976E-07	2.883E-07	1.944E-07	1.295E-07	9.526E-08	7.369E-08	5.814E-08	4.734E-08
NNW	3.048E-08	5.767E-08	9.031E-08	1.099E-07	1.285E-07	1.195E-07	1.102E-07	1.001E-07	9.185E-08	7.257E-08	5.917E-08
NNE	5.787E-08	1.202E-07	1.388E-07	1.388E-07	1.201E-07	9.783E-08	8.166E-08	6.805E-08	5.618E-08	4.035E-08	3.499E-08
NNE	2.169E-08	6.026E-08	7.756E-08	7.504E-08	6.913E-08	5.939E-08	4.999E-08	4.221E-08	3.604E-08	3.116E-08	2.74E-08
ENE	3.121E-09	2.239E-08	9.999E-08	4.740E-08	5.025E-08	4.77E-08	3.816E-08	3.240E-08	2.801E-08	2.104E-08	1.791E-09
E	5.831E-10	2.890E-08	9.361E-08	1.561E-08	1.966E-08	1.817E-08	1.567E-08	1.339E-08	1.151E-08	9.998E-09	8.394E-09
E	6.844E-10	8.823E-09	1.892E-08	2.318E-08	2.398E-08	2.082E-08	1.745E-08	1.46E-08	1.246E-08	1.075E-08	9.394E-08
ESE	1.817E-10	1.439E-08	3.293E-08	3.813E-08	3.665E-08	3.062E-08	2.505E-08	2.0E-08	1.733E-08	1.477E-08	1.278E-08
SE	5.926E-09	3.698E-08	5.694E-08	5.863E-08	5.297E-08	4.351E-08	3.529E-08	2.8E-08	2.416E-08	2.050E-08	1.766E-08
SSE	3.124E-08	1.111E-07	1.215E-07	1.035E-07	8.191E-08	6.464E-08	5.149E-08	4.7E-08	3.465E-08	4.599E-08	5.496E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

BEARING	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.301E-08	2.006E-08	1.275E-08	7.086E-09	6.800E-09	3.534E-09	2.709E-09	1.63E-09	1.789E-09	1.510E-09	1.293E-09
SSW	1.877E-08	1.142E-08	7.172E-09	3.923E-09	2.595E-09	1.869E-09	1.424E-09	1.130E-09	9.252E-10	7.748E-10	6.607E-10
SW	2.135E-08	1.525E-08	9.807E-09	5.634E-09	3.953E-09	2.980E-09	2.367E-09	1.893E-09	1.558E-09	1.310E-09	1.121E-09
WSW	1.667E-08	1.056E-08	7.405E-09	4.493E-09	2.972E-09	2.154E-09	1.654E-09	1.319E-09	1.083E-09	9.090E-10	7.761E-10
W	2.022E-08	1.081E-08	7.463E-09	4.542E-09	3.155E-09	2.287E-09	1.754E-09	1.400E-09	1.151E-09	9.672E-10	8.275E-10
NNW	2.692E-08	1.524E-08	1.040E-08	6.330E-09	4.331E-09	3.218E-09	2.527E-09	2.047E-09	1.95E-09	1.431E-09	1.229E-09
NNW	3.991E-08	1.172E-08	1.450E-08	8.528E-09	5.681E-09	4.147E-09	3.244E-09	2.613E-09	2.160E-09	1.825E-09	1.569E-09
NNE	5.062E-08	2.897E-08	1.882E-08	1.081E-08	7.310E-09	5.399E-09	4.289E-09	3.467E-09	2.936E-09	2.510E-09	2.170E-09
NNE	3.079E-08	1.915E-08	1.563E-08	1.231E-08	1.033E-08	8.537E-09	6.682E-09	5.409E-09	4.492E-09	3.811E-09	3.289E-09
ENE	2.999E-08	3.989E-08	2.574E-08	1.463E-08	9.824E-09	7.213E-09	5.601E-09	4.520E-09	3.752E-09	3.182E-09	2.768E-09
ENE	2.312E-08	3.086E-08	1.950E-08	1.131E-08	7.597E-09	5.380E-09	4.386E-09	3.565E-09	2.969E-09	2.518E-09	2.172E-09
E	9.559E-09	1.426E-08	9.385E-09	5.461E-09	3.717E-09	2.756E-09	2.239E-09	1.860E-09	1.548E-09	1.316E-09	1.136E-09
E	1.008E-08	1.333E-08	8.703E-09	5.014E-09	3.391E-09	2.503E-09	1.951E-09	1.580E-09	1.344E-09	1.159E-09	1.001E-09
ESE	1.34E-08	1.413E-08	9.229E-09	5.315E-09	3.595E-09	2.652E-09	2.067E-09	1.673E-09	1.393E-09	1.184E-09	1.023E-09
SE	1.543E-08	9.307E-09	7.076E-09	4.920E-09	3.524E-09	2.708E-09	2.178E-09	1.806E-09	1.498E-09	1.269E-09	1.093E-09
SSE	4.677E-08	2.407E-08	1.663E-08	9.317E-09	6.206E-09	4.532E-09	3.507E-09	2.823E-09	2.339E-09	1.981E-09	1.707E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	8.079E-08	7.575E-08	5.130E-08	3.754E-08	3.583E-08	1.969E-08	7.329E-09	3.542E-09	2.177E-09	1.512E-09
SSW	4.252E-08	4.160E-08	3.134E-08	2.752E-08	2.126E-08	1.117E-08	4.055E-09	1.885E-09	1.136E-09	7.771E-10
SW	8.002E-08	1.084E-07	6.212E-08	3.586E-08	2.432E-08	1.422E-08	5.832E-09	2.994E-09	1.901E-09	1.314E-09
WSW	5.361E-08	9.130E-08	5.172E-08	2.910E-08	1.766E-08	1.052E-08	4.464E-09	2.172E-09	1.325E-09	9.114E-10
W	1.323E-07	1.318E-07	6.619E-08	3.704E-08	2.420E-08	1.142E-08	4.576E-09	2.305E-09	1.406E-09	9.698E-10
NNW	8.933E-08	1.421E-07	8.069E-08	4.794E-08	3.193E-08	1.569E-08	6.346E-09	3.238E-09	2.050E-09	1.435E-09
N	1.250E-07	2.397E-07	1.331E-07	7.393E-08	4.779E-08	2.255E-08	8.591E-09	4.193E-09	2.621E-09	1.830E-09
NNW	9.174E-08	1.204E-07	1.086E-07	8.687E-08	5.997E-08	2.927E-08	1.103E-08	5.448E-09	3.488E-09	2.511E-09
NNE	7.259E-08	9.559E-08	6.693E-08	4.716E-08	3.502E-08	2.017E-08	1.217E-08	8.273E-09	5.423E-09	3.819E-09
NE	3.937E-08	6.611E-08	4.938E-08	3.595E-08	2.944E-08	3.160E-08	1.496E-08	7.264E-09	4.536E-09	3.189E-09
ENE	1.070E-08	1.810E-08	1.542E-08	1.147E-08	2.765E-08	2.427E-08	1.157E-08	5.640E-09	3.572E-09	2.523E-09
E	1.857E-08	2.240E-08	1.723E-08	1.47E-08	9.433E-09	1.105E-08	5.558E-09	2.805E-09	1.850E-09	1.319E-09
ESE	3.112E-08	3.430E-08	2.478E-08	1.244E-08	1.005E-08	1.055E-08	5.113E-09	2.519E-09	1.596E-09	1.155E-09
SE	5.326E-08	5.002E-08	3.495E-08	2.414E-08	1.731E-08	1.346E-08	5.420E-09	2.669E-09	1.679E-09	1.186E-09
SSE	1.112E-07	7.904E-08	5.112E-08	4.102E-08	4.927E-08	5.675E-08	4.779E-09	2.714E-09	1.795E-09	1.272E-09
										1.986E-09

ERP ELEVATED STACK RELEASE - JAN-JUNE 1990  
8,000 DAY DECAY, DEPLETED

CORRECTED FOR OPEN TERRAIN RECIRCULATION

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

SECTOR	DISTANCE IN MILES									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000
S	8.277E-09	5.102E-08	8.612E-08	8.892E-08	7.895E-08	6.338E-08	5.021E-08	4.030E-08	3.296E-08	3.543E-08
SSW	1.821E-09	2.495E-08	4.529E-08	4.782E-08	4.337E-08	3.536E-08	2.837E-08	2.892E-08	2.791E-08	2.356E-08
SW	1.486E-09	2.765E-08	7.420E-08	1.086E-07	1.334E-07	8.559E-08	5.939E-08	4.410E-08	3.417E-08	2.742E-08
WSW	2.87E-10	1.004E-08	4.301E-08	8.254E-08	1.181E-07	7.276E-08	4.959E-08	3.624E-08	2.786E-08	2.224E-08
W	3.377E-10	3.734E-08	1.414E-07	1.700E-07	1.505E-07	9.269E-08	6.308E-08	4.600E-08	3.527E-08	2.807E-08
WNW	6.01E-10	1.189E-08	7.606E-08	1.366E-07	1.810E-07	1.112E-07	7.582E-08	5.849E-08	4.710E-08	3.739E-08
NW	7.41E-09	2.567E-08	9.338E-08	1.962E-07	3.246E-07	1.908E-07	1.265E-07	7.273E-08	7.155E-08	5.623E-08
NNW	3.047E-08	5.718E-08	8.892E-08	1.086E-07	1.268E-07	1.174E-07	1.080E-07	9.814E-08	9.003E-08	7.090E-08
N	5.788E-08	1.192E-07	1.361E-07	1.177E-07	9.576E-08	7.972E-08	6.621E-08	5.448E-08	4.564E-08	3.889E-08
NNZ	3.169E-08	5.975E-08	7.620E-08	7.360E-08	6.795E-08	5.818E-08	4.879E-08	4.106E-08	3.495E-08	3.014E-08
NE	2.121E-09	2.220E-08	3.943E-08	4.687E-08	4.959E-08	4.390E-08	3.732E-08	3.153E-08	2.691E-08	2.322E-08
ENE	5.832E-10	2.668E-09	9.310E-09	1.537E-08	1.950E-08	1.791E-08	1.536E-08	1.303E-08	1.117E-08	9.672E-09
E	6.845E-10	8.751E-09	1.867E-08	2.294E-08	2.367E-08	2.044E-08	1.704E-08	1.424E-08	1.206E-08	1.036E-08
ESE	1.817E-10	1.428E-08	3.246E-08	3.765E-08	3.607E-08	2.997E-08	2.438E-08	2.001E-08	1.670E-08	1.17E-08
SE	5.927E-09	3.667E-08	5.603E-08	5.779E-08	5.207E-08	4.255E-08	3.432E-08	2.801E-08	2.326E-08	1.85E-08
SSE	3.125E-08	1.102E-07	1.192E-07	1.016E-07	8.021E-08	6.302E-08	4.995E-08	4.035E-08	3.329E-08	2.89E-08

DISTANCE IN MILES

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)

BEARING	DISTANCE IN MILES									
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000
S	3.143E-08	1.876E-08	1.160E-08	6.127E-09	3.932E-09	2.769E-09	2.033E-09	1.592E-09	1.284E-09	1.061E-09
SSW	1.792E-08	1.069E-08	6.135E-09	3.395E-09	2.136E-09	1.489E-09	1.104E-09	8.563E-10	6.861E-10	5.635E-10
SW	2.032E-08	1.447E-08	9.148E-09	4.932E-09	3.280E-09	2.357E-09	1.822E-09	1.428E-09	1.152E-09	9.535E-10
WSW	1.599E-08	1.003E-08	6.671E-09	4.025E-09	2.581E-09	1.826E-09	1.374E-09	1.078E-09	8.727E-10	7.234E-10
W	1.927E-08	1.022E-08	6.995E-09	4.063E-09	2.685E-09	1.892E-09	1.416E-09	1.107E-09	8.933E-10	7.387E-10
WNW	2.591E-08	1.431E-08	9.492E-09	5.447E-09	3.471E-09	2.445E-09	1.861E-09	1.472E-09	1.193E-09	9.887E-10
NW	3.824E-08	2.026E-08	1.314E-08	7.296E-09	4.625E-09	3.241E-09	2.458E-09	1.932E-09	1.563E-09	1.295E-09
NNW	4.903E-08	2.732E-08	1.721E-08	9.264E-09	5.814E-09	4.035E-09	3.013E-09	2.360E-09	1.944E-09	1.623E-09
N	2.953E-08	1.822E-08	1.488E-08	1.182E-08	9.787E-09	7.795E-09	5.965E-09	4.735E-09	3.863E-09	3.226E-09
NNE	2.902E-08	3.884E-08	2.432E-08	1.312E-08	8.374E-09	5.900E-09	4.424E-09	3.463E-09	2.797E-09	2.314E-09
NE	2.235E-08	2.997E-08	1.875E-08	1.012E-08	6.470E-09	4.566E-09	3.481E-09	2.762E-09	2.252E-09	1.873E-09
ENE	9.237E-09	1.393E-08	8.897E-09	4.866E-09	3.079E-09	2.150E-09	1.658E-09	1.327E-09	1.077E-09	8.955E-10
E	9.708E-09	1.297E-08	8.218E-09	4.452E-09	2.804E-09	1.950E-09	1.445E-09	1.119E-09	9.135E-10	7.615E-10
ESE	1.246E-08	1.361E-08	8.39E-09	4.691E-09	2.965E-09	2.068E-09	1.535E-09	1.191E-09	9.531E-10	7.818E-10
SE	1.467E-08	8.740E-09	6.617E-09	4.595E-09	3.285E-09	2.526E-09	2.035E-09	1.685E-09	1.372E-09	1.144E-09
SSE	4.513E-08	2.446E-08	1.510E-08	8.020E-09	5.098E-09	3.582E-09	2.681E-09	2.097E-09	1.692E-09	1.400E-09

SEGMENT BOUNDARIES IN MILES

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES									
	5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.956E-08	7.425E-08	4.976E-08	3.600E-08	3.420E-08	1.839E-08	6.368E-09	2.793E-09	1.606E-09	1.064E-09
SSW	4.189E-08	4.080E-08	3.045E-08	2.855E-08	2.036E-08	1.045E-08	3.533E-09	1.508E-09	8.623E-10	5.660E-10
SW	7.91E-08	1.066E-07	6.033E-08	3.443E-08	2.319E-08	1.341E-08	5.141E-09	2.389E-09	1.435E-09	9.571E-10
WSW	5.325E-08	9.004E-08	5.043E-08	2.811E-08	1.860E-08	9.953E-09	4.017E-09	1.846E-09	1.084E-09	7.250E-10
W	1.310E-07	1.291E-07	6.414E-08	3.559E-08	2.312E-08	1.080E-08	4.102E-09	1.913E-09	1.114E-09	7.415E-10
WNW	8.871E-08	1.401E-07	7.833E-08	4.665E-08	3.086E-08	1.475E-08	5.468E-09	2.483E-09	1.477E-09	9.923E-10
NW	1.241E-07	2.366E-07	1.301E-07	7.177E-08	4.601E-08	2.105E-08	7.408E-09	3.297E-09	1.942E-09	1.299E-09
NNW	9.061E-08	1.186E-07	1.066E-07	8.508E-08	5.836E-08	2.765E-08	9.495E-09	4.100E-09	2.388E-09	1.625E-09
N	1.242E-07	9.350E-08	6.512E-08	4.559E-08	3.367E-08	1.922E-08	1.160E-08	7.594E-09	4.754E-09	3.236E-09
NNE	7.147E-08	6.491E-08	4.820E-08	3.486E-08	2.945E-08	3.20E-08	1.350E-08	5.970E-09	3.484E-09	2.323E-09
NE	3.891E-08	4.649E-08	3.679E-08	2.683E-08	2.192E-08	2.329E-08	1.042E-08	4.640E-09	2.773E-09	1.880E-09
ENE	1.066E-08	1.792E-08	1.511E-08	1.114E-08	9.113E-09	1.065E-08	4.967E-09	2.201E-09	1.327E-09	8.985E-10
E	1.837E-08	2.207E-08	1.683E-08	1.204E-08	9.676E-09	1.013E-08	4.556E-09	1.976E-09	1.134E-09	7.618E-10
ESE	3.073E-08	3.371E-08	2.412E-08	1.688E-08	1.114E-08	4.801E-09	2.094E-09	1.199E-09	7.851E-10	5.051E-10
SE	5.251E-08	4.911E-08	3.399E-08	2.324E-08	1.688E-08	9.115E-09	4.462E-09	2.532E-09	1.666E-09	1.148E-09
SSE	1.094E-07	7.731E-08	4.959E-08	3.954E-08	4.763E-08	2.489E-08	8.294E-09	3.626E-09	2.110E-09	1.405E-09



ERP ELEVATED STACK RELEASE - JAN-JUNE 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (M\*\*2) AT FIXED POINTS BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	DISTANCES IN MILES										
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	6.802E-09	5.574E-09	4.798E-09	3.340E-09	1.650E-09	1.017E-09	6.894E-10	4.959E-10	3.716E-10	3.008E-10	2.697E-10
SSW	2.675E-09	2.301E-09	2.140E-09	1.583E-09	8.167E-10	5.129E-10	3.510E-10	2.537E-10	2.338E-10	1.768E-10	1.384E-10
SW	2.498E-09	2.099E-09	1.882E-09	1.356E-09	1.166E-09	6.288E-10	3.882E-10	2.631E-10	1.899E-10	1.436E-10	1.124E-10
WSW	1.016E-09	9.401E-10	9.670E-10	1.384E-09	7.453E-10	4.026E-10	2.484E-10	1.682E-10	1.214E-10	9.175E-11	7.180E-11
W	3.773E-10	3.112E-09	2.871E-09	1.866E-09	8.902E-10	4.796E-10	2.952E-10	1.994E-10	1.437E-10	1.084E-10	8.481E-11
WNW	5.424E-10	6.763E-10	2.786E-09	1.983E-09	1.233E-09	6.198E-10	3.671E-10	2.436E-10	1.827E-10	1.414E-10	1.157E-10
NW	2.042E-09	1.941E-09	2.063E-09	3.617E-09	2.269E-09	1.129E-09	6.668E-10	4.424E-10	3.199E-10	2.474E-10	2.022E-10
NNW	6.125E-09	4.952E-09	4.164E-09	2.849E-09	2.284E-09	1.227E-09	7.587E-10	6.029E-10	4.368E-10	3.385E-10	2.768E-10
N	1.530E-08	1.187E-08	9.247E-09	5.900E-09	2.684E-09	1.598E-09	1.063E-09	7.567E-10	5.642E-10	4.351E-10	3.444E-10
NNE	6.606E-09	5.256E-09	4.294E-09	2.865E-09	1.359E-09	8.244E-10	5.541E-10	3.967E-10	2.966E-10	2.290E-10	1.813E-10
NE	2.022E-09	1.820E-09	1.806E-09	1.396E-09	7.425E-10	4.718E-10	3.248E-10	2.355E-10	1.772E-10	1.372E-10	1.086E-10
ENE	3.588E-10	4.341E-10	5.795E-10	5.211E-10	3.040E-10	1.993E-10	1.395E-10	1.019E-10	7.702E-11	5.972E-11	4.729E-11
E	1.350E-09	1.223E-09	1.225E-09	9.525E-10	5.089E-10	3.238E-10	2.231E-10	1.618E-10	1.218E-10	9.428E-11	7.465E-11
ESE	1.701E-09	1.612E-09	1.708E-09	1.374E-09	7.504E-10	4.815E-10	3.330E-10	2.421E-10	1.824E-10	1.412E-10	1.118E-10
SE	4.838E-09	4.106E-09	3.742E-09	2.729E-09	1.392E-09	8.706E-10	5.945E-10	4.292E-10	3.223E-10	2.493E-10	1.974E-10
SSE	1.073E-08	8.514E-09	6.920E-09	4.596E-09	2.171E-09	1.315E-09	8.827E-10	6.317E-10	4.722E-10	4.337E-10	3.938E-10

DIRECTION FROM SITE	DISTANCES IN MILES										
	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	2.170E-10	1.261E-10	8.176E-11	4.545E-11	2.877E-11	2.193E-11	1.571E-11	1.179E-11	9.587E-12	7.649E-12	6.244E-12
SSW	1.120E-10	6.635E-11	4.320E-11	2.406E-11	1.724E-11	1.184E-11	8.486E-12	6.373E-12	5.002E-12	3.995E-12	3.261E-12
SW	9.087E-11	5.795E-11	3.861E-11	2.197E-11	1.395E-11	1.026E-11	7.464E-12	5.644E-12	4.388E-12	3.505E-12	2.861E-12
WSW	5.774E-11	3.819E-11	2.566E-11	1.674E-11	1.013E-11	6.793E-12	4.892E-12	3.674E-12	2.856E-12	2.282E-12	1.862E-12
W	6.826E-11	3.080E-11	3.311E-11	1.956E-11	1.311E-11	8.855E-12	6.345E-12	4.765E-12	3.705E-12	2.959E-12	2.415E-12
WNW	9.952E-11	5.935E-11	4.212E-11	2.519E-11	1.750E-11	1.106E-11	7.614E-12	5.718E-12	4.461E-12	3.564E-12	2.909E-12
NW	1.736E-10	1.029E-10	7.282E-11	4.538E-11	2.775E-11	1.861E-11	1.332E-11	1.000E-11	7.778E-12	6.213E-12	5.071E-12
NNW	2.373E-10	1.399E-10	9.885E-11	5.917E-11	3.795E-11	2.550E-11	1.887E-11	1.361E-11	1.044E-11	8.337E-12	6.806E-12
N	2.785E-10	1.332E-10	8.208E-11	4.431E-11	8.898E-11	5.490E-11	3.930E-11	2.951E-11	2.295E-11	1.833E-11	1.496E-11
NNE	1.465E-10	2.202E-10	1.368E-10	7.135E-11	4.364E-11	2.923E-11	2.089E-11	1.564E-11	1.213E-11	9.672E-12	7.883E-12
NE	8.761E-11	1.506E-10	9.371E-11	4.895E-11	2.994E-11	2.003E-11	1.450E-11	1.089E-11	8.467E-12	6.764E-12	5.521E-12
ENE	3.811E-11	5.739E-11	4.352E-11	2.737E-11	1.759E-11	1.164E-11	8.155E-12	5.243E-12	4.080E-12	3.262E-12	2.665E-12
E	6.022E-11	6.917E-11	5.047E-11	3.089E-11	1.980E-11	1.318E-11	9.302E-12	6.856E-12	5.247E-12	4.134E-12	3.368E-12
ESE	9.019E-11	8.823E-11	6.233E-11	3.718E-11	2.368E-11	1.580E-11	1.119E-11	8.281E-12	6.361E-12	5.039E-12	4.086E-12
SE	1.593E-10	7.583E-11	4.650E-11	2.483E-11	1.542E-11	1.077E-11	8.128E-12	1.309E-11	1.014E-11	8.103E-12	6.625E-12
SSE	3.277E-10	2.375E-10	1.453E-10	7.441E-11	4.522E-11	3.030E-11	2.168E-11	1.626E-11	1.263E-11	1.008E-11	8.218E-12

\*\*\*\*\* RELATIVE DEPOSITION PER UNIT AREA (M\*\*2) BY DOWNWIND SECTORS \*\*\*\*\*

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES									
	0.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.326E-09	1.746E-09	6.994E-10	3.802E-10	2.594E-10	1.266E-10	4.611E-11	2.127E-11	1.207E-11	7.703E-12
SSW	1.928E-09	8.520E-10	3.552E-10	2.178E-10	1.400E-10	6.620E-11	2.528E-11	1.194E-11	6.454E-12	4.022E-12
SW	1.696E-09	9.693E-10	4.023E-10	1.932E-10	1.137E-10	5.667E-11	2.210E-11	1.012E-11	5.685E-12	3.528E-12
WSW	1.146E-09	7.349E-10	2.575E-10	1.235E-10	7.250E-11	3.697E-11	1.579E-11	6.923E-12	3.711E-12	2.297E-12
W	2.478E-09	9.245E-10	3.061E-10	1.462E-10	8.568E-11	4.015E-11	1.970E-11	8.985E-12	4.812E-12	2.979E-12
WNW	1.960E-09	1.127E-09	3.851E-10	1.844E-10	1.173E-10	6.062E-11	2.554E-11	1.140E-11	5.781E-12	3.587E-12
NW	2.726E-09	2.062E-09	7.002E-10	3.273E-10	2.050E-10	1.052E-10	4.364E-11	1.893E-11	1.010E-11	6.254E-12
NNW	3.755E-09	1.940E-09	8.212E-10	4.468E-10	2.805E-10	1.433E-10	5.855E-11	2.617E-11	1.390E-11	8.392E-12
N	8.343E-09	2.916E-09	1.083E-09	5.700E-10	3.469E-10	1.428E-10	7.256E-11	5.775E-11	2.981E-11	1.845E-11
NNE	3.873E-09	1.456E-09	5.632E-10	2.995E-10	1.825E-10	1.668E-10	7.358E-11	2.974E-11	1.580E-11	9.738E-12
NE	1.626E-09	7.673E-10	3.283E-10	1.786E-10	1.093E-10	1.113E-10	5.045E-11	2.046E-11	1.100E-11	6.808E-12
ENE	5.212E-10	3.058E-10	1.405E-10	7.755E-11	4.757E-11	4.694E-11	2.661E-11	1.183E-11	5.632E-12	3.283E-12
E	1.104E-09	5.252E-10	2.254E-10	1.227E-10	7.512E-11	5.887E-11	3.031E-11	1.339E-11	6.942E-12	4.180E-12
ESE	1.538E-09	7.694E-10	3.362E-10	1.838E-10	1.125E-10	7.715E-11	3.677E-11	1.606E-11	8.381E-12	5.078E-12
SE	3.373E-09	1.457E-09	6.020E-10	3.250E-10	1.986E-10	8.134E-11	2.546E-11	1.095E-11	1.055E-11	8.159E-12
SSE	6.241E-09	2.329E-09	8.975E-10	5.031E-10	3.811E-10	2.166E-10	7.720E-11	3.083E-11	1.643E-11	1.014E-11



ERI ELEVATED STACK RELEASE - JAN-JUNE 1990  
CORRECTED FOR OPEN TERRAIN RECIRCULATION

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	(METERS)	X/Q (SEC/CUB.METER)	X/Q (SEC/CUB.METER)	X/Q (SEC/CUB.METER)	D/Q (PER SQ.METER)
					NO DECAY	2.260 DAY DECAY	8.000 DAY DECAY	
					UNDEPLETED	UNDEPLETED	DEPLETED	
A	SITE BOUNDARY	S	0.80	1287.	8.916E-08	8.908E-08	8.756E-08	4.480E-09
A	SITE BOUNDARY	SSW	0.82	1327.	4.749E-08	4.743E-08	4.665E-08	1.973E-09
A	SITE BOUNDARY	SW	0.98	1569.	1.069E-07	1.067E-07	1.057E-07	1.413E-09
A	SITE BOUNDARY	WSW	0.93	1489.	7.198E-08	7.187E-08	7.146E-08	1.050E-09
A	SITE BOUNDARY	W	0.91	1468.	1.679E-07	1.676E-07	1.658E-07	2.134E-09
A	SITE BOUNDARY	WNW	0.94	1509.	1.249E-07	1.248E-07	1.239E-07	2.212E-09
A	SITE BOUNDARY	NW	0.81	1307.	1.191E-07	1.190E-07	1.182E-07	1.984E-09
A	SITE BOUNDARY	NNW	0.69	1106.	8.012E-08	8.007E-08	7.884E-08	4.298E-09
A	SITE BOUNDARY	N	0.67	1086.	1.343E-07	1.342E-07	1.319E-07	9.860E-09
A	SITE BOUNDARY	NNE	0.60	965.	6.741E-08	6.737E-08	6.644E-08	4.781E-09
A	SITE BOUNDARY	NE	0.62	1005.	3.054E-08	3.051E-08	3.010E-08	1.783E-09
A	SITE BOUNDARY	ENE	0.59	945.	4.256E-09	4.253E-09	4.217E-09	4.790E-10
A	SITE BOUNDARY	E	0.53	845.	9.729E-09	9.724E-09	9.632E-09	1.216E-09
A	SITE BOUNDARY	ESE	0.54	865.	1.723E-08	1.722E-08	1.705E-08	1.612E-09
A	SITE BOUNDARY	SE	0.65	1046.	4.905E-08	4.903E-08	4.831E-08	3.821E-09
A	SITE BOUNDARY	SSE	0.81	1307.	1.163E-07	1.162E-07	1.139E-07	6.252E-09
A	NEAR. RESIDENCE	SW	1.30	2092.	1.329E-07	1.326E-07	1.311E-07	1.564E-09
A	NEAR. RESIDENCE	WSW	1.30	2092.	1.132E-07	1.129E-07	1.118E-07	9.970E-10
A	NEAR. RESIDENCE	W	1.00	1609.	1.725E-07	1.722E-07	1.700E-07	1.866E-09
A	NEAR. RESIDENCE	WNW	1.60	2576.	1.653E-07	1.648E-07	1.625E-07	1.056E-09
A	NEAR. RESIDENCE	NW	0.90	1448.	1.558E-07	1.556E-07	1.547E-07	3.940E-09
A	NEAR. RESIDENCE	NNW	1.90	3059.	1.218E-07	1.215E-07	1.194E-07	1.372E-09
A	NEAR. RESIDENCE	N	3.00	4829.	5.638E-08	5.617E-08	5.447E-08	7.564E-10
A	NEAR. RESIDENCE	NNE	2.40	3863.	5.194E-08	5.174E-08	5.054E-08	5.962E-10
A	NEAR. RESIDENCE	ENE	1.70	2737.	1.941E-08	1.936E-08	1.915E-08	2.532E-10
A	NEAR. RESIDENCE	E	1.80	2898.	2.226E-08	2.222E-08	2.185E-08	3.775E-10
A	NEAR. RESIDENCE	ESE	2.00	3220.	3.069E-08	3.062E-08	2.997E-08	4.812E-10
A	NEAR. RESIDENCE	SE	2.20	3542.	4.007E-08	3.998E-08	3.901E-08	7.408E-10
A	NEAREST COW	NNW	3.50	5634.	9.227E-08	9.181E-08	9.004E-08	4.365E-10
A	NEAREST GARDEN	SW	1.40	2253.	1.358E-07	1.354E-07	1.337E-07	1.345E-09
A	NEAREST GARDEN	WSW	1.30	2092.	1.132E-07	1.129E-07	1.118E-07	9.970E-10
A	NEAREST GARDEN	W	2.30	3702.	7.545E-08	7.510E-08	7.285E-08	3.536E-10
A	NEAREST GARDEN	WNW	1.60	2575.	1.654E-07	1.649E-07	1.626E-07	1.057E-09
A	NEAREST GARDEN	NW	0.90	1448.	1.558E-07	1.556E-07	1.547E-07	3.940E-09
A	NEAREST GARDEN	NNW	1.90	3058.	1.219E-07	1.216E-07	1.194E-07	1.373E-09
A	NEAREST GARDEN	NNE	2.70	4345.	4.687E-08	4.667E-08	4.549E-08	4.818E-10
A	NEAREST GARDEN	ENE	1.70	2736.	1.941E-08	1.936E-08	1.915E-08	2.534E-10
A	NEAREST GARDEN	E	1.80	2897.	2.227E-08	2.222E-08	2.186E-08	3.777E-10
A	NEAREST GARDEN	ESE	2.40	3863.	2.614E-08	2.606E-08	2.539E-08	3.568E-10
A	NEAREST GARDEN	SE	3.00	4828.	2.905E-08	2.896E-08	2.801E-08	4.292E-10

## ATMOSPHERIC DIFFUSION MODEL

Onsite meteorological data from January 1 through June 30, 1990, were used to determine long-term (routine) diffusion estimates for evaluating normal atmospheric releases from Cooper Nuclear Station. Atmospheric dispersion parameters (X/Q values) were determined for the site boundary distances from each release point, the standard population distances, and special locations for nearest residence, cow, and garden using the methodology presented in U.S. NRC Regulatory Guide 1.111 (Rev.1) and the computer code XQDDQ (NUREG/CR-2919). Two release modes were analyzed. Releases from the 99-meter free-standing stack were considered 100 percent elevated, while releases from the reactor building, turbine-generator building, radwaste building and augmented radwaste building vents were considered as a 100 percent ground level release (one combined source term was assumed to apply for these vents).

Winds were obtained from measurements at the 10-meter level (for ground-level releases) and the 100-meter level (for elevated releases), and the stability class was based on the vertical temperature gradient between 60 meters and 10 meters (for ground releases) and 100 meters and 10 meters (for elevated releases). In accordance with Regulatory Guide 1.111, calm periods were distributed directionally in proportion to the directional distribution within a stability class of the lowest wind speed group. For the calculations, calm periods were assigned a speed of one-half the threshold wind speed of the wind vane or anemometer, whichever is higher.

The Gaussian straight-line trajectory model, which assumes that the air flow transports and diffuses effluents along a straight line through the entire region of interest in the airflow direction at the release point, was modified to account for various modes of effluent releases. In the case of an elevated release, plume rise due to momentum effects was incorporated into the calculation. For ground-level releases, building wake effects were considered.

The mathematical equation used in the Gaussian straight-line trajectory model is:

$$(X/Q)_i = 2.032 \sum_{jk} \frac{f_{ijk}}{x_{ujk} \Sigma_{zk}} \exp \left[ \frac{-h_e^2}{\sigma_{zk}^2} \right] \quad (\text{Eq. 1})$$

and

$$\Sigma_{zk} = (\sigma_{zk}^2 + 0.5 D_z^2 / \pi)^{1/2} \leq \sqrt{3} \sigma_{zk} \quad (\text{Eq. 2})$$



where

- $i$  = index identifying direction sector;
- $j$  = index identifying wind speed class;
- $k$  = index identifying atmospheric stability class;
- $\frac{X}{Q}$  = average effluent concentration normalized by source strength at the specific downwind distance;
- $f$  = joint frequency distribution of wind direction, wind speed class, and atmospheric stability class;
- $x$  = distance from the release point to a receptor;
- $u$  = wind speed;
- $\Sigma_z$  = vertical plume spread with volumetric building wake correction for a release within the building wake cavity;
- $\sigma_z$  = vertical plume spread without volumetric building wake correction;
- $D_z$  = maximum adjacent building height either upwind or downwind of the release point (44.5 meters for ground-level releases); and
- $h_e$  = effective plume height;

The term  $\Sigma_{zk}$  given in Equations 1 and 2 is used for ground-level release ( $h = 0$ ) within the building wake cavity. For an elevated release, no volumetric building wake correction needs to be considered, i.e.,  $\Sigma_{zk} = \sigma_{zk}$ . For all building wake determinations, the reactor building was considered to be the dominating structure in the modification of air flows within the building complex.

Since the model does not directly consider the effects of spatial and temporal variation in airflow due to terrain, appropriate adjustments were made to the calculated  $X/Q$  values, using the default values of Regulatory Guide 1.111, Rev. 0.



APPENDIX C  
DOSE CALCULATIONS

## CONTENTS

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## LIQUID EFFLUENT DOSE CALCULATIONS

Doses to the maximum individual and 0- to 50-mile population resulting from the release of radioactive material in liquid effluents from Cooper Nuclear Station were calculated using the LADTAP II computer program. The LADTAP II program implements the radiological dose models of Regulatory Guide 1.109 for determining the radiatic. exposure to man from three principal exposure pathways in the aquatic environment-- potable water, aquatic foods, and recreational water use. Doses to both the maximum individual and 0 to 50 mile population are calculated as a function of age group and pathway for significant body organs, and are presented in Tables 1 and 2, respectively, for the first semiannual period.

Assumptions and data sources used for input to the LADTAP II code are described in a separate section of this appendix (see page C18).



Table 1. Doses to Individual at the Site Boundary, Resulting From Exposure to Radioactivity Discharged in Liquid Effluents, January-June 1990, Cooper Nuclear Station

Period and Pathway	Dose to Individual, mrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
1st Quarter								
Drinking Water		7.47 E-03	9.08 E-03	7.84 E-03	1.21 E-03	2.72 E-03	6.54 E-04	1.83 E-02
Shoreline	1.49 E-04	1.27 E-04	1.27 E-04	1.27 E-04	1.27 E-04	1.27 E-04	1.27 E-04	1.27 E-04
Totals	1.49 E-04	7.60 E-03	9.21 E-03	7.97 E-03	1.34 E-03	2.85 E-03	9.81 E-04	1.84 E-02
2nd Quarter								
Eating Fish		8.02 E-03	1.39 E-02	1.01 E-02	9.90 E-09	4.58 E-03	1.49 E-03	2.05 E-03
Drinking Water		1.17 E-02	1.25 E-02	1.15 E-02	1.24 E-07	3.67 E-03	1.14 E-03	2.88 E-02
Shoreline	1.54 E-04	1.31 E-04	1.31 E-04	1.31 E-04	1.31 E-04	1.31 E-04	1.31 E-04	1.31 E-04
Totals	1.54 E-04	1.19 E-02	2.65 E-02	2.17 E-02	1.34 E-07	9.38 E-03	2.76 E-03	3.10 E-02
Totals for 1st and 2nd Quarters	3.03 E-04	2.75 E-02	3.57 E-02	2.97 E-02	1.34 E-07	1.12 E-02	3.74 E-03	4.94 E-02

Calculated doses are based on the following periods of exposures:

Fishing: from April through November

Drinking water and shoreline: from January through December.

Table 2. Doses to Population Within a 50-Mile Radius, Resulting From Exposure to Radioactivity Discharged in Liquid Effluents, January-June 1990, Cooper Nuclear Station

Period and Pathway	Dose to Population, manrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
1st Quarter								
Drinking Water		1.30 E-02	1.44 E-02	1.03 E-02	1.81 E-03	4.26 E-03	1.40 E-03	2.19 E-02
Shoreline	7.90 E-03	6.72 E-03	6.72 E-03	6.72 E-03	6.72 E-03	6.72 E-03	6.72 E-03	6.72 E-03
Totals	7.90 E-03	1.97 E-02	2.11 E-02	1.70 E-02	8.53 E-03	1.10 E-02	8.12 E-03	2.86 E-02
2nd Quarter								
Eating Fish		5.57 E-04	8.95 E-04	5.39 E-04	2.93 E-11	2.93 E-04	9.87 E-05	1.10 E-04
Drinking Water		1.31 E-02	1.32 E-02	1.03 E-02	5.53 E-08	3.83 E-03	1.24 E-03	2.29 E-02
Shoreline	8.16 E-03	6.94 E-03	6.94 E-03	6.94 E-03	6.94 E-03	6.94 E-03	6.94 E-03	6.94 E-03
Swimming		1.63 E-05	1.63 E-05	1.63 E-05	1.63 E-05	1.63 E-05	1.63 E-05	1.63 E-05
Boating		1.81 E-04	1.81 E-04	1.81 E-04	1.81 E-04	1.81 E-04	1.81 E-04	1.81 E-04
Totals	8.16 E-03	2.08 E-02	2.12 E-02	1.80 E-02	7.14 E-03	1.13 E-02	8.48 E-03	3.01 E-02
Totals for 1st and 2nd Quarters	1.61 E-02	4.05 E-02	4.23 E-02	3.50 E-02	1.57 E-02	2.23 E-02	1.66 E-02	5.87 E-02

Calculated doses are based on the following periods of exposures:

Fishing and Boating: from April through November

Drinking water and shoreline: from January through December.

Swimming: from June through September.

Exposure from drinking water is calculated for the city of St. Joseph, Missouri, nearest public water intake from the Missouri River, 84 miles downstream.

## GASEOUS EFFLUENT DOSE CALCULATIONS

Doses to the maximum individual and 0- to 50-mile population resulting from the release of radioactive material in gaseous effluents from the Cooper Nuclear Station were calculated using the GASPAR computer code. Four sites were selected for individual dose calculations: the site boundary, the nearest residence, the nearest garden, and the nearest cow. GASPAR implements the radiological dose models of Regulatory Guide 1.109 for determining the radiation exposure to man from four principal atmospheric exposure pathways: plume, ground, inhalation, and ingestion. Doses to the maximum individual and the population are calculated as a function of age group and pathway for significant body organs.

Tables 3 and 4 present maximum individual doses for the first and second quarters; population doses for the same period are given in Tables 5 and 6. Individual and population doses for the first semiannual period are contained in Tables 7 and 8, respectively. In addition, 0- to 50-mile distributions of gamma and beta air doses are presented in Tables 9, 10, and 11 for the first quarter, second quarter, and first semiannual period, respectively.

Because of differences in the amount of valid meteorological data recovered, dose contributions from the first and second quarters of 1990 cannot be summed to provide semiannual doses.

Assumptions and data used for input to the GASPAR code are described in a separate section of this appendix (see page C17).



TABLE 3. DOSES TO MAXIMUM INDIVIDUAL (MEEM), JANUARY-MARCH 1990

COOPER NUCLEAR STATION JANUARY-MARCH 1990  
SPECIAL LOCATION # 1 SITE BOUNDARY  
AT 0.67 MILES N

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	8.18E-03	8.18E-03	8.18E-03	8.18E-03	8.18E-03	8.36E-03	8.30E-03	1.68E-02
TEEN	8.18E-03	8.18E-03	8.18E-03	8.18E-03	8.18E-03	8.43E-03	8.30E-03	1.68E-02
CHILD	8.18E-03	8.18E-03	8.18E-03	8.18E-03	8.18E-03	8.66E-03	8.30E-03	1.68E-02
INFANT	8.18E-03	8.18E-03	8.18E-03	8.18E-03	8.18E-03	9.20E-03	8.30E-03	1.68E-02

COOPER NUCLEAR STATION JANUARY-MARCH 1990  
SPECIAL LOCATION # 2 NEAR RESIDENCE  
AT 0.90 MILES NW

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.27E-03	2.15E-03	4.51E-03
TEEN	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.32E-03	2.15E-03	4.51E-03
CHILD	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.51E-03	2.15E-03	4.51E-03
INFANT	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.94E-03	2.15E-03	4.51E-03

TABLE 3. DOSES TO MAXIMUM INDIVIDUAL (MKEM), JANUARY-MARCH 1990 (CONTINUED)

COOPER NUCLEAR STATION JANUARY-MARCH 1990  
SPECIAL LOCATION # 3 NEAREST COW  
AT 3.50 MILES NNW

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.60E-04	1.52E-04	3.29E-04
TEEN	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.63E-04	1.52E-04	3.29E-04
CHILD	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.74E-04	1.52E-04	3.29E-04
INFANT	1.50E-04	1.50E-04	1.50E-04	1.50E-04	1.50E-04	2.00E-04	1.52E-04	3.29E-04

COOPER NUCLEAR STATION JANUARY-MARCH 1990  
SPECIAL LOCATION # 4 NEAREST GARDEN  
AT 0.90 MILES NW

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.27E-03	2.15E-03	4.51E-03
TEEN	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.32E-03	2.15E-03	4.51E-03
CHILD	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.51E-03	2.15E-03	4.51E-03
INFANT	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.12E-03	2.94E-03	2.15E-03	4.51E-03

TABLE 4. DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 1990

COOPER NUCLEAR STATION APRIL-JUNE 1990  
SPECIAL LOCATION # 1 SITE BOUNDARY  
AT 0.67 MILES N

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.37E-01	5.37E-01	9.76E-01
TEEN	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.39E-01	5.37E-01	9.76E-01
CHILD	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.45E-01	5.37E-01	9.76E-01
INFANT	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.32E-01	5.59E-01	5.37E-01	9.76E-01

COOPER NUCLEAR STATION APRIL-JUNE 1990  
SPECIAL LOCATION # 2 NEAR RESIDENCE  
AT 0.90 MILES NW

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.73E-01	3.75E-01	6.81E-01
TEEN	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.74E-01	3.75E-01	6.81E-01
CHILD	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.76E-01	3.75E-01	6.81E-01
INFANT	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.80E-01	3.75E-01	6.81E-01



TABLE 4. DOSES TO MAXIMUM INDIVIDUAL (MRD), APRIL-JUNE 1990 (CONTINUED)

COOPER NUCLEAR STATION APRIL-JUNE 1990  
SPECIAL LOCATION # 3 NEAREST COM  
AT 3.50 MILES NW

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.15E-02	8.19E-02	1.49E-01
TEEN	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.16E-02	8.19E-02	1.49E-01
CHILD	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.19E-02	8.19E-02	1.49E-01
INFANT	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.13E-02	8.25E-02	8.19E-02	1.49E-01

COOPER NUCLEAR STATION APRIL-JUNE 1990  
SPECIAL LOCATION # 4 NEAREST GARDEN  
AT 0.90 MILES NW

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.73E-01	3.75E-01	6.81E-01
TEEN	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.74E-01	3.75E-01	6.81E-01
CHILD	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.76E-01	3.75E-01	6.81E-01
INFANT	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.72E-01	3.80E-01	3.75E-01	6.81E-01

TABLE 5. DOSES TO POPULATION WITHIN 50 MILES, JANUARY-MARCH 1990

COOPER NUCLEAR STATION JANUARY-MARCH 1990 ALASKA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (MANREM)									
PATHWAY	T BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN	
PLUME	2.89E-04	2.89E-04	2.89E-04	2.89E-04	2.89E-04	2.89E-04	2.99E-04	7.98E-04	
GROUND	2.41E-08	2.41E-08	2.41E-08	2.41E-08	2.41E-08	2.41E-08	2.41E-08	2.92E-08	
INHAL	2.01E-08	5.12E-09	2.74E-08	3.55E-08	6.03E-08	1.17E-05	0.00E-01	0.00E-01	
VEGET	2.18E-07	7.26E-08	3.14E-07	3.86E-07	6.51E-07	1.25E-04	0.00E-01	0.00E-01	
COW MILK	2.77E-07	8.58E-08	4.09E-07	4.90E-07	8.25E-07	1.59E-04	0.00E-01	0.00E-01	
MEAT	6.19E-09	2.42E-09	8.28E-09	1.09E-08	1.85E-08	3.54E-06	0.00E-01	0.00E-01	
*TOTAL*	2.90E-04	2.90E-04	2.90E-04	2.90E-04	2.91E-04	5.83E-04	2.99E-04	7.98E-04	



TABLE 6. DOSES TO POPULATION WITHIN 50 MILES, APRIL-JUNE 1990

COOPER NUCLEAR STATION APRIL-JUNE 1990  
ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (MANREM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.52E-02	1.35E-01
GROUND	2.01E-07	2.01E-07	2.01E-07	2.01E-07	2.01E-07	2.01E-07	2.01E-07	2.44E-07
INHAL	1.44E-07	9.28E-08	2.22E-07	3.10E-07	5.31E-07	7.95E-05	0.00E-01	0.00E-01
VEGET	1.54E-06	5.13E-07	2.21E-06	2.72E-06	4.59E-06	8.81E-04	0.00E-01	0.00E-01
COW MILK	2.04E-06	6.45E-07	3.02E-06	3.62E-06	6.09E-06	1.17E-03	0.00E-01	0.00E-01
MEAT	4.42E-08	1.73E-08	5.91E-08	7.77E-08	1.32E-07	2.53E-05	0.00E-01	0.00E-01
*TOTAL*	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.66E-02	6.52E-02	1.35E-01



TABLE 7. DOSES TO MAXIMUM INDIVIDUAL (MBEM), JANUARY-JUNE 1990

COOPER NUCLEAR STATION JANUARY-JUNE 1990  
SPECIAL LOCATION # 1 SITE BOUNDARY  
AT 0.67 MILES N

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.34E-02	3.04E-02	6.17E-02
TEEN	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.48E-02	3.04E-02	6.17E-02
CHILD	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.91E-02	3.04E-02	6.17E-02
INFANT	3.00E-02	3.00E-02	3.01E-02	3.01E-02	3.01E-02	4.93E-02	3.04E-02	6.17E-02

COOPER NUCLEAR STATION JANUARY-JUNE 1990  
SPECIAL LOCATION # 2 NEAR RESIDENCE  
AT 0.90 MILES NW

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	8.48E-03	8.48E-03	8.48E-03	8.48E-03	8.49E-03	9.87E-03	8.60E-03	1.81E-02
TEEN	8.48E-03	8.48E-03	8.49E-03	8.49E-03	8.49E-03	1.04E-02	8.60E-03	1.81E-02
CHILD	8.49E-03	8.48E-03	8.49E-03	8.49E-03	8.50E-03	1.21E-02	8.60E-03	1.81E-02
INFANT	8.49E-03	8.48E-03	8.50E-03	8.50E-03	8.51E-03	1.62E-02	8.60E-03	1.81E-02

TABLE 7. DOSES TO MAXIMUM INDIVIDUAL (REM), JANUARY-JUNE 1990 (CONTINUED)

COOPER NUCLEAR STATION JANUARY-JUNE 1990  
SPECIAL LOCATION # 3 NEAREST COM  
AT 3.50 MILES NW

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	6.20E-04	6.20E-04	6.20E-04	6.21E-04	6.21E-04	7.82E-04	6.30E-04	1.33E-03
TEEN	6.20E-04	6.20E-04	6.21E-04	6.21E-04	6.21E-04	8.43E-04	6.30E-04	1.33E-03
CHILD	6.21E-04	6.20E-04	6.21E-04	6.21E-04	6.22E-04	1.04E-03	6.30E-04	1.33E-03
INFANT	6.21E-04	6.20E-04	6.22E-04	6.23E-04	6.23E-04	1.49E-03	6.30E-04	1.33E-03

COOPER NUCLEAR STATION JANUARY-JUNE 1990  
SPECIAL LOCATION # 4 NEAREST GARDEN  
AT 0.90 MILES NW

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
ADULT	8.48E-03	8.48E-03	8.48E-03	8.48E-03	8.49E-03	9.87E-03	8.60E-03	1.81E-02
TEEN	8.48E-03	8.48E-03	8.49E-03	8.49E-03	8.49E-03	1.04E-02	8.60E-03	1.81E-02
CHILD	8.49E-03	8.48E-03	8.49E-03	8.49E-03	8.50E-03	1.21E-02	8.60E-03	1.81E-02
INFANT	8.49E-03	8.48E-03	8.50E-03	8.50E-03	8.51E-03	1.62E-02	8.60E-03	1.81E-02



TABLE 8. DOSES TO POPULATION WITHIN 50 MILES, JANUARY-JUNE 1990

COOPER NUCLEAR STATION JANUARY-JUNE 1990  
ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (MANREM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.25E-03	1.25E-03	1.25E-03	1.25E-03	1.25E-03	1.25E-03	1.28E-03	3.36E-03
GROUND	2.21E-07	2.21E-07	2.21E-07	2.21E-07	2.21E-07	2.21E-07	2.21E-07	2.69E-07
INHAL	1.80E-07	1.10E-07	2.75E-07	3.82E-07	6.53E-07	1.00E-04	0.00E-01	0.00E-01
VEGET	1.70E-06	5.65E-07	2.43E-06	2.99E-06	5.05E-06	9.70E-04	0.00E-01	0.00E-01
COW MILK	2.21E-06	6.96E-07	3.26E-06	3.91E-06	6.58E-06	1.26E-03	0.00E-01	0.00E-01
MEAT	4.84E-08	1.89E-08	6.47E-08	8.51E-08	1.45E-07	2.77E-05	0.00E-01	0.00E-01
*TOTAL*	1.25E-03	1.25E-03	1.25E-03	1.25E-03	1.26E-03	3.61E-03	1.28E-03	3.36E-03



TABLE 9. GAMMA AND BETA AIR DOSES, JANUARY-MARCH 1990

COOPER NUCLEAR STATION JANUARY-MARCH 1990										
INDIVIDUAL ANNUAL GAMMA AIR DOSE (MILLIRADS)										
DISTANCE IN MILES										
DIR	0.0-1.	1.-2.	2.-3.	3.-4.	4.-5.	5.-10.	10.-20.	20.-30.	30.-40.	40.-50.
N	2.324E-02	1.563E-03	4.792E-04	2.246E-04	1.292E-04	4.386E-05	1.273E-05	5.194E-06	2.668E-06	1.619E-06
NNE	1.220E-02	8.127E-04	2.535E-04	1.219E-04	7.090E-05	3.654E-05	9.010E-06	3.262E-06	1.623E-06	9.511E-07
NE	9.000E-03	6.586E-04	2.066E-04	9.910E-05	5.726E-05	3.477E-05	8.600E-06	3.159E-06	1.592E-06	9.289E-07
ENE	2.759E-03	1.994E-04	6.579E-05	3.267E-05	1.632E-05	1.466E-05	3.743E-06	1.436E-06	7.769E-07	4.550E-07
E	1.517E-03	1.170E-04	4.283E-05	2.170E-05	1.342E-05	1.021E-05	2.655E-06	9.682E-07	4.603E-07	2.689E-07
ESE	2.382E-03	1.910E-04	6.383E-05	3.281E-05	1.921E-05	1.037E-05	2.535E-06	9.414E-07	4.794E-07	2.793E-07
SE	6.034E-03	4.383E-04	1.400E-04	6.472E-05	3.773E-05	1.253E-05	3.510E-06	1.351E-06	6.900E-07	4.091E-07
SSE	8.108E-03	6.240E-04	1.944E-04	9.027E-05	7.426E-05	2.523E-05	6.072E-06	2.58E-06	1.156E-06	6.882E-07
S	1.483E-02	1.051E-03	3.032E-04	1.354E-04	8.274E-05	2.658E-05	6.179E-06	2.258E-06	1.163E-06	7.112E-07
SSW	8.293E-03	5.798E-04	1.711E-04	8.369E-05	4.723E-05	1.524E-05	3.592E-06	1.310E-06	6.764E-07	4.167E-07
SW	4.965E-03	4.351E-04	1.292E-04	5.869E-05	3.283E-05	1.167E-05	2.765E-06	9.562E-07	4.657E-07	2.763E-07
WSW	2.596E-03	2.350E-04	6.757E-05	3.043E-05	1.687E-05	5.961E-06	1.481E-06	4.693E-07	2.356E-07	1.392E-07
W	7.919E-04	1.343E-04	3.957E-05	1.810E-05	1.034E-05	3.629E-06	1.053E-06	3.583E-07	1.610E-07	8.622E-08
WNW	2.466E-03	2.581E-04	7.729E-05	3.615E-05	2.021E-05	6.747E-06	1.768E-06	6.498E-07	3.220E-07	1.877E-07
NW	1.217E-03	1.115E-03	3.186E-04	1.444E-04	8.013E-05	2.615E-05	6.723E-06	2.475E-06	1.285E-06	7.826E-07
NNW	1.963E-02	1.385E-03	4.494E-04	2.284E-04	1.267E-04	4.223E-05	1.039E-05	3.890E-06	2.042E-06	1.266E-06

INDIVIDUAL ANNUAL BETA AIR DOSE (MILLIRADS)										
DISTANCE IN MILES										
DIR	0.0-1.	1.-2.	2.-3.	3.-4.	4.-5.	5.-10.	10.-20.	20.-30.	30.-40.	40.-50.
N	1.372E-02	1.693E-03	5.489E-04	2.695E-04	1.620E-04	6.234E-05	2.055E-05	9.070E-06	5.141E-06	3.791E-06
NNE	1.014E-02	8.614E-04	2.786E-04	1.379E-04	8.313E-05	4.102E-05	1.185E-05	4.850E-06	2.696E-06	1.754E-06
NE	8.177E-03	7.270E-04	2.349E-04	1.165E-04	7.000E-05	3.784E-05	1.063E-05	4.288E-06	2.376E-06	1.532E-06
ENE	2.349E-03	2.113E-04	7.052E-05	3.550E-05	2.153E-05	1.399E-05	3.994E-06	1.633E-06	9.327E-07	5.949E-07
E	1.271E-03	1.197E-04	4.288E-05	2.116E-05	1.302E-05	9.029E-06	2.533E-06	1.000E-06	5.377E-07	3.484E-07
ESE	2.014E-03	1.977E-04	6.498E-05	3.305E-05	1.947E-05	9.879E-06	2.705E-06	1.070E-06	5.787E-07	3.638E-07
SE	5.341E-03	4.759E-04	1.590E-04	7.307E-05	4.361E-05	1.608E-05	5.027E-06	2.106E-06	1.188E-06	7.690E-07
SSE	7.276E-03	6.807E-04	2.172E-04	1.039E-04	7.759E-05	2.877E-05	8.079E-06	3.288E-06	1.824E-06	1.179E-06
S	1.352E-02	1.175E-03	3.606E-04	1.714E-04	1.062E-04	3.896E-05	1.104E-05	4.523E-06	2.529E-06	1.552E-06
SSW	7.457E-03	6.456E-04	2.075E-04	1.016E-04	6.048E-05	2.247E-05	6.507E-06	2.702E-06	1.529E-06	1.008E-06
SW	4.404E-03	4.429E-04	1.366E-04	6.560E-05	3.878E-05	1.520E-05	4.436E-06	1.871E-06	1.069E-06	7.089E-07
WSW	2.316E-03	2.394E-04	7.233E-05	3.469E-05	2.041E-05	7.960E-06	2.382E-06	9.798E-07	5.555E-07	3.672E-07
W	5.730E-04	1.062E-04	3.105E-05	1.474E-05	8.713E-06	3.255E-06	1.043E-06	4.320E-07	2.384E-07	1.538E-07
WNW	2.155E-03	2.503E-04	7.558E-05	3.616E-05	2.103E-05	7.760E-06	2.313E-06	9.544E-07	5.320E-07	3.462E-07
NW	1.075E-02	1.149E-03	3.408E-04	1.627E-04	9.562E-05	3.571E-05	1.086E-05	4.546E-06	2.589E-06	1.709E-06
NNW	1.744E-02	1.534E-03	5.131E-04	2.641E-04	1.551E-04	5.873E-05	1.752E-05	7.384E-06	4.216E-06	2.798E-06

TABLE 10. GAMMA AND BETA AIR DOSES, APRIL-JUNE 1990

COOPER NUCLEAR STATION APRIL-JUNE 1990 INDIVIDUAL ANNUAL GAMMA AIR DOSE (MILLIRADS)												
DISTANCE IN MILES												
DIR	0.0-1.	1.-2.	2.-3.	3.-4.	4.-5.	5.-10.	10.-20.	20.-30.	30.-40.	40.-50.		
N	8.301E-01	4.004E-01	1.704E-01	8.030E-02	4.244E-02	7.750E-03	3.562E-04	1.698E-05	7.474E-06	4.241E-06		
NNE	4.497E-01	1.848E-01	7.812E-02	3.529E-02	1.789E-02	4.050E-03	6.013E-05	8.521E-06	3.906E-06	2.146E-06		
NE	1.213E-01	7.836E-02	3.344E-02	1.436E-02	7.893E-03	2.329E-03	5.153E-05	4.041E-06	1.819E-06	1.031E-06		
ENE	2.528E-02	3.066E-02	1.764E-02	7.336E-03	3.392E-03	3.357E-04	6.159E-06	1.729E-06	7.961E-07	4.357E-07		
E	6.271E-02	7.689E-02	3.479E-02	1.627E-02	8.927E-03	3.593E-03	1.522E-04	6.803E-06	1.656E-06	9.047E-07		
ESE	7.512E-02	9.335E-02	4.916E-02	2.382E-02	1.195E-02	5.245E-03	1.571E-04	6.873E-06	2.237E-06	1.232E-06		
SE	2.465E-01	1.676E-01	7.858E-02	3.798E-02	2.142E-02	4.770E-03	2.619E-04	1.219E-05	2.808E-06	1.460E-06		
SSE	6.478E-01	2.345E-01	1.054E-01	5.038E-02	5.535E-02	1.005E-02	3.646E-04	1.691E-05	4.611E-06	2.560E-06		
S	2.008E-01	2.051E-01	8.513E-02	3.611E-02	2.449E-02	2.854E-03	4.511E-05	7.306E-06	3.410E-06	1.930E-06		
SSW	9.742E-02	8.918E-02	3.724E-02	2.008E-02	9.316E-03	1.102E-03	2.253E-05	5.612E-06	2.407E-06	1.388E-06		
SW	1.556E-01	3.042E-01	7.648E-02	2.493E-02	9.042E-03	8.891E-04	1.644E-05	4.555E-06	2.139E-06	1.199E-06		
WSW	5.523E-02	3.242E-01	8.180E-02	2.670E-02	1.001E-02	5.829E-04	9.915E-06	2.899E-06	1.270E-06	6.792E-07		
W	1.857E-01	4.798E-01	1.214E-01	4.338E-02	1.839E-02	1.588E-03	3.890E-05	4.549E-06	2.047E-06	1.129E-06		
WNW	6.768E-02	6.133E-01	1.564E-01	5.303E-02	1.976E-02	1.756E-03	2.086E-05	4.770E-06	2.095E-06	1.088E-06		
NW	1.545E-01	8.202E-01	2.125E-01	7.646E-02	2.998E-02	3.965E-03	6.353E-05	7.506E-06	3.453E-06	1.949E-06		
NNW	4.071E-01	5.092E-01	2.520E-01	1.213E-01	5.405E-02	9.023E-03	2.674E-04	1.510E-05	5.833E-06	3.393E-06		

INDIVIDUAL ANNUAL BETA AIR DOSE (MILLIRADS)												
DISTANCE IN MILES												
DIR	0.0-1.	1.-2.	2.-3.	3.-4.	4.-5.	5.-10.	10.-20.	20.-30.	30.-40.	40.-50.		
N	4.400E-01	2.080E-01	8.836E-02	4.166E-02	2.204E-02	4.059E-03	2.080E-04	2.011E-05	1.069E-05	6.873E-06		
NNE	2.363E-01	9.635E-02	4.047E-02	1.829E-02	9.286E-03	2.124E-03	4.226E-05	9.592E-06	5.213E-06	3.345E-06		
NE	6.495E-02	4.073E-02	1.735E-02	7.462E-03	4.105E-03	1.219E-03	3.270E-05	4.911E-06	2.648E-06	1.710E-06		
ENE	1.430E-02	1.597E-02	9.154E-03	3.812E-03	1.767E-03	1.825E-04	6.275E-06	2.351E-06	1.315E-06	8.502E-07		
E	3.419E-02	3.993E-02	1.803E-02	8.434E-03	4.631E-03	1.966E-03	8.303E-05	5.586E-06	2.091E-06	1.513E-06		
ESE	4.050E-02	4.839E-02	2.545E-02	1.233E-02	6.187E-03	2.720E-03	8.587E-05	5.724E-06	2.455E-06	1.532E-06		
SE	1.297E-01	8.684E-02	4.066E-02	1.965E-02	1.108E-02	2.475E-03	1.405E-04	8.790E-06	2.963E-06	1.786E-06		
SSE	3.410E-01	1.218E-01	5.466E-02	2.612E-02	2.865E-02	5.225E-03	2.021E-04	1.509E-05	6.196E-06	3.911E-06		
S	1.098E-01	1.066E-01	4.418E-02	1.876E-02	1.273E-02	1.512E-03	3.686E-05	1.008E-05	5.541E-06	3.584E-06		
SSW	5.615E-02	4.670E-02	1.945E-02	1.048E-02	4.885E-03	6.026E-04	2.328E-05	7.959E-06	4.435E-06	2.876E-06		
SW	8.450E-02	1.575E-01	3.964E-02	1.296E-02	4.724E-03	4.854E-04	1.756E-05	6.652E-06	3.725E-06	2.419E-06		
WSW	3.115E-02	1.677E-01	4.233E-02	1.384E-02	5.204E-03	3.174E-04	1.064E-05	4.042E-06	2.192E-06	1.396E-06		
W	9.877E-02	2.481E-01	6.279E-02	2.246E-02	9.537E-03	1.045E-03	2.672E-05	5.357E-06	2.845E-06	1.802E-06		
WNW	3.689E-02	3.170E-01	8.079E-02	2.742E-02	1.024E-02	9.236E-04	1.653E-05	5.137E-06	2.767E-06	1.748E-06		
NW	8.617E-02	4.243E-01	1.099E-01	3.960E-02	1.556E-02	2.085E-03	4.625E-05	9.956E-06	5.400E-06	3.461E-06		
NNW	2.201E-01	2.641E-01	1.305E-01	6.281E-02	2.803E-02	4.717E-03	1.597E-04	1.780E-05	8.982E-06	5.839E-06		



TABLE 11. GAMMA AND BETA AIR DOSES, JANUARY-JUNE 1990

COOPER NUCLEAR STATION JANUARY-JUNE 1990										
INDIVIDUAL ANNUAL GAMMA AIR DOSE (MILLIRADS)										
DISTANCE IN MILES										
DIR	0.0-1.	1.-2.	2.-3.	3.-4.	4.-5.	5.-10.	10.-20.	20.-30.	30.-40.	40.-50.
N	6.397E-02	5.843E-03	1.839E-03	8.807E-04	5.122E-04	1.764E-04	5.348E-05	2.203E-05	1.102E-05	6.491E-06
NNE	3.860E-02	2.690E-03	8.729E-04	4.315E-04	2.588E-04	1.527E-04	3.809E-05	1.344E-05	6.464E-06	3.665E-06
NE	2.161E-02	1.741E-03	5.850E-04	2.941E-04	1.767E-04	1.166E-04	2.898E-05	1.062E-05	5.300E-06	3.039E-06
ENE	9.577E-03	7.078E-04	2.418E-04	1.227E-04	7.295E-05	5.091E-05	1.324E-05	4.877E-06	2.501E-06	1.416E-06
E	8.789E-03	6.813E-04	2.448E-04	1.189E-04	7.485E-05	4.834E-05	1.257E-05	4.589E-06	2.237E-06	1.302E-06
ESE	1.068E-02	8.771E-04	3.114E-04	1.564E-04	9.278E-05	5.733E-05	1.410E-05	5.253E-06	2.616E-06	1.517E-06
SE	2.035E-02	1.626E-03	5.459E-04	2.664E-04	1.545E-04	8.437E-05	1.585E-05	6.102E-06	3.115E-06	1.813E-06
SSE	3.322E-02	2.620E-03	8.606E-04	4.212E-04	2.680E-04	1.231E-04	3.014E-05	1.104E-05	5.568E-06	3.277E-06
S	4.614E-02	3.331E-03	1.037E-03	4.877E-04	3.245E-04	1.101E-04	2.618E-05	9.336E-06	4.596E-06	2.698E-06
SSW	3.476E-02	2.445E-03	7.425E-04	3.740E-04	2.169E-04	7.320E-05	1.716E-05	6.056E-06	3.006E-06	1.804E-06
SW	2.323E-02	2.162E-03	6.464E-04	2.961E-04	1.678E-04	6.266E-05	1.492E-05	5.115E-06	2.432E-06	1.356E-06
WSW	1.420E-02	1.654E-03	4.437E-04	1.988E-04	1.098E-04	3.772E-05	9.195E-06	2.883E-06	1.300E-06	7.271E-07
W	1.102E-02	1.483E-03	4.552E-04	2.069E-04	1.165E-04	3.828E-05	1.032E-05	3.528E-06	1.624E-06	8.945E-07
WNW	1.145E-02	1.819E-03	5.330E-04	2.576E-04	1.444E-04	4.935E-05	1.299E-05	4.384E-06	1.999E-06	1.073E-06
W	4.657E-02	5.083E-03	1.472E-03	6.516E-04	3.618E-04	1.164E-04	2.973E-05	1.062E-05	5.312E-06	3.116E-06
WNW	6.797E-02	4.961E-03	1.863E-03	9.411E-04	5.231E-04	1.785E-04	4.440E-05	1.629E-05	8.369E-06	5.041E-06

INDIVIDUAL ANNUAL BETA AIR DOSE (MILLIRADS)										
DISTANCE IN MILES										
DIR	0.0-1.	1.-2.	2.-3.	3.-4.	4.-5.	5.-10.	10.-20.	20.-30.	30.-40.	40.-50.
N	6.917E-02	6.062E-03	1.972E-03	9.675E-04	5.809E-04	2.225E-04	7.461E-05	3.314E-05	1.852E-05	1.208E-05
NNE	3.024E-02	2.651E-03	8.783E-04	4.396E-04	2.691E-04	1.504E-04	4.289E-05	1.728E-05	9.494E-06	6.121E-06
NE	1.874E-02	1.791E-03	6.038E-04	3.074E-04	1.892E-04	1.137E-04	3.204E-05	1.295E-05	7.163E-06	4.601E-06
ENE	7.891E-03	7.166E-04	2.453E-04	1.248E-04	7.577E-05	4.800E-05	1.381E-05	5.567E-06	3.135E-06	1.997E-06
E	6.817E-03	6.493E-04	2.339E-04	1.125E-04	7.079E-05	4.336E-05	1.247E-05	5.012E-06	2.723E-06	1.769E-06
ESE	8.274E-03	8.327E-04	2.931E-04	1.439E-04	8.540E-05	4.986E-05	1.366E-05	5.463E-06	2.942E-06	1.851E-06
SE	1.675E-02	1.642E-03	5.462E-04	2.738E-04	1.546E-04	5.839E-05	1.873E-05	7.810E-06	4.359E-06	2.788E-06
SSE	2.751E-02	2.656E-03	8.743E-04	4.374E-04	2.54E-04	1.254E-04	3.567E-05	1.447E-05	7.952E-06	5.139E-06
S	3.894E-02	3.469E-03	1.107E-03	5.378E-04	3.331E-04	1.331E-04	3.798E-05	1.552E-05	8.611E-06	5.608E-06
SSW	3.023E-02	2.614E-03	8.250E-04	4.234E-04	2.545E-04	9.624E-05	2.758E-05	1.130E-05	6.215E-06	4.189E-06
SW	1.939E-02	2.084E-03	6.366E-04	3.572E-04	1.814E-04	7.253E-05	2.110E-05	8.797E-06	4.978E-06	3.271E-06
WSW	1.212E-02	1.573E-03	4.265E-04	2.903E-04	1.161E-04	4.364E-05	1.253E-05	4.948E-06	2.723E-06	1.765E-06
W	8.928E-03	1.290E-03	3.933E-04	1.838E-04	9.771E-05	3.842E-05	1.155E-05	4.604E-06	2.453E-06	1.593E-06
WNW	9.182E-03	1.590E-03	4.537E-04	2.217E-04	1.283E-04	4.716E-05	1.376E-05	5.434E-06	2.965E-06	1.892E-06
W	3.987E-02	4.924E-03	1.447E-03	6.871E-04	3.689E-04	1.420E-04	4.223E-05	1.727E-05	9.672E-06	5.310E-06
WNW	5.649E-02	5.099E-03	1.911E-03	9.532E-04	5.541E-04	2.101E-04	6.245E-05	2.602E-05	1.472E-05	9.691E-06



## DOSE CALCULATION MODELS

To evaluate the radiological consequences of the routine release of liquid and gaseous effluents from the Cooper Nuclear Station, two computer codes were used: LADTAP 11 for liquid doses and GASPAR for gaseous doses. Both of these computer codes implement the dose calculational methodologies of U.S. NRC Regulatory Guide 1.109, Revision 1.

Source terms for each quarter are combined with station-specific demographic data and either hydrological dilution factors, for liquid dose calculations, or atmospheric diffusion estimates, for gaseous dose calculations.

For liquid dose calculations, the hydrological dilution factors used for input to LADTAP 11, as well as other input parameters, are listed in Table 12. Other inputs not specifically listed in this table are taken from Regulatory Guide 1.109, Revision 1. Semiannual doses are obtained by summing the contributions from the appropriate quarters.

For gaseous dose calculations, atmospheric diffusion estimates are obtained from the reduction and processing of onsite meteorological data, as described in Appendix B. Source terms for the semiannual period are obtained by summing source terms for the appropriate quarters. Additional input to GASPAR includes the following station-supplied data:

- 0- to 50- mile population distribution
- 0- to 50- mile meat, milk, and vegetable distributions
- Absolute humidity at Cooper Nuclear Station (14.61 g/m )
- The fraction of the year that the vegetables are grown (0.2)
- The fraction of the daily feed intake derived from pasture for milk and meat animals (0.5).

Other values used for input to GASPAR are default values from Regulatory Guide 1.109, Rev. 1.

Table 12. Values of Parameters Used to Make Dose Estimates  
Resulting from Liquid Discharges at Cooper Nuclear  
Station January-June 1990

Parameter	Values Assigned	
	Individual	Population
Cooling flow rate (cfs) *	665.69; 945.02	665.69; 945.02
Dilution factor	1	28.36; 42.43
Holding time:		
Fish	24 hr ***	168 hr ***
Drinking water	12 hr ***	22.4 hr **
Shoreline exposure	0 hr ***	22.4 hr **
Swimming	0 hr ***	22.4 hr **
Boating	0 hr ***	22.4 hr **

\* First and Second quarter station data for 1990, respectively.

\*\* Based on an average Missouri River water flow of 5.5 ft/sec,  
84 miles down the river.

\*\*\* Values from Regulatory Guide 1.109, Revision 1.

## References

- U.S. Nuclear Regulatory Commission, Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants", Revision 1, 1974.
- U.S. Nuclear Regulatory Commission, Regulatory Guide 1.23 (Safety Guide 23), "Onsite Meteorological Programs", Revision 0, 1972.
- U.S. Nuclear Regulatory Commission, Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors", Revision 0, 1977.
- U.S. Nuclear Regulatory Commission, NUREG/CR-2919, "XQDQDQ: Computer Program for the Meteorological Evaluation of Routine Effluent Releases at Nuclear Power Stations", 1982.
- U.S. Nuclear Regulatory Commission, Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors", Revision 0, 1976.
- U.S. Nuclear Regulatory Commission, NUREG-0597, "User's Guide to GASPAR Code", December 1980.
- U.S. Nuclear Regulatory Commission, NUREG/CR-1276, "User's Manual for LALYAP II: A Computer Code for Calculating Radiation exposure to Man from Routine Release of Nuclear Reactor Liquid Effluents", 1980.
- U.S. Nuclear Regulatory Commission, Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Release of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I", Revision 1, 1977.