

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORTSUPPLEMENTAL INFORMATION

FACILITY: H. B. Robinson

LICENSE: DPR-23

1. REGULATORY LIMITS

- A. Fission and Activation Gases: 15,000 uCi/sec. based on Xe-133.
- B. Iodines: $7.15E-03$ uCi/sec. based on I-131.
- C. Particulates, half lives > 8 days: $7.15E-03$ uCi/sec.
- D. Liquid Effluents: Tritium not to exceed annual daily average of 10.5 curies. All others not to exceed 10CFR20, Appendix B, Table 2, Column 2, except unidentified not to exceed annual daily limit average of 26 mCi/day.

2. MAXIMUM PERMISSIBLE CONCENTRATES

- A. Gaseous Effluent: The average annual release rates of gaseous wastes are limited to $\sum \frac{Q_i}{MPC_i} \leq 5.0E04 \text{ M}^3/\text{sec}$.
 Q_i is the annual release rate (Ci/sec) of any radioisotope, i , and $(MPC)_i$; in units of uCi/cc as defined in Column 1, Table II of Appendix B, 10CFR20, except that for isotopes of Iodine and particulates with half-lives greater than 8 days, the values of $(MPC)_i$ are reduced by a factor of 1/700.
- B. LIQUID EFFLUENTS: $1.00E-07$ uCi/cc unidentified
 $3.00E-03$ uCi/cc Tritium

3. AVERAGE ENERGY OF FISSION AND ACTIVATION GASES RELEASED

Third Quarter .153 MEV
 Fourth Quarter .153 MEV

4. MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

- A. Fission and Activation Gases: measured and determined by continuous monitors; periodic grab samples, radionuclide gamma analysis, and scintillation counting.
- B. Iodines: measured and determined by continuous sample monitors and radionuclide gamma analysis.
- C. Particulates: measured and determined by continuous sample monitors, radionuclide gamma analysis, gross alpha and beta counting.
- D. Liquid Effluents: measured and determined by composite sample analysis, individual sample analysis, radionuclide gamma analysis, gross alpha and beta counting, and liquid scintillation counting.

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5. BATCH RELEASES

A. Liquid

1. Number of Batch Releases: 258
2. Total Time Period for Batch Releases: $7.54E04$ Min.
3. Maximum Time Period for a Batch Release: $2.22E03$ Min.
4. Average Time Period for Batch Releases: $2.92E02$ Min.
5. Minimum Time Period for a Batch Release: $1.50E01$ Min.
6. Average Stream Flow during Periods of Release of Effluent into a Flowing Stream: $3.52E05$ GPM.

B. Gaseous

1. Number of Batch Releases: 88
2. Total Time Period for Batch Releases: $1.04E05$ Min.
3. Maximum Time Period for a Batch Release: $4.80E03$ Min.
4. Average Time Period for a Batch Release: $1.18E03$ Min.
5. Minimum Time Period for a Batch Release: $4.80E01$ Min.

6. ABNORMAL RELEASES

A. Liquid - none

B. Gaseous - none

TABLE 1A

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT: 1980

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	3rd QUARTER	4th QUARTER	% ERROR
A. FISSION AND ACTIVATION GASES				
1. Total Release	Ci	1.94E02	2.42E02	1.00E01
2. Average Release Rate	uCi/sec	2.44E01	3.04E01	
3. % of Tech. Spec. Limit	%	1.71E-01	6.57E-01	
4. Maximum Release Rate/Hour	uCi/sec	8.55E01	4.28E02	
B. IODINES				
1. Total Iodine-131	Ci	5.55E-06	1.02E-05	1.00E01
2. Average Release Rate	uCi/sec	6.98E-07	1.28E-06	
3. % of Tech. Spec. Limit	%	9.77E-03	1.80E-02	
4. Total Iodine	Ci	5.55E-06	1.94E-05	
C. PARTICULATES				
1. Particulates $T_{1/2} > 8$ days	Ci	2.84E-04	1.20E-04	1.00E01
2. Average Release Rate	uCi/sec	3.57E-05	1.51E-05	
3. % of Tech. Spec. Limit	%	1.28E-01	5.25E-02	
4. Gross Alpha Radioactivity	Ci	0.00E00	0.00E00	
5. Total Gross Radioactivity	Ci	2.84E-04	1.20E-04	
D. TRITIUM				
1. Total Release	Ci	1.23E00	1.47E00	1.00E01
2. Average Release Rate	uCi/sec	1.55E-01	1.85E-01	
3. % of Tech. Spec. Limit	%	1.55E-03	1.85E-03	

TABLE 1B

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT: 1980

GASEOUS EFFLUENTS - ELEVATED RELEASES

No elevated releases made at H. B. Robinson.

TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT: 1980

GASEOUS EFFLUENTS¹ - GROUND LEVEL RELEASES

		CONTINUOUS MODE		BATCH MODE	
UNITS		3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
1. FISSION GASES					
Xe-133	Ci	1.90E02	1.40E02	2.95E01	6.13E00
Xe-135	Ci	4.15E00	2.61E01	7.16E-01	9.18E-01
Ar-41	Ci	4.78E-02	7.50E01	1.25E-02	7.27E-02
Kr-85m	Ci	1.47E-02	5.99E-01	5.27E-03	1.43E-04
Xe-135m	Ci	1.93E-03	0.00E00	6.93E-04	0.00E00
Xe-131m	Ci	0.00E00	3.14E-03	0.00E00	7.45E-07
Total for Period	Ci	1.94E02	2.42E02	3.02E01	7.12E00
2. IODINES					
I-131	Ci	5.55E-06	1.02E-05	4.03E-04	1.37E-06
I-133	Ci	0.00E00	9.12E-06	1.78E-05	2.84E-06
I-135	Ci	0.00E00	0.00E00	0.00E00	0.00E00
Total for Period	Ci	5.55E-06	1.94E-05	4.21E-04	4.21E-06
3. PARTICULATES					
Co-58	Ci	7.75E-05	3.36E-05	2.42E-05	8.22E-06
Co-60	Ci	2.06E-04	8.15E-05	3.69E-05	2.67E-05
Mn-54	Ci	0.00E00	0.00E00	2.14E-05	5.00E-07
Cs-137	Ci	0.00E00	4.59E-06	4.09E-06	3.12E-06
Cs-134	Ci	0.00E00	0.00E00	5.36E-07	0.00E00
Ce-141	Ci	0.00E00	0.00E00	0.00E00	0.00E00
Co-57	Ci	0.00E00	0.00E00	0.00E00	0.00E00
Ce-139	Ci	0.00E00	0.00E00	0.00E00	0.00E00
Total for Period	Ci	2.84E-04	1.20E-04	8.71E-05	3.85E-05

¹ Continuous Accountability Includes Batch Accountability.

TABLE 2A

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT: 1980

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	3rd QUARTER	4th QUARTER	% ERROR
A. FISSION AND ACTIVATION PRODUCTS				
1. Total Release	Ci	1.93E-01	4.27E-02	1.00E01
2. Average Diluted Concentration	uCi/ml	1.18E-09	2.24E-10	
3. % of Applicable Limit	%	1.18E00	2.24E-01	
B. TRITIUM				
1. Total Release	Ci	2.08E01	3.53E01	1.00E01
2. Average Diluted Concentration	uCi/ml	1.27E-07	1.85E-07	
3. % of Applicable Limit	%	4.23E-03	6.16E-03	
C. DISSOLVED AND ENTRAINED GASES				
1. Total Release	Ci	4.22E-04	2.00E-03	1.00E01
2. Average Diluted Concentration	uCi/ml	2.57E-12	1.05E-11	
3. % of Applicable Limit	%	8.58E-05	3.49E-04	
D. GROSS ALPHA RADIOACTIVITY				
1. Total Release	Ci	0.00E00	0.00E00	1.00E00
E. VOLUME OF WASTE RELEASED				
	Liters	9.50E06	2.07E07	1.00E01
F. VOLUME OF DILUTION WATER				
	Liters	1.64E11	1.91E11	1.00E01
G. MAXIMUM CONCENTRATION OF GROSS RADIOACTIVITY RELEASED				
	uCi/ml	2.10E-08	2.93E-08	1.00E01

TABLE 2B

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT: 1980

LIQUID EFFLUENTS

NUCLIDES RELEASED	UNITS	CONTINUOUS MODE		BATCH MODE	
		3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
Co-58	Ci	5.50E-03	3.71E-03	1.22E-01	2.47E-03
Co-60	Ci	4.70E-04	1.01E-02	2.16E-02	1.87E-02
Cs-137	Ci	1.96E-03	3.12E-03	1.12E-02	5.53E-04
Cs-134	Ci	0.00E00	5.86E-04	1.78E-04	8.35E-05
Mn-54	Ci	0.00E00	2.25E-03	6.83E-04	2.61E-04
Sb-124	Ci	0.00E00	0.00E00	2.90E-02	0.00E00
Sb-125	Ci	0.00E00	0.00E00	0.00E00	0.00E00
Nb-97	Ci	0.00E00	0.00E00	0.00E00	2.18E-05
Cr-51	Ci	0.00E00	0.00E00	0.00E00	4.49E-04
Co-57	Ci	0.00E00	0.00E00	7.07E-06	0.00E00
Ag-110m	Ci	0.00E00	0.00E00	8.43E-05	1.85E-05
W-187	Ci	0.00E00	0.00E00	2.18E-05	0.00E00
Sr-89	Ci	0.00E00	0.00E00	0.00E00	0.00E00
Sr-90	Ci	0.00E00	0.00E00	1.40E-03	0.00E00
I-131	Ci	3.39E-04	3.50E-04	0.00E00	0.00E00
Na-22	Ci	0.00E00	0.00E00	1.26E-06	0.00E00
TOTAL	Ci	8.27E-03	2.01E-02	1.86E-01	2.26E-02
Xe-133	Ci	3.11E-05	2.78E-04	7.82E-05	0.00E00
Xe-135	Ci	3.10E-04	8.32E-04	2.46E-06	0.00E00
Ar-41	Ci	0.00E00	7.56E-04	0.00E00	0.00E00
Xe-135m	Ci	0.00E00	1.35E-04	0.00E00	0.00E00
TOTAL	Ci	3.41E-04	2.00E-03	8.07E-05	0.00E00

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT: 1980

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

1. Type of Waste	Units	Totals	% Error
A) Spent resins, filter sludges evaporator bottoms, etc.	M ³ Ci	3.01E02 1.55E02	1.00E01
B) Dry compressible waste, contaminated equipment, etc.	M ³ Ci	4.14E02 1.39E01	1.00E01
C) Irradiated components, control rods, etc.	M ³ Ci	0.00E00 0.00E00	0.00E00
D) Other - flyash transferred from east settling pond to the ash pond.	M ³ Ci	3.00E03 2.47E-02	0.00E00

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

	%	Ci
A) Cs-137	2.8	4.34E00
Co-58	42.4	6.57E01
Mn-54	4.3	6.67E00
Co-60	49.5	7.67E01
Others*	1.0	1.55E00
B) Co-58	18.0	2.50E00
Mn-54	1.3	1.81E-01
Co-60	68.7	9.55E00
Cr-51	8.3	1.15E00
Cs-137	2.7	3.75E-01
Others*	1.0	1.39E-01
C) None	0.0	0.00E00
D) Co-60	86.0	2.12E-02
Co-58	7.0	1.66E-03
Cs-137	7.0	1.87E-03

3. Solid Waste Disposition

Number of Shipments: 55

Mode of Transportation: Truck

Destination: Barnwell, South Carolina

B. IRRADIATED FUEL SHIPMENT (FOR STORAGE)

Number of Shipments: 5

Mode of Transportation: Rail

Destination: Brunswick Steam Electric Plant

Southport, North Carolina

License Number: DPR-071

Number of Bundles: 32

* Others include (Co-57, Sb-124, Nb-95, Fe-59, Cs-134, Zr-97, Cs-137)

DOSE FROM SHORELINE SEDIMENT
MREM/YEAR

	CHILD	TEEN	ADULT
WHOLE BODY	9.84E-08	4.71E-07	8.43E-08
SKIN	1.16E-07	5.53E-07	9.90E-08

DOSE FROM EATING FISH
MREM/YEAR

	CHILD	TEEN	ADULT
BONE	2.26E-07	1.93E-07	1.92E-07
LIVER	2.49E-07	2.85E-07	2.80E-07
WHOLE BODY	1.75E-07	2.15E-07	2.75E-07
THYROID	3.80E-08	3.89E-08	4.40E-08
KIDNEY	7.23E-08	8.50E-08	8.54E-08
LUNG	2.98E-08	3.69E-08	3.82E-08
GI-LLI	2.59E-07	7.47E-07	1.09E-06

DOSE FROM EATING GREEN LEAFY VEG. FROM CRITICAL GARDEN
MREM/YEAR

	CHILD	TEEN	ADULT
BONE	1.53E-05	8.46E-06	9.17E-06
LIVER	5.72E-04	4.31E-04	7.19E-04
WHOLE BODY	5.81E-04	4.86E-04	7.27E-04
THYROID	1.53E-03	1.12E-03	1.52E-03
KIDNEY	5.55E-04	4.68E-04	7.03E-04
LUNG	5.47E-04	4.62E-04	6.96E-04
GI-LLI	6.06E-04	5.83E-04	9.00E-04

DOSE FROM EATING PRODUCE FROM CRITICAL GARDEN
MREM/YEAR

	CHILD	TEEN	ADULT
BONE	1.87E-04	7.76E-05	4.56E-05
LIVER	8.63E-03	5.45E-03	4.42E-03
WHOLE BODY	8.78E-03	5.51E-03	4.47E-03
THYROID	8.39E-03	5.30E-03	4.32E-03
KIDNEY	8.36E-03	5.29E-03	4.31E-03
LUNG	8.32E-03	5.26E-03	4.30E-03
GI-LLI	9.16E-03	6.55E-03	5.47E-03

1-131 INHALATION DOSE FOR CRITICAL SECTOR AT SITE BOUNDARY MREM/YEAR

	INFANT	CHILD	TEEN	ADULT
BONE	7.93E-07	1.01E-06	7.41E-07	5.27E-07
LIVER	9.28E-07	1.01E-06	1.03E-06	7.47E-07
WHOLE BODY	4.10E-07	5.70E-07	5.52E-07	4.28E-07
THYROID	3.10E-04	3.40E-04	3.06E-04	2.49E-04
KIDNEY	1.03E-06	1.65E-06	1.76E-06	1.23E-06
LUNG	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GI-LLI	2.21E-08	5.94E-08	1.36E-07	1.31E-07

TOTAL INHALATION DOSE FOR CRITICAL SECTOR AT SITE BOUNDARY MREM/YEAR

	INFANT	CHILD	TEEN	ADULT
BONE	4.31E-06	6.75E-06	4.99E-06	3.56E-06
LIVER	2.33E-03	4.05E-03	4.59E-03	4.55E-03
WHOLE BODY	2.33E-03	4.05E-03	4.58E-03	4.55E-03
THYROID	2.68E-03	4.43E-03	4.91E-03	4.82E-03
KIDNEY	2.33E-03	4.05E-03	4.58E-03	4.55E-03
LUNG	4.17E-03	6.75E-03	8.12E-03	6.97E-03
GI-LLI	2.34E-03	4.09E-03	4.69E-03	4.67E-03

1-131 DOSE FROM DRINKING MILK FROM CRITICAL COW MREM/YEAR

	INFANT	CHILD	TEEN	ADULT
BONE	4.46E-06	2.14E-06	3.82E-07	4.86E-07
LIVER	5.26E-06	2.15E-06	1.23E-06	6.95E-07
WHOLE BODY	2.31E-06	1.22E-06	6.63E-07	3.98E-07
THYROID	1.73E-03	7.11E-04	3.60E-04	2.28E-04
KIDNEY	6.14E-06	3.53E-06	2.13E-06	1.19E-06
LUNG	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GI-LLI	1.88E-07	1.92E-07	2.44E-07	1.83E-07

TOTAL DOSE FROM DRINKING MILK FROM CRITICAL COW MREM/YEAR

	INFANT	CHILD	TEEN	ADULT
BONE	2.68E-05	1.61E-05	6.68E-06	3.68E-06
LIVER	1.65E-04	1.03E-04	6.45E-05	4.76E-05
WHOLE BODY	1.41E-04	9.33E-05	5.99E-05	4.63E-05
THYROID	1.87E-03	8.02E-04	4.17E-04	2.71E-04
KIDNEY	1.45E-04	9.45E-05	5.96E-05	4.43E-05
LUNG	1.34E-04	8.82E-05	5.53E-05	4.26E-05
GI-LLI	1.37E-04	9.34E-05	6.50E-05	5.08E-05

WHOLE BODY DOSES FROM AIR SUBMERSION IN RADIONOBLE GASES MREM/YEAR

DOSE FOR CRITICAL SECTOR AT SITE BOUNDARY= 7.60E-01 MREM/6 MOS.

	RADIAL DISTANCE, MILES				
	0.5	1.5	2.5	3.5	4.5
S	5.57E-02	1.85E-02	8.58E-03	5.32E-03	3.71E-03
SSW	4.25E-02	1.41E-02	6.37E-03	3.84E-03	2.62E-03
SW	1.97E-02	6.46E-03	2.86E-03	1.70E-03	1.15E-03
WSW	1.41E-02	4.69E-03	2.12E-03	1.23E-03	8.76E-04
W	8.05E-03	2.64E-03	1.16E-03	6.84E-04	4.61E-04
WNW	9.12E-03	3.02E-03	1.37E-03	8.23E-04	5.63E-04
NW	1.21E-02	3.95E-03	1.77E-03	1.06E-03	7.23E-04
NNW	2.97E-02	1.02E-02	4.78E-03	2.91E-03	2.01E-03
N	6.44E-02	2.19E-02	1.02E-02	6.30E-03	4.33E-03
NNE	5.72E-02	2.01E-02	9.27E-03	5.61E-03	3.85E-03
NE	3.53E-02	1.21E-02	5.57E-03	3.33E-03	2.32E-03
ENE	2.43E-02	8.42E-03	3.87E-03	2.33E-03	1.61E-03
E	1.73E-02	5.94E-03	2.75E-03	1.66E-03	1.14E-03
ESE	1.45E-02	5.00E-03	2.26E-03	1.36E-03	2.21E-03
SE	3.22E-02	1.06E-02	5.03E-03	3.15E-03	2.21E-03
SSE	1.20E-01	3.93E-02	1.86E-02	1.13E-02	3.34E-03

	RADIAL DISTANCE, MILES				
	7.5	15.0	25.0	35.0	45.0
S	1.83E-03	6.57E-04	2.97E-04	1.72E-04	1.14E-04
SSW	1.25E-03	4.34E-04	1.90E-04	1.09E-04	7.13E-05
SW	5.41E-04	1.83E-04	7.93E-05	4.52E-05	2.95E-05
WSW	4.16E-04	1.45E-04	6.35E-05	3.64E-05	2.39E-05
W	2.15E-04	7.22E-05	3.09E-05	1.77E-05	1.15E-05
WNW	2.70E-04	9.43E-05	4.16E-05	2.39E-05	1.57E-05
NW	3.47E-04	1.21E-04	5.32E-05	3.03E-05	2.01E-05
NNW	9.74E-04	3.44E-04	1.52E-04	8.76E-05	5.74E-05
N	2.14E-03	7.66E-04	3.42E-04	1.97E-04	1.30E-04
NNE	1.85E-03	6.41E-04	2.81E-04	1.61E-04	1.05E-04
NE	1.11E-02	3.87E-04	1.71E-04	9.35E-05	6.46E-05
ENE	7.73E-04	2.70E-04	1.19E-04	6.83E-05	4.51E-05
E	5.43E-04	1.83E-04	8.22E-05	4.71E-05	3.03E-05
ESE	4.38E-04	1.49E-04	6.46E-05	3.69E-05	7.00E-05
SE	1.10E-03	4.02E-04	1.83E-04	1.06E-04	7.00E-05
SSE	4.16E-03	1.54E-03	7.06E-04	4.14E-04	2.73E-04

SKIN DOSES FROM AIR SUBMERSION IN RADIONOBLE GASES MREM/YEAR

DOSE FOR CRITICAL SECTOR AT SITE BOUNDARY= 1.33E+00 MREM/6 MOS.

	RADIAL DISTANCE, MILES				
	0.5	1.5	2.5	3.5	4.5
S	1.01E-01	3.36E-02	1.56E-02	9.68E-03	6.75E-03
SSW	7.73E-02	2.56E-02	1.16E-02	6.98E-03	4.77E-03
SW	3.59E-02	1.17E-02	5.20E-03	3.09E-03	2.09E-03
WSW	2.56E-02	8.52E-03	3.85E-03	2.33E-03	1.59E-03
W	1.46E-02	4.81E-03	2.11E-03	1.24E-03	8.39E-04
WNW	1.66E-02	5.50E-03	2.48E-03	1.50E-03	1.02E-03
NW	2.20E-02	7.17E-03	3.22E-03	1.94E-03	1.32E-03
NNW	5.40E-02	1.86E-02	8.69E-03	5.30E-03	3.65E-03
N	1.17E-01	3.98E-02	1.86E-02	1.15E-02	7.96E-03
NNE	1.04E-01	3.65E-02	1.69E-02	1.02E-02	7.01E-03
NE	6.42E-02	2.20E-02	1.01E-02	6.15E-03	4.21E-03
ENE	4.51E-02	1.53E-02	7.04E-03	4.25E-03	2.93E-03
E	3.14E-02	1.08E-02	5.00E-03	3.02E-03	2.07E-03
ESE	2.64E-02	9.08E-03	4.11E-03	2.47E-03	1.62E-03
SE	5.86E-02	1.94E-02	9.15E-03	5.73E-03	3.92E-03
SSE	2.19E-01	7.14E-02	3.39E-02	2.15E-02	1.52E-02

	RADIAL DISTANCE, MILES				
	7.5	15.0	25.0	35.0	45.0
S	3.32E-03	1.19E-03	5.40E-04	3.14E-04	2.07E-04
SSW	2.28E-03	7.90E-04	3.46E-04	1.99E-04	1.30E-04
SW	9.84E-04	3.32E-04	1.44E-04	8.23E-05	5.36E-05
WSW	7.57E-04	2.63E-04	1.16E-04	6.62E-05	4.34E-05
W	3.92E-04	1.31E-04	5.63E-05	3.21E-05	2.09E-05
WNW	4.90E-04	1.71E-04	7.57E-05	4.34E-05	2.85E-05
NW	6.32E-04	2.19E-04	9.68E-05	5.60E-05	3.65E-05
NNW	1.77E-03	6.25E-04	2.76E-04	1.59E-04	1.04E-04
N	3.88E-03	1.39E-03	6.22E-04	3.59E-04	2.37E-04
NNE	3.36E-03	1.17E-03	5.10E-04	2.93E-04	1.91E-04
NE	2.02E-02	7.04E-04	3.11E-04	1.79E-04	1.17E-04
ENE	1.41E-03	4.90E-04	2.17E-04	1.25E-04	8.20E-05
E	9.87E-04	3.42E-04	1.49E-04	8.56E-05	5.60E-05
ESE	7.96E-04	2.72E-04	1.17E-04	6.71E-05	4.27E-05
SE	2.00E-03	7.31E-04	3.32E-04	1.93E-04	1.27E-04
SSE	7.57E-03	2.80E-03	1.28E-03	7.54E-04	4.97E-04

	RADIAL DISTANCE, MILES				
	0.5	1.5	2.5	3.5	4.5
S	8.92E-04	2.95E-04	6.43E-04	5.43E-04	4.93E-04
SSW	3.40E-03	1.41E-04	4.08E-04	2.46E-04	5.04E-04
SW	1.91E-03	1.31E-03	2.77E-04	1.56E-04	2.77E-04
WSW	2.20E-03	6.00E-04	9.11E-05	2.06E-04	1.22E-04
W	6.04E-04	8.72E-05	9.99E-05	6.93E-05	8.86E-05
WNW	2.37E-04	1.93E-04	3.55E-05	8.23E-06	4.22E-05
NW	6.05E-05	2.33E-04	1.50E-04	5.11E-05	7.06E-05
NNW	0.00E+00	5.10E-05	1.24E-04	2.91E-05	0.00E+00
N	0.00E+00	2.19E-04	4.40E-04	6.11E-04	1.12E-03
NNE	0.00E+00	1.95E-03	1.73E-03	9.93E-04	2.89E-04
NE	0.00E+00	1.43E-03	4.74E-04	3.11E-04	1.35E-04
ENE	6.45E-04	4.21E-05	1.06E-03	2.75E-04	1.72E-04
E	8.64E-05	0.00E+00	4.40E-05	8.17E-04	1.54E-03
ESE	4.79E-04	5.09E-04	7.47E-05	1.09E-04	3.15E-03
SE	1.61E-04	1.26E-03	9.41E-04	2.04E-03	3.15E-03
SSE	1.20E-03	1.02E-03	5.39E-03	6.33E-03	2.09E-03

	RADIAL DISTANCE, MILES				
	7.5	15.0	25.0	35.0	45.0
S	3.28E-03	1.71E-03	1.52E-03	2.03E-03	1.06E-03
SSW	8.20E-04	2.50E-03	2.25E-03	9.64E-03	8.09E-04
SW	9.51E-04	3.63E-04	4.55E-04	8.06E-04	8.15E-04
WSW	7.31E-04	3.74E-04	1.25E-03	2.46E-04	9.70E-04
W	7.21E-05	1.87E-04	1.47E-04	8.32E-05	4.04E-05
WNW	6.93E-05	1.33E-04	2.43E-04	1.62E-04	3.87E-04
NW	2.71E-04	1.47E-04	2.69E-04	2.21E-04	2.51E-04
NNW	2.52E-04	3.11E-04	7.90E-04	4.45E-04	1.53E-03
N	1.11E-03	1.25E-03	1.96E-03	1.73E-03	7.43E-04
NNE	9.56E-04	9.19E-04	2.73E-03	1.60E-03	1.63E-03
NE	1.41E-02	1.08E-03	1.50E-03	1.03E-03	8.75E-04
ENE	9.79E-04	7.28E-04	1.74E-03	7.97E-04	7.75E-04
E	1.65E-03	4.92E-04	3.26E-04	3.77E-04	8.21E-04
ESE	5.81E-04	2.14E-03	2.26E-03	2.70E-04	7.32E-04
SE	2.61E-03	2.02E-03	5.96E-03	8.39E-04	7.32E-04
SSE	7.14E-03	9.64E-03	7.88E-03	4.20E-03	5.57E-03

TOTAL POPULATION INTEGRATED WHOLE BODY DOSE= 1.93E-01 PERSON-REM

POPULATION INTEGRATED INHALATION DOSE
PERSON-REM/YEAR OR THYROID-REM/YEAR

	INFANT	CHILD	TEEN	ADULT
WHOLE BODY	1.12E-05	1.96E-04	1.73E-04	7.38E-04
THYROID	1.29E-05	2.14E-04	1.91E-04	7.81E-04



Carolina Power & Light Company

RECEIVED

rcb 014 '81

Robinson Plant
C P & L Co.

Company Correspondence

Raleigh, North Carolina
January 26, 1981

MEMORANDUM TO: Mr. R. B. Starkey, Jr.

FROM: B. D. McFeaters

SUBJECT: Meteorological Data - Semiannual Report

The attached information, described as follows, is provided for the January, 1981 Effluent and Waste Disposal Report:

1. Enclosures 1 and 2 - Summary report of meteorological data for each calendar quarter. The information may be reproduced and transmitted to the Nuclear Regulatory Commission as per Regulatory Guide 1.21, Section C.1.
2. Enclosure 3 - Estimates of relative concentration (X/Q) and deposition (D/Q) for the six-month period July 1, 1980, through December 31, 1980. The values presented are to be used for the dose evaluation from continuous gaseous releases.
3. Enclosure 4 - Summary report of meteorological data used as input to the computer code for the X/Q and D/Q calculations.

If there are any questions on the enclosures, please do not hesitate to call.

TDD/tl
Enclosurescc: Mr. B. H. Webster (w/o attachment)
Mr. S. R. Zimmerman (w/o attachment)

JOINT FREQUENCY OF WIND DIRECTION AND SPEED
THIRD QUARTER 1980
H. B. ROBINSON STEAM ELECTRIC PLANT

The attached tables present the number and corresponding frequency of wind direction occurrences by wind speed class as recorded at the on-site meteorological system during the period July 1 through September 30, 1980.

The frequencies are presented as a percent of total occurrences for each stability class. Also included is a summary for all stability classes. The first eight tables are for the upper sensor elevation (60 meter); the last eight tables are for the lower (10 meter) sensor elevation.

Pertinent information available from the tables is as follows:

1. Stability

Percent occurrence Pasquill categories:

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
21.1	5.7	6.5	28.7	28.0	9.0	1.0

2. <u>Wind Speed</u>	<u>10 Meter</u>	<u>60 Meter</u>
Average Speed (mph)	5.4	8.5
Percent Calm	0.4	0.1
Percent Less than 3.5 mph	25.9	6.6
3. <u>Wind Direction</u>	<u>10 Meter</u>	<u>60 Meter</u>
Prevailing Direction	SSW	SSW
Percent Occurrence	15.1	12.2
4. <u>Data Recovery</u>	<u>10 Meter</u>	<u>60 Meter</u>
Percent Good Hours	98.9	98.9

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#G2 (MDREW) - JAN. 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15 FRIDAY, JANUARY 23, 1981 43

SITE=KDBN

YEAR=80

QUARTER=THIRD

SUMMARY OVER ALL STAB

UPWIND DEG	UPWIND SPD							TOTAL	AVERAGE UPWIND SPD
	LALM	2.2-2.2	2.5-7.5	7.5-12.5	12.5-15.5	15.5-25	25-25		
N	0.1/ 0.00	8/ 0.37	60/ 2.75	104/ 4.76	17/ 0.78	/	1/ 0.05	190.1/ 6.71	8.600475
NNE	0.1/ 0.00	8/ 0.37	60/ 2.75	97/ 4.44	57/ 2.61	2/ 0.09	/	224.1/10.26	9.715375
NE	0.1/ 0.00	13/ 0.60	57/ 2.61	67/ 3.07	27/ 1.24	/	/	164.1/ 7.52	8.559506
ENE	0.1/ 0.00	11/ 0.50	44/ 2.02	47/ 2.15	10/ 0.46	/	1/ 0.05	113.1/ 5.80	8.055940
E	0.1/ 0.00	14/ 0.64	35/ 1.60	36/ 1.63	3/ 0.14	/	/	88.1/ 4.04	6.65293
ESE	0.1/ 0.01	19/ 0.87	46/ 2.11	17/ 0.78	3/ 0.14	/	/	85.1/ 3.90	5.710644
SE	0.1/ 0.00	11/ 0.50	61/ 2.79	40/ 1.83	8/ 0.37	/	/	120.1/ 5.50	7.102633
SSE	0.1/ 0.00	14/ 0.64	55/ 2.52	79/ 3.62	16/ 0.73	/	/	164.1/ 7.52	8.160869
S	0.0/ 0.00	5/ 0.23	56/ 2.57	127/ 5.82	45/ 2.06	/	/	233.0/10.67	9.606732
SSW	0.0/ 0.00	6/ 0.27	64/ 2.93	163/ 7.47	33/ 1.51	/	/	266.0/12.19	9.176453
SW	0.0/ 0.00	6/ 0.27	66/ 3.11	131/ 6.00	27/ 1.24	1/ 0.05	/	233.0/10.66	9.025751
WSW	0.0/ 0.00	7/ 0.32	53/ 2.43	51/ 2.34	13/ 0.60	/	/	124.0/ 5.68	8.064237
W	0.0/ 0.00	3/ 0.14	24/ 1.10	25/ 1.15	/	/	/	52.0/ 2.38	7.536679
WNW	0.0/ 0.00	6/ 0.27	19/ 0.87	15/ 0.60	3/ 0.14	1/ 0.05	/	42.0/ 1.93	7.535114
NW	0.1/ 0.00	8/ 0.37	16/ 0.73	10/ 0.46	4/ 0.18	2/ 0.09	/	40.1/ 1.83	7.617272
NNW	0.0/ 0.00	3/ 0.14	21/ 0.96	16/ 0.73	4/ 0.18	/	/	44.0/ 2.02	7.523456
TOTAL	1/ 0.05	142/ 6.50	739/33.85	1023/46.86	270/12.37	6/ 0.27	2/ 0.09	2163/ 100	8.467679

NUMBER OF BAD RECORDS: 25

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MDFREQ) - JAN 1961
 JOINT OCCURRENCE FREQUENCIES FOR UPWNUDEG AND UPWNUSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15115 FRIDAY, JANUARY 23, 1961 14

SITE=RUBN

YEAR=60

QUARTER=THIRD

STAB=A

UPWNUDEG

UPWNUSPD

	WALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNUSPD
N	/	/	9/ 0.41	30/ 1.37	1/ 0.05	/	/	40.0/ 1.83	9.097463
NNE	/	/	8/ 0.37	21/ 0.96	1/ 0.05	/	/	30.0/ 1.37	8.601664
NE	/	2/ 0.09	17/ 0.78	18/ 0.82	7/ 0.32	/	/	44.0/ 2.02	9.019656
ENE	/	1/ 0.05	13/ 0.60	13/ 0.60	5/ 0.23	/	/	32.0/ 1.47	8.514645
E	/	2/ 0.09	6/ 0.27	6/ 0.27	1/ 0.05	/	/	15.0/ 0.69	7.626250
ESE	/	1/ 0.05	13/ 0.60	2/ 0.09	/	/	/	16.0/ 1.73	4.986867
SE	/	1/ 0.05	25/ 1.15	6/ 0.27	1/ 0.05	/	/	33.0/ 1.51	6.191983
SSE	/	/	7/ 0.32	14/ 0.64	2/ 0.09	/	/	23.0/ 1.05	6.459249
S	/	/	4/ 0.18	16/ 0.73	9/ 0.41	/	/	29.0/ 1.33	11.03195
SSW	/	/	10/ 0.46	25/ 1.15	16/ 0.73	/	/	51.0/ 2.34	10.43005
SW	/	/	20/ 0.92	37/ 1.64	20/ 0.92	/	/	77.0/ 3.53	9.842292
WSW	/	/	8/ 0.37	24/ 1.10	5/ 0.23	/	/	37.0/ 1.64	9.260342
W	/	/	4/ 0.18	10/ 0.46	/	/	/	14.0/ 0.64	8.922516
WNW	/	1/ 0.05	3/ 0.14	3/ 0.14	1/ 0.05	/	/	8.0/ 0.37	6.656409
NW	/	/	2/ 0.09	/	3/ 0.14	/	/	5.0/ 0.23	11.56901
NNW	/	/	4/ 0.18	/	2/ 0.09	/	/	6.0/ 0.27	6.33144
TOTAL	0/ 0.00	8/ 0.37	153/ 7.01	225/ 10.31	74/ 3.39	0/ 0.00	0/ 0.00	460/ 21.1	9.008596

NUMBER OF BAD RECORDS: 0

CPL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM INDUFG2 (MUPREG) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPMWDEG AND UPMWDSPU
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15, FRIDAY, JANUARY 23, 1981

SITE=KUCN

YEAR=60

QUARTER=THIRD

STAB=B

UPMWSLU

UPMWSLU	FIELD	7.5-30.2	30.2-7.5	7.5-12.5	12.5-18.5	18.5-25	25-75	TOTAL	AVERAGE UPMWDSPU
N	/	/	7/ 0.32	15/ 0.69	1/ 0.05	/	/	23.0/ 1.05	0.008533
NWE	/	/	7/ 0.32	9/ 0.41	1/ 0.05	/	/	17.0/ 0.78	7.021455
NE	/	/	8/ 0.37	3/ 0.14	/	/	/	11.0/ 0.20	0.278095
ENE	/	/	3/ 0.14	/	3/ 0.14	/	/	7.0/ 0.34	11.00783
E	/	1/ 0.05	7/ 0.32	1/ 0.05	/	/	/	9.0/ 0.41	5.063941
ESE	/	/	4/ 0.18	/	1/ 0.05	/	/	5.0/ 0.25	7.79725
SE	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	5.091033
SSE	/	/	3/ 0.14	1/ 0.05	1/ 0.05	/	/	5.0/ 0.25	8.25079
S	/	/	/	1/ 0.05	1/ 0.05	/	/	2.0/ 0.09	12.36110
SSW	/	/	2/ 0.09	2/ 0.09	2/ 0.09	/	/	6.0/ 0.27	9.332441
SW	/	/	7/ 0.32	4/ 0.18	/	/	/	11.0/ 0.50	7.200568
WSW	/	1/ 0.05	9/ 0.41	2/ 0.09	1/ 0.05	/	/	13.0/ 0.60	7.333151
W	/	/	2/ 0.09	7/ 0.05	/	/	/	3.0/ 0.14	0.225335
WNW	/	/	3/ 0.14	3/ 0.14	/	/	/	6.0/ 0.27	8.916375
NW	/	/	/	1/ 0.05	/	/	/	2.0/ 0.05	10.28847
NNW	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	0.094435
TOTAL	0/ 0.00	2/ 0.09	66/ 3.02	45/ 2.06	11/ 0.50	0/ 0.00	1/ 0.05	125/ 5.7	7.937322

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
PROGRAM IMD01#02 (MDFREQ) - JAN 1981
JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15 FRIDAY, JANUARY 23, 1981 16

SITE=KUBN

YEAR=80

QUARTER=THIRD

STAB=C

UPWIND DEG	UPWIND SPD							TOTAL	AVERAGE UPWIND SPD
	0-1.5	1.5-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25		
N	/	/	7/ 0.32	8/ 0.37	1/ 0.05	/	/	16.0/ 0.73	8.189656
NNE	/	1/ 0.05	6/ 0.27	5/ 0.23	2/ 0.09	/	/	14.0/ 0.64	7.839234
NE	/	1/ 0.05	4/ 0.18	9/ 0.41	4/ 0.18	/	/	18.0/ 0.62	9.534394
ENE	/	/	3/ 0.14	5/ 0.23	1/ 0.05	/	/	9.0/ 0.41	6.000263
E	/	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	5.0/ 0.23	10.015
ESE	/	2/ 0.09	3/ 0.14	/	/	/	/	5.0/ 0.23	9.41554
SE	/	1/ 0.05	4/ 0.18	2/ 0.09	2/ 0.09	/	/	9.0/ 0.41	8.085521
SSE	/	1/ 0.05	4/ 0.18	/	2/ 0.09	/	/	7.0/ 0.32	7.350553
S	/	/	/	2/ 0.09	3/ 0.14	/	/	5.0/ 0.23	12.79306
SSW	/	1/ 0.05	1/ 0.05	6/ 0.27	3/ 0.14	/	/	11.0/ 0.50	9.765466
SW	/	2/ 0.09	9/ 0.41	7/ 0.32	1/ 0.05	1/ 0.05	/	20.0/ 0.92	8.176255
WSW	/	/	7/ 0.32	3/ 0.14	/	/	/	10.0/ 0.40	7.220745
W	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	8.079037
WNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	8.620075
NW	/	/	/	3/ 0.14	/	1/ 0.05	/	4.0/ 0.18	12.14407
NNW	/	/	2/ 0.09	/	1/ 0.05	/	/	3.0/ 0.14	8.040400
TOTAL	0/ 0.00	9/ 0.41	54/ 2.47	55/ 2.52	21/ 0.96	2/ 0.09	0/ 0.00	141/ 6.5	8.363742

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM 1MD01702 (MDFREQ) - JAN 1961
 JOINT OCCURRENCE FREQUENCIES FOR UPWNUDEG AND UPWNUSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15 FRIDAY, JANUARY 23, 1961 17

SITE=ROBN YEAR=60 QUARTER=THIRD STAB=U

UPWNUDEG	UPWNUSPD							TOTAL	AVERAGE UPWNUSPD
	CALM	2.5-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	≥ 25		
N	/	2/ 0.09	15/ 0.69	26/ 1.19	9/ 0.41	/	1/ 0.05	53.0/ 2.43	9.566766
NNE	/	3/ 0.14	12/ 0.55	45/ 2.06	51/ 2.34	2/ 0.09	/	113.0/ 5.10	11.68076
NE	/	1/ 0.05	13/ 0.60	29/ 1.28	16/ 0.73	/	/	58.0/ 2.66	10.17069
ENE	/	2/ 0.09	13/ 0.60	25/ 1.15	1/ 0.05	/	/	41.0/ 1.69	8.034903
E	/	4/ 0.18	14/ 0.64	16/ 0.73	1/ 0.05	/	/	35.0/ 1.60	7.07087
ESE	/	2/ 0.09	13/ 0.60	8/ 0.37	1/ 0.05	/	/	24.0/ 1.10	6.613127
SE	/	2/ 0.09	17/ 0.78	15/ 0.69	2/ 0.09	/	/	36.0/ 1.05	7.032054
SSE	/	6/ 0.27	10/ 0.46	19/ 0.87	9/ 0.41	/	/	44.0/ 2.02	9.038607
S	/	1/ 0.05	13/ 0.60	44/ 2.02	24/ 1.10	/	/	82.0/ 3.76	10.67403
SSW	/	3/ 0.14	10/ 0.46	34/ 1.56	7/ 0.32	/	/	54.0/ 2.47	9.257712
SW	/	/	11/ 0.50	16/ 0.73	3/ 0.14	/	/	30.0/ 1.51	8.747704
WSW	/	1/ 0.05	10/ 0.46	4/ 0.18	4/ 0.18	/	/	19.0/ 0.67	8.011005
W	/	3/ 0.14	5/ 0.23	1/ 0.05	/	/	/	9.0/ 0.41	4.845161
WNW	/	1/ 0.05	3/ 0.14	2/ 0.09	1/ 0.05	1/ 0.05	/	8.0/ 0.37	8.804845
NW	/	4/ 0.18	2/ 0.09	1/ 0.05	/	/	/	7.0/ 0.32	5.952947
NNW	/	1/ 0.05	7/ 0.32	4/ 0.18	1/ 0.05	/	/	13.0/ 0.60	7.013761
TOTAL	0/ 0.00	36/ 1.65	168/ 7.70	286/ 13.19	130/ 5.96	3/ 0.14	1/ 0.05	626/ 26.7	9.36763

NUMBER OF BAD RECORDS: 0

CPL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM INCLUDE2 (MURKIN) - JAN 1961
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

12:12 FRIDAY, JANUARY 23, 1961 16

SITE=KUBN

YEAR=60

QUARTER=THIRU

STAB=E

UPRNDSPU

SALM 2.2-3.2

3.2-7.5

7.5-14.2

14.2-18.5

18.5-25

25-25

TOTAL

AVERAGE
UPRNDSPU

UPRNDSPU	SALM	2.2-3.2	3.2-7.5	7.5-14.2	14.2-18.5	18.5-25	25-25	TOTAL	AVERAGE UPRNDSPU
N	/	4/ 0.09	10/ 0.73	13/ 0.60	4/ 0.18	/	/	35.0/ 1.00	7.070125
NNE	/	2/ 0.09	17/ 0.78	12/ 0.55	2/ 0.09	/	/	33.0/ 1.01	7.40303
NE	/	3/ 0.14	12/ 0.55	7/ 0.34	/	/	/	22.0/ 1.01	5.901454
ENE	/	5/ 0.43	7/ 0.32	3/ 0.14	/	/	/	15.0/ 0.49	4.003521
E	/	3/ 0.14	6/ 0.27	10/ 0.46	/	/	/	19.0/ 0.87	6.592706
ESE	/	4/ 0.16	8/ 0.37	6/ 0.27	1/ 0.05	/	/	19.0/ 0.87	6.592706
SE	/	4/ 0.18	7/ 0.32	12/ 0.55	3/ 0.14	/	/	40.0/ 1.19	7.070275
SSE	/	4/ 0.18	15/ 0.87	30/ 1.65	2/ 0.09	/	/	61.0/ 2.79	8.46574
S	/	2/ 0.09	31/ 1.42	50/ 2.57	7/ 0.32	/	/	90.0/ 4.40	8.400700
SSW	/	1/ 0.05	32/ 1.47	61/ 3.71	3/ 0.14	/	/	117.0/ 5.50	8.790705
SW	/	3/ 0.14	10/ 0.73	51/ 2.54	2/ 0.05	/	/	72.0/ 3.50	8.903755
WSW	/	3/ 0.14	17/ 0.78	14/ 0.64	3/ 0.14	/	/	37.0/ 1.07	7.062470
W	/	/	10/ 0.46	10/ 0.46	/	/	/	40.0/ 0.92	7.45670
WNW	/	1/ 0.05	6/ 0.37	3/ 0.14	1/ 0.05	/	/	13.0/ 0.60	6.0043003
WN	/	1/ 0.05	8/ 0.37	4/ 0.18	1/ 0.05	1/ 0.05	/	15.0/ 0.69	6.016451
WNW	/	1/ 0.05	4/ 0.18	7/ 0.32	/	/	/	14.0/ 0.55	7.700010
TOTAL	0/ 0.00	39/ 1.79	218/ 9.99	325/ 14.89	29/ 1.33	1/ 0.05	0/ 0.00	612/ 26.0	7.996741

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15 FRIDAY, JANUARY 23, 1981 49

SITE=ROBN

YEAR=80

QUARTER=THIRD

STAB=F

UPWIND SPD

UPWIND DEG	CALM	7.5-3.2	3.2-7.5	7.5-12.2	12.2-18.5	18.5-25	25-25	TOTAL	AVERAGE UPWIND SPD
N	0.1/ 0.00	4/ 0.18	6/ 0.27	10/ 0.40	1/ 0.05	/	/	21.1/ 0.97	6.995597
NNE	0.0/ 0.00	2/ 0.09	9/ 0.41	4/ 0.18	/	/	/	15.0/ 0.69	6.079704
NE	0.1/ 0.01	5/ 0.23	2/ 0.09	2/ 0.09	/	/	/	9.1/ 0.46	4.677129
ENE	0.1/ 0.00	3/ 0.14	4/ 0.18	1/ 0.05	/	/	/	8.1/ 0.37	4.712231
E	0.1/ 0.00	4/ 0.18	1/ 0.05	/	/	/	/	5.1/ 0.26	3.003090
ESE	0.2/ 0.01	9/ 0.41	5/ 0.23	1/ 0.05	/	/	/	15.2/ 0.70	3.792405
SE	0.0/ 0.00	2/ 0.09	6/ 0.27	4/ 0.18	/	/	/	12.0/ 0.55	6.286475
SSE	0.1/ 0.00	3/ 0.14	10/ 0.46	9/ 0.41	/	/	/	22.1/ 1.01	6.529858
S	0.0/ 0.00	2/ 0.09	6/ 0.37	8/ 0.37	1/ 0.05	/	/	19.0/ 0.87	7.353674
SSW	0.0/ 0.00	1/ 0.05	8/ 0.37	14/ 0.64	2/ 0.09	/	/	25.0/ 1.15	6.17942
SW	0.0/ 0.00	1/ 0.05	5/ 0.23	15/ 0.69	/	/	/	21.0/ 0.96	6.315076
WSW	0.0/ 0.00	2/ 0.09	2/ 0.09	4/ 0.18	/	/	/	8.0/ 0.37	6.240050
W	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	6.43755
WNW	0.0/ 0.00	1/ 0.05	/	1/ 0.05	/	/	/	2.0/ 0.09	5.911267
NW	0.1/ 0.00	3/ 0.14	4/ 0.18	1/ 0.05	/	/	/	8.1/ 0.37	4.08341
WNW	0.0/ 0.00	1/ 0.05	2/ 0.09	1/ 0.05	/	/	/	4.0/ 0.18	5.975010
TOTAL	1/ 0.05	43/ 1.97	73/ 3.34	76/ 3.48	4/ 0.18	0/ 0.00	0/ 0.00	197/ 9.0	6.428604

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM 1MD01#02 (MDFREQ) - JAN-1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15 FRIDAY, JANUARY 23, 1981 20

SITE=RUBN YEAR=66 QUARTER=THIRD STAB=6

UPWIND DEG	UPWIND SPD							TOTAL	AVERAGE UPWIND SPD
	CALM	2.2-3.2	3.2-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25		
N	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	7.653925
NNE	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	8.220774
NE	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.451725
ENE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	3.6019
E	/	/	/	/	/	/	/	0.0/ 0.00	
ESE	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	2.918124
SE	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	3.218274
SSE	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.161412
S	/	/	/	/	/	/	/	0.0/ 0.00	
SSW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	5.968324
SW	/	/	/	1/ 0.05	1/ 0.05	/	/	2.0/ 0.09	12.1344
WSW	/	/	/	/	/	/	/	0.0/ 0.00	
W	/	/	/	/	/	/	/	0.0/ 0.00	
WNW	/	2/ 0.09	1/ 0.05	1/ 0.05	/	/	/	4.0/ 0.18	4.446056
NW	/	/	/	/	/	/	/	0.0/ 0.00	
NNW	/	/	/	3/ 0.14	/	/	/	3.0/ 0.14	5.749210
TOTAL	0/ 0.00	5/ 0.23	7/ 0.32	9/ 0.41	1/ 0.05	0/ 0.00	0/ 0.00	22/ 1.0	6.572481

NUMBER OF BAD RECORDS: 0

CPL ENVIRONMENTAL MONITORING SYSTEM
PROGRAM INDIATOR (INREQ) - JAN 1961
JOINT OCCURRENCE FREQUENCIES FOR LUNDSPEG AND LUNDSPE
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 23, 1961 14

SITE=RUEN YEAR=60 QUARTER=THIRD SUMMARY OVER ALL STAB

LUNDSPEG	LUNDSPEG					TOTAL	AVERAGE
	CALC	72-22	22-12	12-2-18	18-2-22		
N	0.0/ 0.03	43/ 1.97	117/ 5.36	30/ 1.37	1/ 0.05	191.0/ 8.78	5.321959
NWE	0.4/ 0.02	25/ 1.15	110/ 5.04	73/ 3.34	1/	208.4/ 9.54	6.555312
NE	0.2/ 0.01	15/ 0.64	90/ 4.12	53/ 2.43	1/ 0.05	159.2/ 7.29	0.500317
EWE	0.2/ 0.01	16/ 0.73	62/ 2.84	25/ 1.15	1/ 0.05	104.2/ 4.07	5.900073
E	0.2/ 0.01	14/ 0.64	46/ 2.20	10/ 0.46	1/	72.2/ 3.31	5.000316
ESE	0.2/ 0.01	12/ 0.55	40/ 1.83	3/ 0.14	1/	55.2/ 2.03	4.725462
SE	0.4/ 0.02	23/ 1.15	70/ 3.48	10/ 0.46	1/ 0.05	112.4/ 5.13	5.100009
SSE	0.4/ 0.02	21/ 1.24	92/ 4.21	26/ 1.19	1/	145.4/ 6.06	5.323163
S	1.0/ 0.04	68/ 3.11	115/ 5.27	56/ 2.57	1/	240.0/ 10.59	5.435218
SWM	1.2/ 0.06	87/ 3.99	177/ 8.11	63/ 2.64	2/ 0.05	330.2/ 13.12	5.600074
SW	0.6/ 0.04	57/ 2.61	90/ 4.49	58/ 2.66	1/ 0.05	214.8/ 9.64	5.059465
WSW	0.4/ 0.02	51/ 1.42	42/ 2.11	19/ 0.87	1/	90.4/ 4.42	5.110007
W	0.4/ 0.02	27/ 1.24	18/ 0.82	7/ 0.32	1/	52.4/ 2.40	4.032549
WWM	0.3/ 0.02	23/ 1.03	17/ 0.78	7/ 0.32	1/	47.3/ 2.17	4.012149
NW	0.3/ 0.01	22/ 1.01	10/ 0.46	4/ 0.16	1/	36.3/ 1.66	5.700060
NWM	0.9/ 0.04	65/ 2.76	49/ 2.11	5/ 0.23	1/	110.5/ 5.00	5.060012
TOTAL	8/ 0.37	537/ 25.52	1162/ 53.23	449/ 20.57	7/ 0.32	0/ 0.00	0/ 0.00

NUMBER OF BAD RECORDS: 25

18 10 5710 Page 1

CPL ENVIRONMENTAL MONITORING SYSTEM 15:20 FRIDAY, JANUARY 23, 1981 15
PROGRAM INDL702 (INDFREQ) - JAN 1981
JOINT OCCURRENCE FREQUENCIES FOR LOWNUDEG AND LOWNUSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=80 QUARTER=THIRD STAB=A

LOWNUDEG	LOWNUSPD							TOTAL	AVERAGE LOWNUSPD
	CALM	2.5-3.2	3.5-7.5	7.5-12.2	12.5-18.5	18.5-25	>= 25		
N	/	/	16/ 0.82	17/ 0.76	/	/	/	33.0/ 1.60	7.216645
NNE	/	/	23/ 1.05	10/ 0.46	/	/	/	33.0/ 1.51	6.799357
NE	/	2/ 0.09	23/ 1.05	19/ 0.87	1/ 0.05	/	/	45.0/ 2.06	7.245014
ENE	/	/	16/ 0.73	16/ 0.73	/	/	/	32.0/ 1.47	7.057695
E	/	1/ 0.05	14/ 0.64	6/ 0.27	/	/	/	21.0/ 0.96	6.121515
ESE	/	2/ 0.09	13/ 0.60	1/ 0.05	/	/	/	16.0/ 0.75	4.727362
SE	/	2/ 0.09	36/ 1.65	3/ 0.14	/	/	/	41.0/ 1.86	5.562942
SSE	/	/	10/ 0.46	9/ 0.41	/	/	/	19.0/ 0.87	7.502872
S	/	/	7/ 0.32	19/ 0.87	/	/	/	26.0/ 1.19	6.66651
SSW	/	/	20/ 0.92	38/ 1.74	2/ 0.09	/	/	60.0/ 2.75	8.551705
Sh	/	1/ 0.05	33/ 1.51	41/ 1.86	/	/	/	75.0/ 3.44	7.979321
WSW	/	/	16/ 0.82	11/ 0.50	/	/	/	29.0/ 1.33	7.2654
W	/	/	7/ 0.32	7/ 0.32	/	/	/	14.0/ 0.64	7.121416
WNW	/	/	4/ 0.18	3/ 0.14	/	/	/	7.0/ 0.32	7.053225
NW	/	1/ 0.05	2/ 0.09	1/ 0.05	/	/	/	4.0/ 0.16	6.211457
NNW	/	/	/	3/ 0.14	/	/	/	3.0/ 0.14	10.64421
TOTAL	0/ 0.00	9/ 0.41	244/ 11.16	204/ 9.34	5/ 0.14	0/ 0.00	0/ 0.00	460/ 21.1	7.295512

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM: IM001#02 (MDFREQ) -- JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 25, 1981 10

SITE=RCBN

YEAR=80

QUARTER=THIRD

STAB=6

LOWNDDEG

LOWNDSPD

	CALC	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	/	/	17/ 0.78	6/ 0.27	/	/	/	23.0/ 1.05	6.440925
NNE	/	1/ 0.05	13/ 0.60	2/ 0.09	/	/	/	16.0/ 0.73	6.056151
NE	/	/	14/ 0.64	1/ 0.05	/	/	/	12.0/ 0.09	5.964091
ENE	/	/	4/ 0.18	3/ 0.14	1/ 0.05	/	/	6.0/ 0.37	6.324493
E	/	/	6/ 0.27	/	/	/	/	6.0/ 0.27	5.19982
ESE	/	1/ 0.05	5/ 0.23	/	/	/	/	6.0/ 0.27	4.76902
SE	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	/	5.0/ 0.23	5.95651
SSE	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	6.897091
S	/	/	1/ 0.05	2/ 0.09	/	/	/	3.0/ 0.14	9.315766
SSW	/	/	4/ 0.18	2/ 0.09	/	/	/	6.0/ 0.27	7.567125
SW	/	/	10/ 0.46	4/ 0.18	/	/	/	14.0/ 0.04	6.116151
WSW	/	2/ 0.09	6/ 0.27	2/ 0.09	/	/	/	10.0/ 0.46	5.844587
W	/	1/ 0.05	2/ 0.09	/	/	/	/	3.0/ 0.14	4.946916
WNW	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	6.28514
NW	/	/	/	1/ 0.05	/	/	/	1.0/ 0.62	7.087175
NNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.65	7.0702
TOTAL	0/ 0.00	6/ 0.27	92/ 4.21	26/ 1.19	1/ 0.05	0/ 0.00	0/ 0.00	125/ 5.7	6.326762

NUMBER OF BAD RECORDS: 0

CPCL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IMDOI#02 (MDFKEW) - JAN 1961
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 23, 1961 17

SITE=RUBN

YEAR=60

QUARTER=THIRD

STAB=C

LOWNDSPD

LOWNDEG	CALM	.72-3.2	3.2-7.2	7.2-12.2	12.2-16.2	16.2-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	/	1/ 0.05	13/ 0.60	3/ 0.14	/	/	/	17.0/ 0.78	5.82219
NNE	/	/	9/ 0.41	3/ 0.14	/	/	/	12.0/ 0.55	6.066147
NE	/	/	11/ 0.50	6/ 0.27	/	/	/	19.0/ 0.67	7.007666
ENE	/	1/ 0.05	6/ 0.37	1/ 0.05	/	/	/	10.0/ 0.46	6.224777
E	/	2/ 0.09	5/ 0.23	1/ 0.05	/	/	/	8.0/ 0.37	5.765361
ESE	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	4.493912
SE	/	3/ 0.14	9/ 0.41	/	1/ 0.05	/	/	13.0/ 0.60	5.112611
SSE	/	/	1/ 0.05	3/ 0.14	/	/	/	4.0/ 0.16	9.163756
S	/	/	2/ 0.09	4/ 0.18	/	/	/	6.0/ 0.27	8.532041
SSH	/	1/ 0.05	4/ 0.18	6/ 0.27	/	/	/	11.0/ 0.50	7.776613
SW	/	2/ 0.09	11/ 0.50	6/ 0.27	1/ 0.05	/	/	20.0/ 0.92	6.303149
WSW	/	/	7/ 0.32	1/ 0.05	/	/	/	8.0/ 0.37	5.802699
W	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14	6.219775
WSW	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	5.369349
NW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	9.086273
NNW	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.467674
TOTAL	0/ 0.00	11/ 0.50	89/ 4.06	39/ 1.79	2/ 0.09	0/ 0.00	0/ 0.00	141/ 6.5	6.532263

NUMBER OF BAD RECORDS: 0

CPEL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IND01#02 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 23, 1981 19

SITE=RUEH

YEAR=80

QUARTEK=THIRD

STAB=E

LOWNDSPD

LOWNDDEG	WALL	.75-3.2	3.2-7.5	7.5-12.2	12.2-18.2	18.2-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	0.1/ 0.01	17/ 0.76	22/ 1.01	/	/	/	/	39.1/ 1.79	3.956794
NNE	0.1/ 0.00	14/ 0.64	9/ 0.41	1/ 0.05	/	/	/	24.1/ 1.10	3.916203
NE	0.1/ 0.00	8/ 0.37	7/ 0.32	/	/	/	/	15.1/ 0.69	3.163832
ENE	0.0/ 0.00	3/ 0.14	5/ 0.23	/	/	/	/	8.0/ 0.37	3.003700
E	0.0/ 0.00	4/ 0.18	3/ 0.14	/	/	/	/	7.0/ 0.32	2.863333
ESE	0.0/ 0.00	2/ 0.09	6/ 0.37	/	/	/	/	10.0/ 0.46	4.440552
SE	0.0/ 0.00	4/ 0.18	8/ 0.37	1/ 0.05	/	/	/	13.0/ 0.60	4.283473
SSE	0.1/ 0.01	17/ 0.76	46/ 1.83	1/ 0.05	/	/	/	68.1/ 2.60	4.340038
S	0.3/ 0.01	40/ 2.11	56/ 2.29	1/ 0.05	/	/	/	97.3/ 4.40	3.701327
SSW	0.4/ 0.02	56/ 2.57	161/ 4.63	2/ 0.09	/	/	/	154.4/ 7.30	3.934340
SW	0.2/ 0.01	55/ 1.80	24/ 1.10	2/ 0.09	/	/	/	81.2/ 2.81	3.486704
WSW	0.1/ 0.01	18/ 0.82	6/ 0.27	1/ 0.05	/	/	/	25.1/ 1.12	3.166239
W	0.1/ 0.00	13/ 0.60	2/ 0.09	/	/	/	/	15.1/ 0.69	2.340647
WNW	0.1/ 0.01	16/ 0.82	2/ 0.09	1/ 0.05	/	/	/	21.1/ 0.97	2.718578
NW	0.1/ 0.00	10/ 0.46	5/ 0.23	1/ 0.05	/	/	/	16.1/ 0.74	3.379428
NNW	0.2/ 0.01	29/ 1.33	13/ 0.60	/	/	/	/	42.2/ 1.93	3.172769
TOTAL	2/ 0.09	294/13.47	305/13.97	11/ 0.50	0/ 0.00	0/ 0.00	0/ 0.00	612/26.0	3.716971

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM INDIAN (MDFREQ) - JAN 1961
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 23, 1961 20

SITE=RUEN

YEAR=60

QUARTER=THIRD

STAB=F

LOWNDDEG	LOWNDSPD							TOTAL	AVERAGE LOWNDSPD
	CALM	2.2-4.2	4.5-7.5	7.5-12.2	12.5-18.5	18.5-25	25-25		
N	0.9/ 0.04	21/ 0.90	1/ 0.05	/	/	/	/	22.9/ 1.05	1.942018
NNE	0.2/ 0.01	5/ 0.25	1/ 0.05	/	/	/	/	6.2/ 0.28	1.900867
NE	0.0/ 0.00	1/ 0.05	/	/	/	/	/	1.0/ 0.05	0.7503748
ENE	0.2/ 0.01	6/ 0.27	/	/	/	/	/	6.2/ 0.27	1.422754
E	/	/	/	/	/	/	/	0.0/ 0.00	
ESE	0.0/ 0.00	1/ 0.05	/	/	/	/	/	1.0/ 0.05	1.85055
SE	0.1/ 0.00	2/ 0.09	/	/	/	/	/	2.1/ 0.10	1.389503
SSE	0.5/ 0.01	7/ 0.32	5/ 0.23	/	/	/	/	12.5/ 0.56	3.023191
S	0.6/ 0.03	14/ 0.64	3/ 0.14	1/ 0.05	/	/	/	18.6/ 0.85	2.995002
SSW	1.0/ 0.04	25/ 1.05	8/ 0.37	1/ 0.05	/	/	/	33.0/ 1.51	2.890030
SW	0.6/ 0.03	14/ 0.64	2/ 0.09	/	/	/	/	16.6/ 0.76	2.352361
WSW	0.2/ 0.01	4/ 0.18	5/ 0.14	/	/	/	/	7.2/ 0.33	3.000132
W	0.4/ 0.02	10/ 0.46	1/ 0.05	/	/	/	/	11.4/ 0.52	1.920401
WNW	0.0/ 0.00	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	2.834502
NW	0.3/ 0.02	6/ 0.37	1/ 0.05	/	/	/	/	7.3/ 0.45	2.059511
NNW	1.2/ 0.05	26/ 1.28	10/ 0.82	/	/	/	/	47.2/ 2.16	3.124442
TOTAL	6/ 0.27	145/ 6.64	44/ 2.02	2/ 0.09	0/ 0.00	0/ 0.00	0/ 0.00	197/ 9.0	2.63760

NUMBER OF BAD RECORDS: 0

CPEL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM (MODIFIED) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20, FRIDAY, JANUARY 23, 1981 21

SITE=KOBN

YEAR=80

QUARTER=THIRD

STAB=6

LOWNDDEG

LOWNDSPD

	CALM	7.2-3.2	3.2-7.5	7.5-12.2	12.2-18.2	18.2-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.970567
NNE	/	/	/	/	/	/	/	0.0/ 0.00	
NE	/	/	/	/	/	/	/	0.0/ 0.00	
ENE	/	/	/	/	/	/	/	0.0/ 0.00	
E	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	0.9004498
ESE	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	1.0005
SE	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	1.0672
SSE	/	/	/	/	/	/	/	0.0/ 0.00	
S	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	2.170367
SSH	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	3.101549
Sh	/	/	/	/	/	/	/	0.0/ 0.00	
hSh	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	2.904525
h	/	/	/	/	/	/	/	0.0/ 0.00	
h/h	/	/	/	/	/	/	/	0.0/ 0.00	
h/h	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	1.417375
N/h	/	5/ 0.23	6/ 0.27	/	/	/	/	11.0/ 0.56	3.507013
TOTAL	0/ 0.00	15/ 0.60	9/ 0.41	0/ 0.00	0/ 0.00	0/ 0.00	0/ 0.00	22/ 1.0	2.479514

NUMBER OF BAD RECORDS: 0

ENCLOSURE 2

JOINT FREQUENCY OF WIND DIRECTION AND SPEED
 FOURTH QUARTER 1980
H. B. ROBINSON STEAM ELECTRIC PLANT

The attached tables present the number and corresponding frequency of wind direction occurrences by wind speed class as recorded at the on-site meteorological system during the period October 1 through December 31, 1980.

The frequencies are presented as a percent of total occurrences for each stability class. Also included is a summary for all stability classes. The first eight tables are for the upper sensor elevation (60 meter); the last eight tables are for the lower (10 meter) sensor elevation.

Pertinent information available from the tables is as follows:

1. Stability

Percent occurrence Pasquill categories:

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
5.3	4.9	4.7	35.7	17.5	13.2	18.7

2. Wind Speed

	<u>10 Meter</u>	<u>60 Meter</u>
Average Speed (mph)	5.5	10.2
Percent Calm	1.5	0.1
Percent Less than 3.5 mph	32.3	5.4

3. Wind Direction

	<u>10 Meter</u>	<u>60 Meter</u>
Prevailing Direction	NNW	N
Percent Occurrence	15.9	14.9

4. Data Recovery

	<u>10 Meter</u>	<u>60 Meter</u>
Percent Good Hours	97.6	99.4

CPCL ENVIRONMENTAL MONITORING SYSTEM

15:15 FRIDAY, JANUARY 23, 1981

PROGRAM 1BD01402 (MDFREQ) - JAN 1981

JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

QUARTER=FOURTH

SUMMARY OVER ALL STAB

UPWIND SPD

UPWIND DEG	WIND	15-2.2	2.2-7.2	7.2-12.2	12.2-18.2	18.2-25	25-25	TOTAL	AVERAGE UPWIND SPD
N	0.1/ 0.00	7/ 0.32	40/ 1.82	112/ 5.10	119/ 5.42	38/ 1.73	11/ 0.50	227.1/14.90	13.1889
NNE	0.1/ 0.00	7/ 0.32	40/ 1.82	99/ 4.51	108/ 4.92	15/ 0.68	4/ 0.18	273.1/12.44	11.8669
NE	0.1/ 0.00	6/ 0.27	41/ 1.87	61/ 2.78	23/ 1.05	3/ 0.14	/	134.1/ 6.11	9.225401
ENE	0.1/ 0.00	11/ 0.50	41/ 1.87	17/ 0.77	6/ 0.30	/	/	77.1/ 3.51	6.905958
E	0.0/ 0.00	4/ 0.18	32/ 1.46	15/ 0.68	/	/	/	51.0/ 2.33	6.563663
ESE	0.1/ 0.00	11/ 0.50	23/ 1.05	18/ 0.82	/	/	/	52.1/ 2.37	6.129742
SE	0.0/ 0.00	5/ 0.23	17/ 0.77	39/ 1.78	3/ 0.14	1/ 0.05	/	62.0/ 2.90	8.147661
SSE	0.1/ 0.00	6/ 0.30	20/ 0.91	14/ 0.64	3/ 0.14	/	/	43.1/ 2.05	6.563852
S	0.0/ 0.00	3/ 0.14	35/ 1.59	56/ 2.55	9/ 0.41	/	/	103.0/ 4.09	8.552656
SSW	0.1/ 0.00	6/ 0.27	41/ 1.87	130/ 5.92	58/ 2.64	2/ 0.09	/	237.1/10.80	10.28646
SW	0.0/ 0.00	5/ 0.23	46/ 2.10	92/ 4.19	52/ 2.37	3/ 0.14	/	198.0/ 9.02	10.21445
WSW	0.1/ 0.00	11/ 0.50	46/ 2.10	79/ 3.60	43/ 1.96	13/ 0.59	/	192.1/ 8.75	10.17667
W	0.1/ 0.00	6/ 0.30	39/ 1.78	47/ 2.14	8/ 0.36	3/ 0.14	/	105.1/ 4.79	8.242569
WNW	0.1/ 0.00	10/ 0.46	26/ 1.18	25/ 1.14	6/ 0.30	1/ 0.05	/	70.1/ 3.19	7.449514
NW	0.1/ 0.00	9/ 0.41	22/ 1.00	42/ 1.91	10/ 0.46	2/ 0.09	/	65.1/ 3.66	8.506927
NNW	0.1/ 0.00	7/ 0.32	30/ 1.37	72/ 3.28	44/ 2.00	22/ 1.00	5/ 0.23	160.1/ 8.20	12.39153
TOTAL	1/ 0.05	116/ 5.36	539/24.56	918/41.82	496/22.60	103/ 4.69	20/ 0.91	2195/ 100	10.22546

NUMBER OF BAD RECORDS: 13

CPL ENVIRONMENTAL MONITORING SYSTEM

15:15 FRIDAY, JANUARY 23, 1981

PROGRAM 1MD01#02 (MDFREQ) - JAN 1981

JOINT OCCURRENCE FREQUENCIES FOR UPWNDEG AND UPWNDSPO
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

QUARTER=FOURTH

STAB=A

UPWNDEG	UPWNDSPO							TOTAL	AVERAGE UPWNDSPO
	CALM	1.2-3.2	3.2-7.5	7.5-14.2	14.2-18.2	18.2-22	22-25		
N	/	/	/	6/ 0.27	12/ 0.55	2/ 0.09	/	20.0/ 0.91	14.84075
NNE	/	/	/	8/ 0.36	6/ 0.27	1/ 0.05	/	15.0/ 0.68	12.23945
NE	/	/	1/ 0.05	1/ 0.05	1/ 0.05	/	/	3.0/ 0.14	10.04391
ENE	/	/	5/ 0.23	1/ 0.05	/	/	/	6.0/ 0.27	6.019674
E	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	6.806958
ESE	/	1/ 0.05	4/ 0.18	3/ 0.14	/	/	/	8.0/ 0.30	6.344837
SE	/	1/ 0.05	6/ 0.27	3/ 0.14	/	/	/	10.0/ 0.46	6.601702
SSE	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	4.719025
S	/	/	4/ 0.18	/	/	/	/	4.0/ 0.18	5.982150
SSW	/	/	4/ 0.18	5/ 0.23	/	/	/	9.0/ 0.41	7.442608
SW	/	/	7/ 0.32	2/ 0.09	9/ 0.41	1/ 0.05	/	19.0/ 0.87	11.229240
WSW	/	/	1/ 0.05	4/ 0.18	2/ 0.09	1/ 0.05	/	8.0/ 0.36	11.50158
W	/	/	/	/	/	/	/	0.0/ 0.00	
WNW	/	/	1/ 0.05	2/ 0.09	/	/	/	3.0/ 0.14	7.420375
NW	/	/	/	1/ 0.05	/	/	/	1.0/ 0.05	9.004499
NNW	/	/	/	1/ 0.05	1/ 0.05	2/ 0.09	/	4.0/ 0.18	16.30081
TOTAL	0/ 0.00	2/ 0.09	37/ 1.69	38/ 1.73	31/ 1.41	7/ 0.32	0/ 0.00	115/ 5.2	10.41607

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
PROGRAM 1MOC1#02 (MDFREQ) - JAN 1981

15:15 FRIDAY, JANUARY 23, 1981 7

JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=80 QUARTER=FOURTH STAB=8

Page 35 of 81

UPWIND SPD

UPWIND DEG	CALM	.75-2.2	2.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWIND SPD
N	/	/	2/ 0.09	2/ 0.09	7/ 0.32	1/ 0.05	/	12.0/ 0.55	13.76799
NNE	/	/	1/ 0.05	5/ 0.23	2/ 0.09	/	/	8.0/ 0.36	11.42446
NE	/	/	3/ 0.14	5/ 0.23	1/ 0.05	/	/	9.0/ 0.41	9.671499
ENE	/	/	2/ 0.09	1/ 0.05	1/ 0.05	/	/	4.0/ 0.18	8.274908
E	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	/	5.0/ 0.23	4.759045
ESE	/	2/ 0.09	1/ 0.05	3/ 0.14	/	/	/	6.0/ 0.27	6.797841
SE	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.186325
SSE	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	3.188249
S	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	8.624412
SSW	/	/	2/ 0.09	5/ 0.23	4/ 0.41	/	/	16.0/ 0.73	12.45727
SW	/	/	1/ 0.05	6/ 0.27	8/ 0.36	/	/	15.0/ 0.68	11.95284
WSW	/	1/ 0.05	/	9/ 0.41	/	6/ 0.27	/	16.0/ 0.73	13.42340
W	/	/	/	1/ 0.05	/	/	/	1.0/ 0.05	10.0717
WNW	/	/	/	/	1/ 0.05	/	/	1.0/ 0.05	13.34
NW	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	10.44069
NNW	/	/	/	1/ 0.05	1/ 0.05	1/ 0.05	/	3.0/ 0.14	13.72432
TOTAL	0/ 0.00	5/ 0.23	18/ 0.82	44/ 2.00	30/ 1.37	8/ 0.36	0/ 0.00	105/ 4.8	11.19613

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM

15:15 FRIDAY, JANUARY 23, 1961

PROGRAM IMD01702 (MDFREQ) - JAN 1961

JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=60

QUARTER=FOURTH STAB=C

UPWIND DEG	UPWIND SPD							TOTAL	AVERAGE UPWIND SPD
	CALC	.75-3.2	3.2-7.5	7.5-12.2	12.2-18.5	18.5-25	>= 25		
N	/	/	1/ 0.05	5/ 0.23	3/ 0.14	/	/	9.0/ 0.41	11.46907
NNE	/	/	3/ 0.14	8/ 0.36	3/ 0.14	1/ 0.05	/	15.0/ 0.68	10.39742
NE	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.328662
ENE	/	/	2/ 0.09	/	1/ 0.05	/	/	3.0/ 0.14	8.726501
E	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.119724
ESE	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.236949
SE	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	/	5.0/ 0.23	4.525595
SSE	/	/	/	1/ 0.05	/	/	/	1.0/ 0.05	10.97215
S	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	6.4699
SSW	/	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	5.0/ 0.23	10.10500
SW	/	/	4/ 0.16	13/ 0.59	4/ 0.18	2/ 0.09	/	23.0/ 1.05	10.91222
WSW	/	/	3/ 0.14	2/ 0.09	/	1/ 0.05	/	6.0/ 0.27	8.923902
W	/	/	1/ 0.05	3/ 0.14	/	2/ 0.09	/	6.0/ 0.27	11.81779
WNW	/	/	5/ 0.23	1/ 0.05	1/ 0.05	/	/	7.0/ 0.32	7.136899
NW	/	/	2/ 0.09	3/ 0.14	/	/	/	5.0/ 0.23	6.354174
NNW	/	/	1/ 0.05	5/ 0.23	1/ 0.05	2/ 0.09	/	9.0/ 0.41	12.9435
TOTAL	0/ 0.00	1/ 0.05	30/ 1.37	48/ 2.19	14/ 0.64	8/ 0.36	0/ 0.00	101/ 4.6	9.919037

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM

15:15 FRIDAY, JANUARY 23, 1981

9

PROGRAM IMC01/C2 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=KUDN

YEAR=80

QUARTER=FOURTH

STA6=D

UPWIND SPD

UPWIND DEG	CALM	7.5-3.2	3.2-7.5	7.5-12.5	12.5-18.5	18.5-25	25-25	TOTAL	AVERAGE UPWIND SPD
N	/	5/ 0.23	11/ 0.50	44/ 2.00	72/ 3.26	32/ 1.46	11/ 0.50	175.0/ 7.97	14.97766
NNE	/	4/ 0.18	14/ 0.64	53/ 2.41	94/ 4.28	13/ 0.59	4/ 0.18	162.0/ 8.29	13.18733
NE	/	2/ 0.09	17/ 0.77	41/ 1.87	21/ 0.96	3/ 0.14	/	84.0/ 3.83	10.40262
ENE	/	4/ 0.18	13/ 0.59	12/ 0.55	5/ 0.23	/	/	34.0/ 1.55	8.04912
E	/	2/ 0.05	5/ 0.23	6/ 0.27	/	/	/	12.0/ 0.55	6.917345
ESE	/	4/ 0.18	4/ 0.16	2/ 0.09	/	/	/	10.0/ 0.46	4.924127
SE	/	/	2/ 0.09	4/ 0.18	/	1/ 0.05	/	7.0/ 0.32	4.290356
SSE	/	2/ 0.09	5/ 0.23	1/ 0.05	1/ 0.05	/	/	9.0/ 0.41	5.62316
S	/	/	8/ 0.36	9/ 0.41	3/ 0.14	/	/	20.0/ 0.91	8.51779
SSW	/	1/ 0.05	6/ 0.27	12/ 0.55	12/ 0.55	2/ 0.09	/	35.0/ 1.50	11.59317
SW	/	2/ 0.09	12/ 0.55	15/ 0.68	8/ 0.36	/	/	37.0/ 1.69	9.299691
WSW	/	1/ 0.05	13/ 0.59	16/ 0.82	13/ 0.59	5/ 0.23	/	50.0/ 2.26	10.90645
W	/	1/ 0.05	21/ 0.96	17/ 0.77	1/ 0.05	1/ 0.05	/	41.0/ 1.67	7.52761
WNW	/	1/ 0.05	14/ 0.64	9/ 0.41	/	/	/	24.0/ 1.09	6.786724
NW	/	/	7/ 0.32	11/ 0.50	2/ 0.09	1/ 0.05	/	21.0/ 0.96	9.32503
NNW	/	1/ 0.05	9/ 0.41	17/ 0.77	12/ 0.55	14/ 0.64	5/ 0.23	58.0/ 2.64	14.71826
TOTAL	0/ 0.00	29/ 1.32	161/ 7.33	271/ 12.55	244/ 11.12	72/ 3.28	20/ 0.91	797/ 36.3	11.77512

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IND01702 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWNO DEG AND UPWNO SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15 FRIDAY, JANUARY 23, 1981 10

SITE=KOLN

YEAR=80

QUARTER=FOURTH

STAB=E

UPWNO SPD

UPWNO DEG	CALM	.75-2.2	2.2-7.2	7.2-12.2	12.2-18.2	18.2-25	>= 25	TOTAL	AVERAGE UPWNO SPD
N	/	/	8/ 0.36	36/ 1.64	13/ 0.59	2/ 0.09	/	59.0/ 2.69	10.77340
NNE	/	1/ 0.05	7/ 0.32	4/ 0.18	2/ 0.09	/	/	14.0/ 0.64	7.831294
NE	/	/	7/ 0.32	3/ 0.14	/	/	/	10.0/ 0.46	6.675612
ENE	/	2/ 0.09	3/ 0.14	3/ 0.14	1/ 0.05	/	/	9.0/ 0.41	7.001647
E	/	1/ 0.05	11/ 0.50	3/ 0.14	/	/	/	15.0/ 0.68	6.625533
ESE	/	1/ 0.05	3/ 0.14	5/ 0.23	/	/	/	9.0/ 0.41	6.842308
SE	/	/	1/ 0.05	12/ 0.55	5/ 0.14	/	/	18.0/ 0.73	9.790309
SSE	/	/	3/ 0.14	8/ 0.36	2/ 0.09	/	/	13.0/ 0.59	9.098853
S	/	/	8/ 0.36	14/ 0.64	2/ 0.09	/	/	24.0/ 1.09	8.912692
SSW	/	1/ 0.05	3/ 0.14	28/ 1.28	20/ 0.91	/	/	52.0/ 2.37	11.13453
SW	/	1/ 0.05	2/ 0.09	16/ 0.73	13/ 0.59	/	/	32.0/ 1.46	11.53593
WSW	/	2/ 0.09	9/ 0.41	12/ 0.55	13/ 0.59	/	/	36.0/ 1.64	10.10598
W	/	2/ 0.09	5/ 0.23	6/ 0.27	4/ 0.18	/	/	17.0/ 0.71	8.742603
NNW	/	1/ 0.05	/	4/ 0.18	4/ 0.18	1/ 0.05	/	10.0/ 0.46	11.23393
NW	/	2/ 0.09	3/ 0.14	7/ 0.32	5/ 0.23	1/ 0.05	/	18.0/ 0.82	10.005
NNW	/	1/ 0.05	11/ 0.50	22/ 1.00	19/ 0.87	3/ 0.14	/	56.0/ 2.33	11.70644
TOTAL	0/ 0.00	15/ 0.68	84/ 3.83	183/ 8.34	101/ 4.60	7/ 0.32	0/ 0.00	390/17.8	10.08904

NUMBER OF BAD RECORDS: 0

CPCL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM INDC1102 (MUFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWNODEG AND UPWNSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:15 FRIDAY, JANUARY 23, 1981 11

SITE=KUEH

YEAR=80

QUARTER=FOURTH STAB=E

UPWNODEG	UPWNSPD							TOTAL	AVERAGE UPWNSPD
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25		
N	/	/	5/ 0.23	15/ 0.68	9/ 0.41	1/ 0.05	/	30.0/ 1.37	11.33044
NNE	/	/	6/ 0.27	6/ 0.27	/	/	/	12.0/ 0.55	7.517045
NE	0.1/ 0.01	1/ 0.05	1/ 0.05	2/ 0.09	/	/	/	4.1/ 0.19	6.131007
ENE	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14	5.503091
E	/	/	5/ 0.23	3/ 0.14	/	/	/	8.0/ 0.36	7.500005
ESE	0.1/ 0.01	1/ 0.05	3/ 0.14	2/ 0.09	/	/	/	6.1/ 0.28	6.623028
SE	/	/	1/ 0.05	16/ 0.73	/	/	/	17.0/ 0.77	9.601657
SSE	/	/	4/ 0.18	3/ 0.14	/	/	/	7.0/ 0.32	7.400002
S	0.1/ 0.01	1/ 0.05	5/ 0.23	14/ 0.64	3/ 0.14	/	/	23.1/ 1.05	9.150203
SSW	/	/	5/ 0.23	37/ 1.69	11/ 0.50	/	/	53.0/ 2.41	10.672
SW	/	/	1/ 0.05	17/ 0.77	9/ 0.41	/	/	27.0/ 1.23	11.44028
WSW	/	/	6/ 0.27	10/ 0.46	8/ 0.36	/	/	24.0/ 1.09	10.69054
W	/	/	1/ 0.05	9/ 0.41	3/ 0.14	/	/	13.0/ 0.59	11.02474
WNW	0.1/ 0.01	1/ 0.05	3/ 0.14	5/ 0.23	2/ 0.09	/	/	11.1/ 0.51	8.244359
WN	0.3/ 0.01	2/ 0.09	5/ 0.23	10/ 0.46	3/ 0.14	/	/	20.3/ 0.92	8.260071
NNW	0.1/ 0.01	1/ 0.05	5/ 0.23	12/ 0.55	8/ 0.36	/	/	26.1/ 1.19	10.95000
TOTAL	1/ 0.05	7/ 0.32	54/ 2.69	161/ 7.33	56/ 2.55	1/ 0.05	6/ 0.00	285/13.0	9.694329

NUMBER OF BAD RECORDS: 0

PROGRAM IM001702 (MDFREQ) - JAN 1961

JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=RDEN

YEAR=60

QUARTER=FOURTH STAB=6

UPWIND SPD

UPWIND DEG	CALM	.75-3.2	3.2-7.5	7.5-12.5	12.5-16.5	16.5-25	>= 25	TOTAL	AVERAGE UPWIND SPD
N	/	2/ 0.09	13/ 0.59	4/ 0.18	3/ 0.14	/	/	22.0/ 1.00	6.877380
NNE	/	2/ 0.09	9/ 0.41	15/ 0.68	1/ 0.05	/	/	27.0/ 1.23	7.715584
NE	/	5/ 0.14	11/ 0.50	6/ 0.36	/	/	/	22.0/ 1.00	6.335742
ENE	/	5/ 0.23	13/ 0.59	/	/	/	/	18.0/ 0.62	4.646619
E	/	1/ 0.05	5/ 0.23	1/ 0.05	/	/	/	7.0/ 0.32	5.915625
ESE	/	2/ 0.09	7/ 0.32	2/ 0.09	/	/	/	11.0/ 0.50	5.646761
SE	/	3/ 0.14	2/ 0.09	1/ 0.05	/	/	/	6.0/ 0.27	4.115945
SSE	/	5/ 0.23	6/ 0.27	1/ 0.05	/	/	/	12.0/ 0.55	4.366914
S	/	2/ 0.09	8/ 0.36	17/ 0.77	1/ 0.05	/	/	28.0/ 1.26	7.955575
SSW	/	4/ 0.18	20/ 0.91	40/ 1.82	5/ 0.23	/	/	69.0/ 3.14	6.602125
SW	/	2/ 0.09	19/ 0.87	23/ 1.05	1/ 0.05	/	/	45.0/ 2.05	7.898021
WSW	/	7/ 0.32	14/ 0.64	24/ 1.09	7/ 0.32	/	/	52.0/ 2.57	6.246749
W	/	5/ 0.23	11/ 0.50	11/ 0.50	/	/	/	27.0/ 1.23	6.64169
WNW	/	7/ 0.32	3/ 0.14	4/ 0.18	/	/	/	14.0/ 0.64	4.954162
NW	/	5/ 0.23	5/ 0.23	8/ 0.36	/	/	/	18.0/ 0.62	6.007651
NNW	/	4/ 0.18	4/ 0.18	14/ 0.64	2/ 0.09	/	/	24.0/ 1.09	6.315961
TOTAL	0/ 0.00	59/ 2.69	150/ 6.83	173/ 7.88	20/ 0.91	0/ 0.00	0/ 0.00	402/16.3	7.260794

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 23, 1981 6

SITE=RUEN

YEAR=80

QUARTER=FOURTH

SUMMARY OVER ALL STAD

LOWNDDEG

LOWNDSPD

	1.48-2.2	2.2-7.5	7.5-12.2	12.2-18.2	18.2-42	42-25	TOTAL	AVERAGE LOWNDSPD
N	2.9/ 0.14	61/ 2.83	69/ 4.13	70/ 3.25	16/ 0.84	/	240.7/11.10	6.307325
NNE	2.0/ 0.09	42/ 1.95	98/ 4.55	155/ 7.19	29/ 1.35	3/ 0.14	529.0/15.27	7.870927
NE	0.9/ 0.04	19/ 0.83	50/ 2.69	55/ 2.55	9/ 0.42	/	141.9/ 6.39	7.13170
ENE	0.7/ 0.03	15/ 0.70	30/ 1.39	12/ 0.56	/	/	57.7/ 2.66	5.077719
E	0.5/ 0.02	10/ 0.46	19/ 0.68	/	/	/	29.5/ 1.37	4.143313
ESE	0.9/ 0.04	18/ 0.84	20/ 0.93	/	/	/	38.9/ 1.80	5.760444
SE	0.5/ 0.02	10/ 0.46	26/ 1.21	3/ 0.14	/	/	39.5/ 1.83	4.420881
SSE	2.0/ 0.09	42/ 1.95	23/ 1.07	5/ 0.23	/	/	72.0/ 3.34	3.553236
S	3.7/ 0.17	77/ 3.57	67/ 3.11	1/ 0.05	/	/	148.7/ 6.90	5.369065
SSW	1.9/ 0.09	39/ 1.81	99/ 4.59	39/ 1.81	1/ 0.05	/	179.9/ 8.35	5.451212
SW	1.4/ 0.06	29/ 1.35	67/ 4.04	49/ 2.27	5/ 0.23	/	171.4/ 7.95	6.251965
WSW	1.8/ 0.06	37/ 1.72	54/ 2.51	34/ 1.58	6/ 0.28	/	132.8/ 6.16	5.46677
W	1.2/ 0.06	25/ 1.16	45/ 2.00	4/ 0.19	2/ 0.09	/	75.2/ 3.49	4.655516
WNW	1.2/ 0.06	25/ 1.16	31/ 1.44	2/ 0.09	/	/	59.2/ 2.75	3.931719
NW	2.5/ 0.11	51/ 2.37	57/ 1.72	5/ 0.23	/	/	95.5/ 4.43	5.574297
NNW	7.7/ 0.37	164/ 7.01	130/ 6.31	27/ 1.25	8/ 0.37	/	342.9/15.91	4.310210
TOTAL	32/ 1.48	664/30.61	917/42.55	461/21.39	78/ 3.62	3/ 0.14	2155/ 100	5.510571

NUMBER OF BAD RECORDS: 53

PROGRAM IM01#02 (IMPREU) - JAN 1981

JOINT OCCURRENCE FREQUENCIES FOR LOWNOISE AND LOWNOISED
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=KUDN

YEAR=80

QUARTER=FOURTH

STAB=A

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LOWNOISE	501M	LOWNOISED					TOTAL	AVERAGE LOWNOISED
		12-2-82	2-2-7-2	7-2-16-2	16-2-18-2	18-2-23		
N	/	/	1/ 0.05	17/ 0.74	3/ 0.14	/	/	21.0/ 0.97 10.41155
NE	/	/	4/ 0.19	9/ 0.42	1/ 0.05	/	/	14.0/ 0.05 4.22763
NE	/	/	3/ 0.14	3/ 0.14	/	/	/	6.0/ 0.28 6.61647
ENE	/	/	4/ 0.19	/	/	/	/	4.0/ 0.19 5.56505
E	/	/	4/ 0.19	/	/	/	/	4.0/ 0.19 4.523093
ESE	/	/	0/ 0.28	/	/	/	/	0.0/ 0.28 5.094212
SE	/	/	8/ 0.37	3/ 0.14	/	/	/	11.0/ 0.21 5.037705
SSE	/	2/ 0.09	2/ 0.09	1/ 0.05	/	/	/	5.0/ 0.23 4.949139
S	/	/	5/ 0.23	/	/	/	/	5.0/ 0.23 5.039185
SSW	/	/	0/ 0.28	2/ 0.09	/	/	/	8.0/ 0.37 6.305081
SW	/	/	10/ 0.40	4/ 0.42	/	/	/	19.0/ 0.88 7.677621
WSW	/	/	3/ 0.14	5/ 0.23	3/ 0.05	/	/	9.0/ 0.42 6.555547
W	/	/	/	/	/	/	/	0.0/ 0.00
WNW	/	/	/	/	/	/	/	0.0/ 0.00
NW	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14 6.6033
NNW	/	/	/	/	/	/	/	0.0/ 0.00
TOTAL	0/ 0.00	2/ 0.05	59/ 2.74	49/ 2.27	5/ 0.23	0/ 0.00	0/ 0.00	115/ 5.3 7.692395

NUMBER OF BAD RECORDS: 0

CPL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM INCL#02 (MDFREC) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWMDEG AND LOWMDSPU
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT
 SITE=KUCN YEAR=80 QUARTER=FOURTH STAB=6

LOWMDEG	SABD	LOWMDEG						TOTAL	AVERAGE LOWMDEG
		0.00-0.05	0.05-0.10	0.10-0.15	0.15-0.20	0.20-0.25	0.25-0.30		
N	/	/	2/ 0.09	8/ 0.37	1/ 0.05	/	/	11.0/ 0.31	5.110613
NNE	/	/	2/ 0.09	8/ 0.37	/	/	/	10.0/ 0.46	6.861105
NE	/	/	4/ 0.19	5/ 0.23	/	/	/	9.0/ 0.42	7.8222427
NNE	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	6.563469
E	/	/	2/ 0.09	/	/	/	/	4.0/ 0.09	5.0045
ESE	/	4/ 0.19	5/ 0.23	/	/	/	/	9.0/ 0.42	4.813516
SE	/	/	4/ 0.19	/	/	/	/	4.0/ 0.19	5.061262
SSE	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.965324
S	/	/	/	/	/	/	/	0.0/ 0.00	
SSW	/	/	2/ 0.09	10/ 0.46	/	/	/	12.0/ 0.56	8.041916
SW	/	/	3/ 0.14	15/ 0.70	1/ 0.05	/	/	19.0/ 0.88	9.376015
WSW	/	1/ 0.05	2/ 0.14	6/ 0.26	5/ 0.23	/	/	15.0/ 0.70	9.349216
W	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.795002
WNW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	6.1574
NW	/	/	/	1/ 0.05	/	/	/	1.0/ 0.05	8.404099
NNW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.6705
TOTAL	0/ 0.00	6/ 0.20	35/ 1.62	57/ 2.65	7/ 0.32	0/ 0.00	0/ 0.00	105/ 4.9	6.190442

NUMBER OF BAD RECORDS: 0

PROGRAM INDC1#02 (MOFREQ) - JAN 1981

JOINT OCCURRENCE FREQUENCIES FOR LOWNDEG AND LOWNDSPD

RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

QUARTER=FOURTH

STA5=C

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LOWNDEG	LOWNDSPD							AVERAGE LOWNDSPD
	CALC	1.2-2.2	2.2-7.2	7.2-12.2	12.2-18.2	18.2-25	≥ 25	
N	/	/	7/ 0.32	5/ 0.23	1/ 0.05	/	/	13.0/ 0.60 8.127158
NNE	/	/	7/ 0.32	7/ 0.32	1/ 0.05	/	/	15.0/ 0.70 7.932853
NE	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14 5.247066
ENE	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14 6.631091
E	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09 4.616975
ESE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05 5.319324
SE	/	/	4/ 0.19	/	/	/	/	4.0/ 0.19 5.023543
SSE	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09 5.777867
S	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09 5.351674
SSW	/	/	4/ 0.19	1/ 0.05	/	/	/	5.0/ 0.23 6.473234
SW	/	/	12/ 0.56	8/ 0.37	2/ 0.09	/	/	22.0/ 1.02 8.057309
WSW	/	1/ 0.05	3/ 0.14	3/ 0.14	/	/	/	7.0/ 0.32 6.912978
W	/	1/ 0.05	2/ 0.09	1/ 0.05	2/ 0.09	/	/	6.0/ 0.28 6.650454
WNW	/	1/ 0.05	5/ 0.23	1/ 0.05	/	/	/	7.0/ 0.32 5.726671
WW	/	/	3/ 0.14	1/ 0.05	/	/	/	4.0/ 0.19 6.0697
NNW	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23 6.17742
TOTAL	0/ 0.00	4/ 0.19	60/ 2.78	31/ 1.44	6/ 0.28	0/ 0.00	0/ 0.00	101/ 4.7 7.213691

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM

15:20 FRIDAY, JANUARY 23, 1981 10

PROGRAM IM001602 (MDFREC) - JAN 1981

JOINT OCCURRENCE FREQUENCIES FOR LOWNDEG AND LOWNDSPD

RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

QUARTER=FOURTH

STAB=0

LOWNDEG	LOWNDSPD							TOTAL	AVERAGE LOWNDSPD
	CALC	1.2-3.2	3.2-7.2	7.2-12.2	12.2-18.2	18.2-25	>= 25		
N	/	4/ 0.19	35/ 1.62	36/ 1.76	13/ 0.60	/	/	90.0/ 4.16	8.491342
NNE	/	5/ 0.14	69/ 3.20	129/ 5.99	27/ 1.25	3/ 0.14	/	231.0/10.72	9.009697
NE	/	6/ 0.28	42/ 1.95	47/ 2.18	9/ 0.42	/	/	104.0/ 4.65	7.926076
ENE	/	4/ 0.19	15/ 0.70	9/ 0.42	/	/	/	28.0/ 1.30	6.104836
E	/	5/ 0.23	10/ 0.46	/	/	/	/	15.0/ 0.70	4.616751
ESE	/	2/ 0.09	6/ 0.28	/	/	/	/	8.0/ 0.57	4.379271
SE	/	2/ 0.09	9/ 0.42	/	/	/	/	11.0/ 0.51	4.544695
SSE	/	2/ 0.09	2/ 0.09	2/ 0.09	/	/	/	6.0/ 0.26	6.23307
S	/	1/ 0.05	14/ 0.65	1/ 0.05	/	/	/	16.0/ 0.74	5.314114
SSW	/	2/ 0.09	18/ 0.84	18/ 0.84	1/ 0.05	/	/	39.0/ 1.61	7.27372
SW	/	2/ 0.09	24/ 1.11	10/ 0.46	2/ 0.09	/	/	38.0/ 1.76	6.844209
WSW	/	6/ 0.28	22/ 1.02	14/ 0.65	/	/	/	42.0/ 1.95	6.075558
W	/	7/ 0.32	36/ 1.39	3/ 0.14	/	/	/	40.0/ 1.86	5.016250
WNW	/	6/ 0.37	18/ 0.84	/	/	/	/	26.0/ 1.21	4.171315
NW	/	2/ 0.09	18/ 0.84	/	/	/	/	20.0/ 0.93	4.779655
NNW	/	4/ 0.19	31/ 1.44	15/ 0.60	6/ 0.37	/	/	56.0/ 2.60	7.521516
TOTAL	0/ 0.00	60/ 2.78	363/16.84	284/13.18	60/ 2.78	3/ 0.14	0/ 0.00	770/35.7	7.490157

NUMBER OF BAD RECORDS: 27

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 23, 1981 11

SITE=KUBN

YEAR=80

QUARTER=FOURTH. STA#E

LOWNDSPD

LOWNDDEG	CALM	7.2-12.2	12.2-17.2	17.2-22.2	22.2-27.2	27.2-32.2	32.2-37.2	37.2-42.2	TOTAL	AVERAGE LOWNDSPD
N	0.1/ 0.00	8/ 0.37	26/ 1.21	1/ 0.05	/	/	/	/	35.1/ 1.63	4.812471
NNE	0.1/ 0.00	6/ 0.28	16/ 0.74	2/ 0.09	/	/	/	/	24.1/ 1.12	5.053711
NE	0.0/ 0.00	4/ 0.19	5/ 0.23	/	/	/	/	/	9.0/ 0.42	4.052025
ENE	0.0/ 0.00	2/ 0.09	6/ 0.28	/	/	/	/	/	8.0/ 0.37	4.110367
E	0.0/ 0.00	3/ 0.14	1/ 0.05	/	/	/	/	/	4.0/ 0.19	3.330831
ESE	0.1/ 0.00	6/ 0.28	2/ 0.09	/	/	/	/	/	8.1/ 0.37	2.814163
SE	0.0/ 0.00	1/ 0.05	1/ 0.05	/	/	/	/	/	2.0/ 0.09	3.034849
SSE	0.1/ 0.00	6/ 0.28	14/ 0.65	1/ 0.05	/	/	/	/	21.1/ 0.98	4.411367
S	0.1/ 0.00	11/ 0.51	17/ 0.79	/	/	/	/	/	28.1/ 1.30	3.915163
SSW	0.1/ 0.00	7/ 0.32	40/ 1.86	6/ 0.37	/	/	/	/	55.1/ 2.56	5.360303
SW	0.0/ 0.00	5/ 0.23	24/ 1.11	7/ 0.32	/	/	/	/	36.0/ 1.67	5.558559
WSW	0.1/ 0.01	12/ 0.56	11/ 0.51	6/ 0.28	/	/	/	/	29.1/ 1.35	4.925933
W	0.0/ 0.00	3/ 0.23	5/ 0.23	/	/	/	/	/	10.0/ 0.47	3.585457
WNW	0.1/ 0.00	6/ 0.28	5/ 0.23	/	/	/	/	/	11.1/ 0.51	3.787177
NW	0.1/ 0.00	10/ 0.48	8/ 0.37	3/ 0.14	/	/	/	/	21.1/ 0.98	4.14267
NNW	0.1/ 0.01	13/ 0.60	51/ 2.37	11/ 0.51	/	/	/	/	75.1/ 3.49	5.584015
TOTAL	1/ 0.05	105/ 4.87	232/ 10.77	39/ 1.81	0/ 0.00	0/ 0.00	0/ 0.00	0/ 0.00	377/ 17.5	4.850529

NUMBER OF BAD RECORDS: 13

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

15:20 FRIDAY, JANUARY 23, 1981 12

SITE=ROBN

YEAR=80

QUARTER=FOURTH

STAB=F

LOWNDDEG

LOWNDSPD

	CALM	7.5-3.2	3.2-7.5	7.5-12.2	12.2-18.2	18.2-22	>= 25	TOTAL	AVERAGE LOWNDSPD
N	0.1/ 0.01	8/ 0.37	8/ 0.37	1/ 0.05	/	/	/	17.1/ 0.80	3.785517
NNE	0.2/ 0.01	10/ 0.46	/	/	/	/	/	10.2/ 0.47	1.729622
NE	0.0/ 0.00	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	2.709667
ENE	0.1/ 0.00	3/ 0.14	/	/	/	/	/	3.1/ 0.14	1.355516
E	/	/	/	/	/	/	/	/	/
ESE	0.1/ 0.00	3/ 0.14	/	/	/	/	/	3.1/ 0.14	1.409506
SE	0.0/ 0.00	2/ 0.09	/	/	/	/	/	2.0/ 0.09	1.664273
SSE	0.3/ 0.02	19/ 0.88	1/ 0.05	/	/	/	/	20.3/ 0.94	2.405544
S	0.3/ 0.02	26/ 1.21	24/ 1.11	/	/	/	/	50.3/ 2.34	3.333349
SSW	0.3/ 0.02	16/ 0.84	26/ 1.30	/	/	/	/	46.3/ 2.15	3.900797
SW	0.2/ 0.01	12/ 0.56	12/ 0.56	/	/	/	/	24.2/ 1.12	3.236113
WSW	0.2/ 0.01	10/ 0.46	7/ 0.32	/	/	/	/	17.2/ 0.80	3.550338
W	0.1/ 0.01	8/ 0.37	2/ 0.09	/	/	/	/	10.1/ 0.47	2.923903
WNW	0.1/ 0.01	6/ 0.28	2/ 0.09	/	/	/	/	8.1/ 0.38	2.447725
NW	0.2/ 0.01	9/ 0.42	5/ 0.23	/	/	/	/	14.2/ 0.66	3.455952
NNW	0.3/ 0.02	28/ 1.30	26/ 1.30	/	/	/	/	56.3/ 2.62	3.820196
TOTAL	3/ 0.14	163/ 7.56	116/ 5.48	1/ 0.05	0/ 0.00	0/ 0.00	0/ 0.00	285/13.2	3.337661

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM

15:20 FRIDAY, JANUARY 23, 1981 13

PROGRAM IM001#02 (MDFREQ) - JAN 1981

JOINT OCCURRENCE FREQUENCIES FOR LOWND0EG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROEN

YEAR=80

QUARTER=FOURTH

STAR=6

LOWNDSPD

LOWND0EG

	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	INITIAL	AVERAGE LOWNDSPD
N	3.5/ 0.10	41/ 1.90	16/ 0.46	/	/	/	/	54.5/ 2.53	2.045976
NNE	2.0/ 0.09	23/ 1.07	/	/	/	/	/	25.0/ 1.10	1.29229
NE	0.7/ 0.03	6/ 0.37	/	/	/	/	/	8.7/ 0.40	1.19306
ENE	0.5/ 0.02	6/ 0.28	/	/	/	/	/	6.5/ 0.30	0.9658303
E	0.2/ 0.01	2/ 0.09	/	/	/	/	/	2.2/ 0.10	1.053557
ESE	0.3/ 0.01	3/ 0.14	/	/	/	/	/	3.3/ 0.15	1.546097
SE	0.4/ 0.02	5/ 0.25	/	/	/	/	/	5.4/ 0.25	1.347791
SSE	1.0/ 0.05	12/ 0.50	2/ 0.09	/	/	/	/	15.0/ 0.70	2.053760
S	3.3/ 0.15	38/ 1.70	6/ 0.28	/	/	/	/	47.5/ 2.19	2.230629
SSW	1.0/ 0.05	12/ 0.50	1/ 0.05	/	/	/	/	14.0/ 0.60	2.235614
SW	0.9/ 0.04	10/ 0.46	2/ 0.09	/	/	/	/	12.9/ 0.60	2.170306
WSW	0.6/ 0.03	7/ 0.32	5/ 0.23	/	/	/	/	12.6/ 0.58	2.853248
W	0.5/ 0.02	4/ 0.19	2/ 0.09	/	/	/	/	6.3/ 0.29	2.675293
WNW	0.3/ 0.02	4/ 0.19	/	/	/	/	/	4.3/ 0.20	1.413453
NW	2.6/ 0.12	30/ 1.39	/	/	/	/	/	32.0/ 1.51	1.748030
NNW	10.3/ 0.48	119/ 5.52	22/ 1.02	/	/	/	/	151.3/ 7.02	2.428541
TOTAL	26/ 1.30	324/15.05	50/ 2.32	0/ 0.00	0/ 0.00	0/ 0.00	0/ 0.00	402/18.7	2.125219

NUMBER OF BAD RECORDS: 0

ENCLOSURE 3

DIFFUSION ANALYSIS
GROUND LEVEL RELEASE
JULY 1 DECEMBER 31, 1980
H. B. ROBINSON STEAM ELECTRIC PLANT

Description of Attachments

The attached tables provide estimates of relative ground-level concentration (X/Q) and deposition (D/Q) for the period July 1 through December 31, 1980, for a ground-level release.

A description of the tables is as follows:

Table 1 - Undecayed, undepleted X/Q for standard distances.

Table 2 - 2.26-day decay, undepleted X/Q for standard distances.

Table 3 - 8.0-day decay, depleted X/Q for standard distances.

Table 4 - Deposition estimates for standard distances.

Table 5 - X/Q and D/Q estimates for site boundary locations and special points of interest.

Method of Calculation

The ground-level release calculations represent sector averaged concentrations at the given distances from the center of the reactor building. The computer code used (XOQDOQ) was received from the U. S. Nuclear Regulatory Commission (NRC), Hydrology Meteorology Branch. (1)

(1) Program for the Meteorological Evaluation of Routine Effluent Release at Nuclear Power Stations, J. F. Sagendorf and J. T. Goll, August 29, 1976.

Input variables included:

1. Wake correction factor from RG 1.111.
2. Building height for wake correction = 59.0 meters.
3. Joint wind frequency from the ten-meter level on-site meteorological tower.
4. Sigma Z limited to 1,000 meters.
5. Calm winds included with joint frequency and distributed according to the occurrence in the lowest non-calm speed class.

The adjustment factors to account for the straight-line flow model limitations (RG 1.111, Section C.1.c) were not applied. The code was modified to incorporate the revised curves for estimating plume depletion and ground deposition (XOQDOQ - ERRATA, November 8, 1976).

Relative Concentration Estimates

The site boundary distances used for the calculations are as prepared for the June 4, 1976, Appendix I submittal to the NRC. Special point distances were obtained from the December 1978 site survey.

The maximum undepleted, undecayed X/Q value at the site boundary is $4.5E-05$ in the SSE sector. Site boundary maximums for previous six-month periods are as follows:

JAN - JUN 1979	2.5E-05	SSE Sector
JUL - DEC 1979	3.1E-05	SSE Sector
JAN - JUN 1980	2.8E-05	SSE Sector

1207.	1207.	805.	955.	955.	1207.	1207.	1207.	1207.	2012.	1625.	1448.	1207.	966.	443.	433.
72.	75.	70.	71.	74.	91.	82.	75.	79.	82.	73.	97.	85.	78.	59.	59.
2012.	2012.	1207.	1207.	1207.	1448.	2012.	2012.	2012.	2253.	2012.	2012.	1448.	1207.	1207.	1207.
74.	81.	72.	73.	75.	84.	91.	79.	74.	83.	74.	104.	89.	80.	69.	69.
2816.	2816.	2012.	2012.	2012.	2012.	2816.	2816.	2816.	2655.	2816.	2816.	2012.	2012.	2012.	2012.
75.	87.	77.	77.	80.	84.	92.	83.	77.	86.	76.	114.	98.	88.	69.	69.
3621.	3347.	2815.	2815.	2816.	2815.	3621.	3442.	3122.	2816.	3521.	3541.	2815.	2815.	2815.	2816.
79.	90.	81.	82.	85.	89.	102.	84.	74.	87.	74.	115.	109.	91.	69.	69.
4426.	3621.	3621.	3621.	3621.	3621.	4426.	3621.	3621.	3621.	4426.	3621.	3621.	3621.	3621.	3621.
51.	92.	85.	87.	84.	90.	111.	87.	79.	92.	81.	122.	120.	91.	69.	69.
5230.	4426.	4426.	4426.	4426.	4426.	5230.	4426.	4426.	4426.	5230.	4426.	4426.	4426.	4426.	4426.
53.	95.	91.	91.	89.	90.	121.	91.	82.	99.	83.	122.	120.	91.	69.	69.
6035.	5230.	5230.	5230.	5230.	5230.	6035.	5230.	5230.	5230.	6035.	5230.	5230.	5230.	5230.	5230.
85.	95.	95.	91.	88.	91.	127.	96.	84.	109.	85.	122.	120.	91.	59.	69.
7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.
87.	95.	95.	91.	98.	122.	133.	96.	91.	118.	101.	122.	120.	91.	59.	69.
15	2	14	16	16											

SITE BOUNDARY

1	0.23	2	0.29	3	0.36	4	0.35	5	0.50	6	0.55	7	1.23	8	1.89
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9	1.94	10	1.26	11	1.01	12	0.86	13	0.61	14	0.50	15	0.29	16	0.26
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MILK COW

11	1.30	13	4.20
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MEAT ANIMAL

1	2.32	2	2.08	3	2.27	4	2.59	5	3.97	6	4.07	7	1.50	8	2.84
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9	2.93	10	1.55	11	1.16	12	2.41	13	3.12	14	1.99
---	------	----	------	----	------	----	------	----	------	----	------

RESIDENT

1	0.30	2	0.30	3	0.40	4	0.40	5	0.40	6	0.70	7	1.30	8	2.90
---	------	---	------	---	------	---	------	---	------	---	------	---	------	---	------

9	2.90	10	1.30	11	1.20	12	0.90	13	0.80	14	0.60	15	0.30	16	0.30
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GARDEN

1	0.40	2	0.50	3	0.50	4	0.60	5	0.50	6	0.90	7	1.30	8	3.00
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9	2.90	10	1.40	11	1.30	12	2.20	13	2.80	14	0.60	15	0.30	16	0.30
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EXIT ONE GROUND LEVEL RELEASE 7/1/80-12/31/80

0.0	0.0	0.0	59.000	1370.0	10.0	0.0
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EXIT TWO MIXED-MODE RELEASE 7/1/80-12/31/80

20.100	1.400	60.700	59.000	1370.0	11.0	0.0
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0	0	0	0
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XONOLIN - ROBINSON GROUND AND MIXED MODE RELEASES 7/1/80-12/31/80

THE JOINT FREQUENCY DISTRIBUTION, I=WIND SPEED CLASS, J= STABILITY CLASS

DIRECTION =	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
I= 1, J= 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 2, J= 1	0.0	0.0	0.05	0.0	0.02	0.05	0.05	0.05	0.0	0.0	0.02	0.0	0.0	0.0	0.02	0.0
I= 3, J= 1	0.44	0.52	0.60	0.46	0.41	0.44	1.01	0.29	0.28	0.60	0.99	0.48	0.16	0.09	0.12	0.0
I= 4, J= 1	0.79	0.44	0.51	0.37	0.14	0.32	0.14	0.23	0.44	0.92	1.15	0.37	0.15	0.07	0.02	0.07
I= 5, J= 1	0.07	0.02	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.0	0.02	0.0	0.0	0.0	0.0
I= 6, J= 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 7, J= 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 1, J= 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 2, J= 2	0.0	0.02	0.0	0.0	0.0	0.12	0.02	0.02	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.0
I= 3, J= 2	0.44	0.35	0.41	0.16	0.18	0.23	0.15	0.07	0.02	0.14	0.30	0.21	0.09	0.12	0.0	0.05
I= 4, J= 2	0.32	0.23	0.14	0.12	0.0	0.0	0.02	0.02	0.05	0.28	0.44	0.18	0.0	0.05	0.05	0.02
I= 5, J= 2	0.02	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.12	0.0	0.0	0.0	0.0
I= 6, J= 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 7, J= 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 1, J= 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 2, J= 3	0.02	0.0	0.0	0.02	0.05	0.02	0.07	0.0	0.02	0.02	0.05	0.02	0.02	0.02	0.0	0.0
I= 3, J= 3	0.46	0.37	0.32	0.23	0.16	0.05	0.30	0.05	0.07	0.18	0.53	0.23	0.12	0.16	0.09	0.12
I= 4, J= 3	0.19	0.23	0.19	0.05	0.02	0.0	0.0	0.09	0.09	0.16	0.32	0.09	0.02	0.02	0.05	0.09
I= 5, J= 3	0.02	0.02	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.07	0.0	0.05	0.0	0.0	0.0
I= 6, J= 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 7, J= 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 1, J= 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 2, J= 4	0.16	0.19	0.23	0.23	0.25	0.14	0.32	0.12	0.18	0.18	0.16	0.28	0.23	0.28	0.09	0.16
I= 3, J= 4	1.84	2.36	1.78	1.01	0.69	0.44	0.67	0.83	1.50	1.34	0.97	0.62	0.76	0.51	0.44	0.85
I= 4, J= 4	0.97	4.29	1.66	0.32	0.07	0.05	0.12	0.32	0.69	0.74	0.35	0.41	0.07	0.05	0.0	0.30
I= 5, J= 4	0.32	0.52	0.21	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.05	0.0	0.0	0.0	0.0	0.18
I= 6, J= 4	0.0	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 7, J= 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 1, J= 5	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01
I= 2, J= 5	0.58	0.46	0.29	0.12	0.16	0.18	0.12	0.53	1.31	1.45	0.92	0.69	0.41	0.55	0.46	0.97
I= 3, J= 5	1.11	0.58	0.28	0.25	0.09	0.23	0.21	1.24	1.54	3.25	1.11	0.39	0.16	0.16	0.30	1.49
I= 4, J= 5	0.02	0.07	0.0	0.0	0.0	0.0	0.02	0.05	0.02	0.23	0.21	0.16	0.0	0.02	0.09	0.25
I= 5, J= 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 6, J= 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 7, J= 5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 1, J= 6	0.02	0.01	0.00	0.01	0.0	0.00	0.00	0.02	0.03	0.03	0.02	0.01	0.01	0.00	0.01	0.04
I= 2, J= 6	0.57	0.35	0.05	0.21	0.0	0.09	0.09	0.60	0.92	0.95	0.60	0.32	0.41	0.16	0.39	1.29
I= 3, J= 6	0.21	0.02	0.02	0.0	0.0	0.0	0.0	0.14	0.62	0.63	0.32	0.23	0.07	0.07	0.14	1.06
I= 4, J= 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.02	0.0	0.0	0.0	0.0	0.0	0.0
I= 5, J= 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 6, J= 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 7, J= 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 1, J= 7	0.03	0.04	0.02	0.01	0.00	0.01	0.01	0.02	0.07	0.03	0.02	0.02	0.01	0.01	0.06	0.24
I= 2, J= 7	0.97	0.53	0.14	0.14	0.07	0.09	0.14	0.28	0.40	0.30	0.23	0.18	0.09	0.09	0.71	2.86
I= 3, J= 7	0.25	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.16	0.02	0.05	0.14	0.05	0.0	0.0	0.65
I= 4, J= 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 5, J= 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 6, J= 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 7, J= 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TOTAL 9.99 12.39 6.94 3.73 2.34 2.16 3.49 5.00 8.96 11.75 8.90 5.26 2.93 2.44 3.05 10.68

TOTAL HOURS CONSIDERED ARE 4338

WIND MEASURED AT 11.0 METERS.

MAXIMUM WIND SPEED (METERS/SEC) IN EACH CLASS IS: 0.33 0.565 3.353 5.588 8.270 11.176 11.623

CONVERSION FACTOR APPLIED TO THE WIND SPEED CLASSES IS 0.447

DISTANCES AND TERRAIN HEIGHTS IN METERS AS FUNCTIONS OF DIRECTION FROM THE SITE:

DIRECTION =	S	SSW	SW	WSW	W	WNW	NW	NNW	N	NNE	NE	ENE	E	ESE	SE	SSE
DISTANCE	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.
ELEVATION	69.	71.	63.	66.	71.	73.	73.	70.	69.	71.	69.	73.	74.	72.	69.	69.
DISTANCE	451.	805.	579.	579.	805.	805.	418.	418.	418.	1207.	1207.	1207.	418.	405.	418.	418.
ELEVATION	70.	73.	69.	69.	73.	78.	73.	71.	70.	76.	72.	84.	74.	76.	69.	69.
DISTANCE	1207.	1207.	805.	906.	906.	1207.	1207.	1207.	1207.	2012.	1625.	1449.	1207.	956.	483.	483.
ELEVATION	72.	70.	70.	71.	74.	81.	82.	75.	79.	82.	73.	87.	86.	78.	69.	69.
DISTANCE	2012.	2012.	1207.	1207.	1207.	1449.	2012.	2012.	2012.	2253.	2012.	2012.	1449.	1207.	1207.	1207.
ELEVATION	74.	81.	72.	73.	75.	84.	91.	79.	74.	83.	74.	104.	89.	80.	69.	69.
DISTANCE	2415.	2415.	2012.	2012.	2012.	2012.	2916.	2815.	2815.	2655.	2315.	2015.	2012.	2012.	2012.	2012.
ELEVATION	78.	87.	77.	77.	80.	88.	92.	83.	77.	86.	76.	114.	98.	83.	69.	69.
DISTANCE	3021.	3347.	2816.	2916.	2916.	2816.	3621.	3042.	3122.	2816.	3621.	3541.	2816.	2816.	2916.	2916.
ELEVATION	79.	90.	81.	82.	85.	89.	102.	84.	78.	87.	78.	115.	109.	91.	69.	69.
DISTANCE	4426.	3621.	3621.	3621.	3621.	3621.	4426.	3621.	3621.	3621.	4426.	3621.	3621.	3621.	3621.	3621.
ELEVATION	81.	92.	86.	87.	88.	90.	111.	87.	79.	92.	81.	122.	120.	91.	69.	69.
DISTANCE	5230.	4426.	4426.	4426.	4426.	4426.	5230.	4426.	4426.	4426.	5230.	4426.	4426.	4426.	4426.	4426.
ELEVATION	83.	95.	91.	91.	98.	90.	121.	91.	82.	99.	83.	122.	120.	91.	69.	69.
DISTANCE	6035.	5230.	5230.	5230.	5230.	5230.	6035.	5230.	5230.	5230.	6035.	5230.	5230.	5230.	5230.	5230.
ELEVATION	85.	95.	95.	91.	88.	91.	127.	85.	84.	109.	85.	122.	120.	91.	69.	69.
DISTANCE	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.	7644.
ELEVATION	87.	95.	95.	91.	88.	122.	133.	96.	91.	118.	101.	122.	120.	91.	69.	69.

EXIT LINE GROUND LEVEL RELEASE 7/1/80-12/31/80
NO DECAY, UNDEPLETED

SECTOR	ANNUAL AVERAGE CHI/O (SEC/METER CUBED)									
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000
S	2.145E-05	6.446E-05	3.258E-05	2.094E-05	1.153E-05	7.824E-07	5.855E-07	4.622E-07	3.726E-07	3.197E-07
SSW	1.518E-05	4.834E-06	2.507E-06	1.615E-06	8.821E-07	5.879E-07	4.323E-07	3.355E-07	2.727E-07	2.273E-07
SW	6.870E-06	2.218E-06	1.164E-06	7.471E-07	4.044E-07	2.554E-07	1.939E-07	1.494E-07	1.205E-07	9.984E-08
WSW	5.135E-06	1.609E-06	4.268E-07	5.350E-07	2.945E-07	1.945E-07	1.444E-07	1.124E-07	9.099E-08	7.582E-08
W	2.793E-06	9.060E-07	4.796E-07	3.074E-07	1.658E-07	1.080E-07	7.869E-08	5.053E-08	4.954E-08	4.011E-08
WNW	3.382E-06	1.036E-06	5.367E-07	3.452E-07	1.899E-07	1.265E-07	9.297E-08	7.224E-08	5.646E-08	4.971E-08
N	4.498E-06	1.391E-06	7.111E-07	4.546E-07	2.471E-07	1.640E-07	1.203E-07	9.347E-08	7.560E-08	6.295E-08
NNW	1.101E-05	3.357E-06	1.742E-06	1.147E-06	6.451E-07	4.373E-07	3.247E-07	2.547E-07	2.075E-07	1.738E-07
N	2.423E-05	7.339E-06	3.765E-06	2.455E-06	1.373E-06	9.331E-07	6.984E-07	5.491E-07	4.491E-07	3.774E-07
NNE	2.750E-05	6.346E-06	3.372E-06	2.237E-06	1.267E-06	8.533E-07	6.297E-07	4.915E-07	3.987E-07	3.328E-07
NE	1.307E-05	3.970E-06	2.070E-06	1.364E-06	7.653E-07	5.141E-07	3.791E-07	2.958E-07	2.399E-07	2.003E-07
E	9.070E-06	2.794E-06	1.453E-06	9.525E-07	5.305E-07	3.551E-07	2.627E-07	2.051E-07	1.554E-07	1.309E-07
ESE	6.245E-06	1.945E-06	1.014E-06	6.688E-07	3.769E-07	2.532E-07	1.806E-07	1.455E-07	1.160E-07	9.839E-08
E	5.075E-06	1.611E-06	8.630E-07	5.665E-07	3.152E-07	2.101E-07	1.539E-07	1.195E-07	9.647E-08	8.021E-08
SE	1.266E-05	3.755E-06	1.874E-06	1.205E-06	6.554E-07	4.559E-07	3.440E-07	2.733E-07	2.251E-07	1.903E-07
SSE	4.792E-05	1.409E-05	6.945E-06	4.443E-06	2.448E-06	1.695E-06	1.278E-06	1.020E-06	8.427E-07	7.143E-07

BEARING	ANNUAL AVERAGE CHI/O (SEC/METER CUBED)									
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	50.000
S	2.392E-07	1.426E-07	9.911E-09	5.959E-08	4.168E-08	3.163E-08	2.528E-08	2.092E-08	1.777E-08	1.540E-08
SSW	1.679E-07	9.747E-08	6.550E-08	3.903E-08	2.536E-08	2.015E-08	1.595E-08	1.310E-08	1.104E-08	9.528E-09
SW	7.310E-08	4.180E-08	2.824E-08	1.635E-08	1.117E-08	8.331E-09	6.565E-09	5.374E-09	4.521E-09	3.885E-09
WSW	5.549E-08	3.247E-08	2.210E-08	1.299E-08	8.943E-09	6.704E-09	5.312E-09	4.354E-09	3.583E-09	3.173E-09
W	2.924E-08	1.658E-08	1.114E-08	6.407E-09	4.360E-09	3.243E-09	2.550E-09	2.084E-09	1.751E-09	1.502E-09
WNW	3.600E-08	2.098E-08	1.435E-08	8.452E-09	5.832E-09	4.392E-09	3.473E-09	2.857E-09	2.413E-09	2.081E-09
NW	4.545E-08	2.693E-08	1.838E-08	1.081E-08	7.457E-09	5.618E-09	4.459E-09	3.672E-09	3.105E-09	2.680E-09
NNW	1.294E-07	7.594E-08	5.217E-08	3.086E-08	2.133E-08	1.604E-08	1.272E-08	1.046E-08	8.837E-09	7.618E-09
N	2.525E-07	1.574E-07	1.157E-07	6.910E-08	4.905E-08	3.631E-08	2.891E-08	2.385E-08	2.021E-08	1.747E-08
NNE	2.462E-07	1.430E-07	9.749E-08	5.706E-08	3.915E-08	2.927E-08	2.310E-08	1.893E-08	1.593E-08	1.359E-08
NE	1.483E-07	8.630E-08	5.897E-08	3.466E-08	2.399E-08	1.792E-08	1.419E-08	1.166E-08	9.835E-09	8.470E-09
E	1.024E-07	6.003E-08	4.107E-08	2.413E-08	1.667E-08	1.252E-08	9.913E-09	8.145E-09	6.875E-09	5.924E-09
ESE	7.273E-08	4.218E-08	2.874E-08	1.682E-08	1.154E-08	8.635E-09	6.819E-09	5.589E-09	4.707E-09	4.047E-09
E	5.999E-08	3.591E-08	2.297E-08	1.334E-08	9.108E-09	6.788E-09	5.344E-09	4.370E-09	3.672E-09	3.152E-09
SE	1.435E-07	8.557E-08	6.063E-08	3.676E-08	2.584E-08	1.969E-08	1.578E-08	1.309E-08	1.114E-08	9.560E-09
SSE	5.422E-07	3.291E-07	2.314E-07	1.412E-07	9.962E-08	7.611E-08	6.113E-08	5.082E-08	4.332E-08	3.754E-08

CHI/O (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	3.453E-06	1.197E-06	5.987E-07	3.797E-07	2.743E-07	1.448E-07	6.041E-09	3.177E-08	2.047E-08	1.541E-08
SSW	2.628E-06	9.142E-07	4.355E-07	2.737E-07	1.941E-07	9.937E-08	3.973E-08	2.026E-08	1.314E-08	9.543E-09
SW	1.213E-06	4.192E-07	1.956E-07	1.210E-07	8.495E-08	4.273E-08	1.669E-08	8.382E-09	5.389E-09	3.892E-09
WSW	8.710E-07	3.044E-07	1.455E-07	9.132E-08	6.473E-08	3.311E-08	1.322E-08	6.746E-09	4.375E-09	3.178E-09
W	4.979E-07	1.719E-07	7.942E-08	4.876E-08	3.402E-08	1.697E-08	6.549E-09	3.264E-09	2.040E-09	1.505E-09
WNW	5.551E-07	1.965E-07	9.358E-08	5.869E-08	4.160E-08	2.137E-08	8.599E-09	4.405E-09	2.854E-09	2.094E-09
NW	7.491E-07	2.563E-07	1.212E-07	7.599E-08	5.372E-08	2.747E-08	1.100E-08	5.647E-09	3.681E-09	2.684E-09
NNW	1.836E-06	6.645E-07	3.267E-07	2.081E-07	1.490E-07	7.725E-08	3.136E-08	1.612E-08	1.049E-08	7.630E-09
N	3.978E-06	1.413E-06	7.007E-07	4.503E-07	3.246E-07	1.700E-07	7.011E-08	3.648E-08	2.391E-08	1.749E-08
NNE	3.529E-06	1.249E-06	6.340E-07	4.001E-07	2.800E-07	1.457E-07	5.503E-08	2.944E-08	1.698E-08	1.202E-08
NE	2.182E-06	7.865E-07	3.618E-07	2.408E-07	1.700E-07	8.793E-08	3.527E-08	1.502E-08	1.169E-08	8.167E-09
E	1.500E-06	5.469E-07	2.645E-07	1.670E-07	1.180E-07	6.114E-08	2.450E-08	1.258E-08	8.167E-09	5.604E-09
ESE	1.018E-06	3.818E-07	1.879E-07	1.181E-07	8.471E-08	4.300E-08	1.712E-08	7.689E-09	5.604E-09	4.053E-09

1.075E-07 3.244E-07 1.551E-07 9.645E-04 5.834E-09 3.462E-04 1.360E-08 6.829E-09 4.383E-09 3.157E-09
 1.075E-06 5.821E-07 3.456E-07 2.256E-07 1.644E-07 8.780E-08 3.721E-08 1.975E-04 1.311E-04 9.677E-09
 7.732E-05 2.553E-06 1.284E-06 8.444E-07 6.103E-07 3.330E-07 1.427E-07 7.639E-08 5.091E-08 3.766E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS) 0.0
 DIAMETER (METERS) 0.0
 EXIT VELOCITY (METERS) 0.0

REF. WIND HEIGHT (METERS) 10.0
 BUILDING HEIGHT (METERS) 59.0
 BLDG. MIN. CRS. SEC. AREA (SQ. METERS) 1370.0
 HEAT EMISSION RATE (CAL/SEC) 0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE WIND SPEED (METERS/SEC)

AT THE MEASURED WIND HEIGHT (11.0 METERS):

WIND SPEED (METERS/SEC)

ELEVATED LESS THAN 0.0
 MIXED BETWEEN 0.0 AND 0.0
 GROUND LEVEL ABOVE 0.0

ELEVATED LESS THAN 0.0
 MIXED BETWEEN 0.0 AND 0.0
 GROUND LEVEL ABOVE 0.0

UNSTABLE/NEUTRAL CONDITIONS
 LESS THAN 0.0
 BETWEEN 0.0 AND 0.0
 ABOVE 0.0

EXHAUSTIVE GROUND LEVEL RELEASE 7/1/80-12/31/80
2.260 DAY DECAY, UNDEPLETED

SECTION	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
S	2.139E-05	5.433E-06	3.231E-06	2.073E-06	1.136E-06	7.470E-07	5.708E-07	4.432E-07	3.652E-07	3.057E-07	2.613E-07	2.284E-07	2.044E-07	1.868E-07	1.730E-07
SSW	1.515E-05	4.814E-06	2.492E-06	1.603E-06	8.718E-07	5.796E-07	4.235E-07	3.284E-07	2.644E-07	2.197E-07	1.863E-07	1.605E-07	1.404E-07	1.250E-07	1.130E-07
SW	6.457E-06	2.210E-06	1.158E-06	7.421E-07	4.303E-07	2.627E-07	1.905E-07	1.455E-07	1.174E-07	9.685E-08	8.190E-08	7.022E-08	6.203E-08	5.595E-08	5.050E-08
WSW	5.123E-06	1.603E-06	8.218E-07	5.307E-07	2.910E-07	1.433E-07	1.414E-07	1.095E-07	8.829E-08	7.322E-08	6.203E-08	5.291E-08	4.595E-08	4.050E-08	3.605E-08
W	2.792E-06	9.028E-07	4.771E-07	3.053E-07	1.641E-07	1.071E-07	7.730E-08	5.923E-08	4.731E-08	3.895E-08	3.291E-08	2.845E-08	2.515E-08	2.245E-08	2.025E-08
WNW	3.375E-06	1.032E-06	5.334E-07	3.434E-07	1.875E-07	1.244E-07	9.093E-08	7.041E-08	5.673E-08	4.705E-08	3.990E-08	3.400E-08	2.955E-08	2.615E-08	2.345E-08
NW	4.444E-06	1.345E-06	7.067E-07	4.510E-07	2.441E-07	1.514E-07	1.178E-07	9.112E-08	7.335E-08	6.080E-08	5.152E-08	4.445E-08	3.895E-08	3.400E-08	3.099E-08
NNW	1.099E-05	3.342E-06	1.731E-06	1.137E-06	6.378E-07	4.298E-07	3.176E-07	2.480E-07	2.011E-07	1.577E-07	1.248E-07	1.022E-07	8.695E-08	7.515E-08	6.595E-08
N	2.417E-05	7.302E-06	3.734E-06	2.221E-06	1.253E-06	8.410E-07	6.183E-07	4.807E-07	3.895E-07	3.230E-07	2.744E-07	2.395E-07	2.145E-07	1.945E-07	1.785E-07
NNE	2.056E-05	6.322E-06	3.354E-06	2.221E-06	1.253E-06	8.410E-07	6.183E-07	4.807E-07	3.895E-07	3.230E-07	2.744E-07	2.395E-07	2.145E-07	1.945E-07	1.785E-07
NE	1.304E-05	3.963E-06	2.064E-06	1.353E-06	7.565E-07	5.061E-07	3.574E-07	2.801E-07	2.233E-07	1.839E-07	1.547E-07	1.342E-07	1.182E-07	1.052E-07	9.455E-08
ENE	9.059E-06	2.782E-06	1.449E-06	9.450E-07	5.243E-07	3.304E-07	2.574E-07	2.001E-07	1.617E-07	1.344E-07	1.142E-07	9.515E-08	8.155E-08	7.155E-08	6.355E-08
E	5.231E-06	1.939E-06	1.007E-06	6.635E-07	3.723E-07	2.492E-07	1.828E-07	1.419E-07	1.145E-07	9.515E-08	8.155E-08	7.155E-08	6.355E-08	5.655E-08	5.050E-08
ESE	5.066E-06	1.605E-06	8.574E-07	5.621E-07	3.115E-07	2.068E-07	1.509E-07	1.166E-07	9.375E-08	7.761E-08	6.559E-08	5.655E-08	4.955E-08	4.355E-08	3.855E-08
SE	1.262E-05	3.732E-06	1.857E-06	1.190E-06	6.536E-07	4.451E-07	3.336E-07	2.535E-07	2.153E-07	1.813E-07	1.554E-07	1.354E-07	1.204E-07	1.084E-07	9.844E-08
SSE	4.777E-05	1.401E-05	6.842E-06	4.341E-06	2.405E-06	1.646E-06	1.241E-06	9.841E-07	8.081E-07	6.909E-07	5.952E-07	5.152E-07	4.502E-07	3.952E-07	3.502E-07

SEAKING	ANNUAL AVERAGE CHI/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
S	2.271E-07	1.319E-07	8.926E-08	5.103E-08	3.492E-08	2.456E-08	1.887E-08	1.498E-08	1.223E-08	1.019E-08	8.543E-09	7.284E-09	6.355E-09	5.655E-09	5.050E-09
SSW	1.039E-07	9.121E-08	6.081E-08	3.411E-08	2.248E-08	1.617E-08	1.230E-08	9.711E-09	7.903E-09	6.559E-09	5.555E-09	4.855E-09	4.305E-09	3.855E-09	3.455E-09
SW	7.035E-08	3.940E-08	2.068E-08	1.449E-08	9.513E-09	6.828E-09	5.187E-09	4.099E-09	3.333E-09	2.772E-09	2.346E-09	2.015E-09	1.755E-09	1.535E-09	1.355E-09
WSW	5.357E-08	3.035E-08	2.026E-08	1.135E-08	7.442E-09	5.385E-09	4.097E-09	3.240E-09	2.636E-09	2.191E-09	1.853E-09	1.605E-09	1.404E-09	1.250E-09	1.130E-09
W	2.516E-08	1.565E-08	1.031E-08	5.706E-09	3.740E-09	2.662E-09	2.036E-09	1.609E-09	1.307E-09	1.086E-09	9.179E-10	7.822E-10	6.755E-10	5.955E-10	5.305E-10
WNW	3.445E-08	1.953E-08	1.314E-08	7.409E-09	4.903E-09	3.539E-09	2.699E-09	2.133E-09	1.742E-09	1.450E-09	1.228E-09	1.052E-09	9.155E-10	8.055E-10	7.155E-10
NW	4.445E-08	2.518E-08	1.679E-08	9.439E-09	6.247E-09	4.510E-09	3.441E-09	2.727E-09	2.223E-09	1.852E-09	1.569E-09	1.347E-09	1.182E-09	1.052E-09	9.455E-10
NNW	1.237E-07	7.054E-08	4.765E-08	2.699E-08	1.787E-08	1.291E-08	9.843E-09	7.793E-09	6.353E-09	5.288E-09	4.477E-09	3.895E-09	3.400E-09	3.099E-09	2.845E-09
N	2.599E-07	1.554E-07	1.044E-07	5.971E-08	3.969E-08	2.871E-08	2.192E-08	1.730E-08	1.417E-08	1.180E-08	9.990E-09	8.548E-09	7.455E-09	6.595E-09	5.950E-09
NNE	2.372E-07	1.351E-07	9.044E-08	5.103E-08	3.340E-08	2.442E-08	1.865E-08	1.490E-08	1.204E-08	1.009E-08	8.548E-09	7.455E-09	6.595E-09	5.950E-09	5.405E-09
NE	1.424E-07	8.117E-08	5.435E-08	3.070E-08	2.037E-08	1.474E-08	1.126E-08	8.942E-09	7.301E-09	6.091E-09	5.158E-09	4.477E-09	3.895E-09	3.400E-09	3.099E-09
ENE	9.875E-08	5.539E-08	3.779E-08	2.135E-08	1.417E-08	1.024E-08	7.926E-09	6.211E-09	5.070E-09	4.229E-09	3.586E-09	3.052E-09	2.615E-09	2.284E-09	2.025E-09
E	6.974E-08	3.960E-08	2.642E-08	1.484E-08	9.789E-09	7.047E-09	5.351E-09	4.239E-09	3.447E-09	2.864E-09	2.421E-09	2.077E-09	1.813E-09	1.595E-09	1.425E-09
ESE	5.850E-08	3.180E-08	2.113E-08	1.177E-08	7.725E-09	5.538E-09	4.199E-09	3.310E-09	2.685E-09	2.225E-09	1.877E-09	1.617E-09	1.404E-09	1.250E-09	1.130E-09
SE	1.363E-07	7.913E-08	5.374E-08	3.078E-08	2.049E-08	1.482E-08	1.130E-08	8.947E-09	7.278E-09	6.047E-09	5.110E-09	4.405E-09	3.855E-09	3.405E-09	3.055E-09
SSE	5.107E-07	3.010E-07	2.056E-07	1.187E-07	7.945E-08	5.775E-08	4.423E-08	3.515E-08	2.869E-08	2.392E-08	2.024E-08	1.755E-08	1.535E-08	1.355E-08	1.215E-08

DIRECTION FROM SITE	CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT										SEGMENT BOUNDARIES IN MILES				
	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50	5-10	10-20	20-30	30-40	40-50
S	3.426E-09	1.190E-09	5.741E-07	3.663E-07	2.618E-07	1.341E-07	5.196E-08	2.484E-08	1.504E-08	1.022E-08	5-10	10-20	20-30	30-40	40-50
SSW	2.613E-09	9.039E-07	4.269E-07	2.658E-07	1.863E-07	9.317E-08	3.487E-08	1.630E-08	9.763E-09	6.589E-09	5-10	10-20	20-30	30-40	40-50
SW	1.207E-09	4.151E-07	1.921E-07	1.174E-07	8.203E-08	4.035E-08	1.485E-08	6.898E-09	4.118E-09	2.763E-09	5-10	10-20	20-30	30-40	40-50
WSW	8.659E-07	3.009E-07	1.425E-07	8.862E-08	6.223E-08	3.101E-08	1.160E-08	5.429E-09	3.255E-09	2.199E-09	5-10	10-20	20-30	30-40	40-50
W	4.954E-07	1.702E-07	7.803E-08	4.753E-08	3.291E-08	1.605E-08	5.855E-09	2.706E-09	1.615E-09	1.089E-09	5-10	10-20	20-30	30-40	40-50
WNW	5.594E-07	1.941E-07	9.184E-08	5.695E-08	4.000E-08	2.004E-08	7.563E-09	3.567E-09	2.143E-09	1.455E-09	5-10	10-20	20-30	30-40	40-50
NW	7.438E-07	2.533E-07	1.187E-07	7.364E-08	5.105E-08	2.573E-08	9.654E-09	4.545E-09	2.739E-09	1.857E-09	5-10	10-20	20-30	30-40	40-50
NNW	1.225E-09	6.552E-07	3.197E-07	2.018E-07	1.431E-07	7.231E-08	2.752E-08	1.300E-08	7.632E-09	5.303E-09	5-10	10-20	20-30	30-40	40-50
N	3.450E-09	1.399E-06	6.842E-07	4.353E-07	3.105E-07	1.582E-07	6.095E-08	2.992E-08	1.745E-08	1.183E-08	5-10	10-20	20-30	30-40	40-50
NNE	3.510E-09	1.285E-06	6.227E-07	3.899E-07	2.341E-07	1.107E-07	5.213E-08	2.451E-08	1.497E-08	9.101E-09	5-10	10-20	20-30	30-40	40-50
NE	2.170E-09	7.778E-07	3.744E-07	2.341E-07	1.107E-07	5.213E-08	3.136E-08	1.445E-08	8.960E-09	5.070E-09	5-10	10-20	20-30	30-40	40-50
ENE	1.521E-09	5.405E-07	2.543E-07	1.623E-07	1.107E-07	5.213E-08	2.181E-08	1.032E-08	6.238E-09	3.405E-09	5-10	10-20	20-30	30-40	40-50

SEE	1.924E-07	3.205E-07	1.521E-07	9.413E-07	5.546E-08	3.259E-05	1.205E-09	5.586E-09	3.326E-09	2.232E-09
SE	1.977E-05	6.802E-07	3.354E-07	2.163E-07	1.557E-07	8.034E-08	3.131E-08	1.493E-08	8.985E-09	5.065E-09
SEE	7.355E-05	2.509E-06	1.246E-06	8.099E-07	5.860E-07	3.052E-07	1.205E-07	5.813E-08	3.529E-08	2.399E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	0.0	REP. WIND HEIGHT (METERS)	10.0
DIAMETER (METERS)	0.0	BUILDING HEIGHT (METERS)	59.0
EXIT VELOCITY (METERS)	0.0	BLDG. MIN. CRS. SEC. AREA (SQ. METERS)	1370.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE WIND SPEED (METERS/SEC)

ELEVATED	LESS THAN	0.0	
MIXED	BETWEEN	0.0	AND 0.0
GROUND LEVEL	ABOVE	0.0	

AT THE MEASURED WIND HEIGHT (11.0 METERS):

VENT RELEASE MODE WIND SPEED (METERS/SEC)

ELEVATED	LESS THAN	0.0	
MIXED	BETWEEN	0.0	AND 0.0
GROUND LEVEL	ABOVE	0.0	

WIND SPEED (METERS/SEC)

UNSTABLE/NEUTRAL CONDITIONS
LESS THAN 0.0
BETWEEN 0.0 AND 0.0
ABOVE 0.0

EXIT ONE GROUND LEVEL RELEASE 7/1/80-12/31/80
8.000 DAY DECAY, DEPLETED

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	2.024E-05	5.895E-06	2.495E-06	1.828E-06	9.749E-07	6.443E-07	4.739E-07	3.639E-07	2.924E-07	2.417E-07	2.043E-07
SSW	1.436E-05	4.409E-06	2.230E-06	1.411E-06	7.466E-07	4.846E-07	3.482E-07	2.655E-07	2.110E-07	1.724E-07	1.444E-07
SW	6.498E-05	2.023E-05	1.036E-05	6.527E-07	3.424E-07	2.197E-07	1.563E-07	1.182E-07	9.330E-08	7.593E-08	6.338E-08
WSW	4.457E-06	1.408E-06	7.355E-07	4.673E-07	2.493E-07	1.620E-07	1.163E-07	8.852E-08	7.033E-08	5.752E-08	4.924E-08
W	2.646E-06	8.265E-07	4.268E-07	2.595E-07	1.404E-07	9.960E-08	6.342E-08	4.179E-08	3.760E-08	3.053E-08	2.541E-08
WNW	3.199E-05	9.454E-07	4.774E-07	3.024E-07	1.607E-07	1.042E-07	7.478E-08	5.695E-08	4.523E-08	3.702E-08	3.102E-08
NW	4.254E-06	1.258E-06	6.326E-07	3.970E-07	2.091E-07	1.352E-07	9.646E-08	7.371E-08	5.944E-08	4.784E-08	4.007E-08
NNW	1.041E-05	3.062E-06	1.550E-06	1.001E-06	5.467E-07	3.503E-07	2.514E-07	2.009E-07	1.605E-07	1.320E-07	1.111E-07
N	2.292E-05	6.692E-06	3.349E-06	2.144E-06	1.161E-06	7.585E-07	5.606E-07	4.325E-07	3.470E-07	2.865E-07	2.418E-07
NNE	1.949E-05	5.789E-06	3.001E-06	1.954E-06	1.073E-06	7.037E-07	5.074E-07	3.879E-07	3.088E-07	2.533E-07	2.125E-07
NE	1.236E-05	3.529E-06	1.847E-06	1.191E-06	6.478E-07	4.234E-07	3.054E-07	2.333E-07	1.957E-07	1.523E-07	1.278E-07
ENE	8.585E-06	2.545E-06	1.297E-06	8.319E-07	4.491E-07	2.935E-07	2.116E-07	1.617E-07	1.284E-07	1.057E-07	8.869E-08
E	5.907E-05	1.775E-05	9.017E-07	5.841E-07	3.197E-07	2.087E-07	1.503E-07	1.149E-07	9.123E-08	7.490E-08	6.273E-08
ESE	4.531E-06	1.470E-06	7.677E-07	4.949E-07	2.668E-07	1.732E-07	1.240E-07	9.424E-08	7.457E-08	6.099E-08	5.100E-08
SE	1.147E-05	3.423E-06	1.666E-06	1.051E-06	5.622E-07	3.749E-07	2.763E-07	2.149E-07	1.735E-07	1.441E-07	1.222E-07
SSE	4.531E-05	1.285E-05	6.173E-06	3.876E-06	2.069E-06	1.386E-06	1.027E-06	8.019E-07	6.497E-07	5.409E-07	4.597E-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	1.756E-07	9.827E-08	6.456E-08	3.536E-08	2.286E-08	1.619E-08	1.214E-08	9.475E-09	7.615E-09	6.259E-09	5.236E-09
SSW	1.235E-07	6.739E-08	4.351E-08	2.330E-08	1.445E-08	1.040E-08	7.734E-09	6.000E-09	4.797E-09	3.925E-09	3.271E-09
SW	5.399E-08	2.596E-08	1.653E-08	9.806E-09	6.208E-09	4.330E-09	3.210E-09	2.483E-09	1.941E-09	1.519E-09	1.349E-09
WSW	4.121E-08	2.244E-08	1.440E-08	7.754E-09	4.945E-09	3.466E-09	2.580E-09	2.001E-09	1.601E-09	1.310E-09	1.092E-09
W	2.156E-08	1.150E-08	7.315E-09	3.849E-09	2.431E-09	1.692E-09	1.254E-09	9.390E-10	7.729E-10	6.312E-10	5.254E-10
WNW	2.650E-08	1.451E-08	9.394E-09	5.053E-09	3.231E-09	2.269E-09	1.692E-09	1.315E-09	1.053E-09	8.635E-10	7.208E-10
NW	3.419E-08	1.862E-08	1.202E-08	6.452E-09	4.129E-09	2.903E-09	2.166E-09	1.694E-09	1.350E-09	1.107E-09	9.246E-10
NNW	9.519E-08	5.248E-08	3.413E-08	1.843E-08	1.180E-08	8.294E-09	6.186E-09	4.807E-09	3.849E-09	3.154E-09	2.632E-09
N	2.076E-07	1.155E-07	7.554E-08	4.112E-08	2.546E-08	1.867E-08	1.346E-08	1.088E-08	8.724E-09	7.159E-09	5.942E-09
NNE	1.815E-07	9.915E-08	5.407E-08	3.432E-08	2.185E-08	1.532E-08	1.140E-08	8.940E-09	7.076E-09	5.738E-09	4.827E-09
NE	1.042E-07	5.977E-08	3.658E-08	2.079E-08	1.329E-08	9.335E-09	6.951E-09	5.409E-09	4.333E-09	3.552E-09	2.955E-09
ENE	7.583E-08	4.156E-08	2.693E-08	1.449E-08	9.265E-09	6.510E-09	4.855E-09	3.773E-09	3.022E-09	2.478E-09	2.069E-09
E	5.356E-08	2.920E-08	1.884E-08	1.008E-08	6.414E-09	4.490E-09	3.338E-09	2.587E-09	2.069E-09	1.691E-09	1.410E-09
ESE	4.345E-08	2.348E-08	1.506E-08	7.992E-09	5.062E-09	3.530E-09	2.615E-09	2.023E-09	1.513E-09	1.317E-09	1.095E-09
SE	1.053E-07	5.950E-08	3.931E-08	2.157E-08	1.405E-08	9.968E-09	7.482E-09	5.842E-09	4.695E-09	3.859E-09	3.227E-09
SSE	3.972E-07	2.260E-07	1.501E-07	8.329E-08	5.426E-08	3.862E-08	2.907E-08	2.275E-08	1.833E-08	1.509E-08	1.254E-08

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

SEGMENT BOUNDARIES IN MILES

DIRECTION FROM SITE	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.048E-06	1.018E-06	4.743E-07	2.939E-07	2.048E-07	1.005E-07	3.629E-08	1.635E-08	9.528E-09	6.262E-09
SSW	2.351E-06	7.777E-07	3.515E-07	2.120E-07	1.453E-07	6.927E-08	2.403E-08	1.052E-08	6.028E-09	3.941E-09
SW	1.045E-06	3.568E-07	1.580E-07	9.382E-08	6.360E-08	2.986E-08	1.014E-08	4.393E-09	2.500E-09	1.626E-09
WSW	7.741E-07	2.589E-07	1.174E-07	7.073E-08	4.843E-08	2.304E-08	8.001E-09	3.506E-09	2.014E-09	1.316E-09
W	4.453E-07	1.463E-07	6.415E-08	3.782E-08	2.550E-08	1.137E-08	3.989E-09	1.714E-09	9.755E-10	6.340E-10
WNW	5.035E-07	1.571E-07	7.550E-08	4.545E-08	3.113E-08	1.490E-08	5.209E-09	2.245E-09	1.323E-09	8.669E-10
NW	6.692E-07	2.180E-07	9.782E-08	5.879E-08	4.019E-08	1.915E-08	6.658E-09	2.935E-09	1.545E-09	1.111E-09
NNW	1.642E-06	5.048E-07	2.635E-07	1.612E-07	1.114E-07	5.382E-08	1.897E-08	8.386E-09	4.836E-09	3.166E-09
N	3.556E-06	1.205E-06	5.648E-07	3.484E-07	2.424E-07	1.182E-07	4.226E-08	1.887E-08	1.094E-08	7.161E-09
NNE	3.155E-06	1.105E-06	5.120E-07	3.103E-07	2.131E-07	1.019E-07	3.539E-08	1.549E-08	8.846E-09	5.811E-09
NE	1.952E-06	6.590E-07	3.051E-07	1.866E-07	1.292E-07	6.139E-08	2.143E-08	9.441E-09	5.443E-09	3.561E-09
ENE	1.368E-06	4.850E-07	2.135E-07	1.244E-07	8.845E-08	4.267E-08	1.493E-08	6.883E-09	3.798E-09	2.487E-09
E	9.517E-07	3.284E-07	1.517E-07	9.171E-08	6.191E-08	3.731E-08	1.111E-08	1.111E-08	1.111E-08	1.111E-08

SE	5.024E-07	2.759E-07	1.252E-07	7.505E-08	5.117E-08	2.418E-08	8.261E-09	3.573E-09	2.030E-09	1.322E-09
SE	1.743E-06	5.576E-07	2.780E-07	1.741E-07	1.224E-07	6.071E-08	2.221E-08	1.006E-08	5.874E-09	3.873E-09
SE	6.636E-06	2.167E-06	1.033E-06	6.517E-07	4.606E-07	2.303E-07	8.524E-08	3.897E-08	2.287E-08	1.514E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	0.0	REP. WIND HEIGHT (METERS)	10.0
DIAMETER (METERS)	0.0	BUILDING HEIGHT (METERS)	59.0
EXIT VELOCITY (METERS)	0.0	BLOG. MIN. CRS. SEC. AREA (SQ. METERS)	1370.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 0.0
MIXED	BETWEEN 0.0 AND 0.0
GROUND LEVEL	ABOVE 0.0

AT THE MEASURED WIND HEIGHT (11.0 METERS):

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 0.0
MIXED	BETWEEN 0.0 AND 0.0
GROUND LEVEL	ABOVE 0.0

WIND SPEED (METERS/SEC)

UNSTABLE/NEUTRAL CONDITIONS
LESS THAN 0.0
BETWEEN 0.0 AND 0.0
ABOVE 0.0

EXIT ONE GROUND LEVEL RELEASE 7/1/80-12/31/80

RELATIVE DEPOSITION PER UNIT AREA (M²-2) 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	5.795E-08	1.957E-08	1.034E-08	6.169E-09	3.075E-09	1.865E-09	1.261E-09	9.133E-10	6.949E-10	5.474E-10	4.432E-10
SSW	7.174E-08	2.426E-08	1.246E-08	7.649E-09	3.813E-09	2.313E-09	1.564E-09	1.133E-09	8.616E-10	6.788E-10	5.495E-10
SW	4.015E-08	1.358E-08	5.973E-09	4.262E-09	2.135E-09	1.295E-09	8.753E-10	5.343E-10	3.323E-10	3.400E-10	3.076E-10
WSW	2.160E-08	7.303E-09	3.750E-09	2.302E-09	1.148E-09	6.952E-10	4.707E-10	3.411E-10	2.594E-10	2.043E-10	1.654E-10
W	1.352E-08	4.572E-09	2.349E-09	1.442E-09	7.197E-10	4.359E-10	2.947E-10	2.135E-10	1.624E-10	1.279E-10	1.036E-10
WNW	1.249E-08	4.220E-09	2.167E-09	1.331E-09	6.633E-10	4.023E-10	2.720E-10	1.971E-10	1.499E-10	1.181E-10	9.559E-11
NW	2.023E-08	6.842E-09	3.513E-09	2.157E-09	1.075E-09	6.523E-10	4.410E-10	3.195E-10	2.430E-10	1.914E-10	1.550E-10
NNW	2.495E-08	9.794E-09	5.029E-09	3.089E-09	1.539E-09	9.337E-10	6.313E-10	4.574E-10	3.478E-10	2.740E-10	2.218E-10
N	5.149E-08	1.755E-08	9.010E-09	5.533E-09	2.753E-09	1.673E-09	1.131E-09	8.195E-10	5.232E-10	4.910E-10	3.475E-10
NNE	6.304E-08	2.301E-08	1.181E-08	5.491E-09	2.738E-09	1.550E-09	1.123E-09	8.135E-10	6.186E-10	4.873E-10	3.945E-10
NE	5.151E-08	1.742E-08	8.943E-09	5.491E-09	2.738E-09	1.550E-09	1.123E-09	8.135E-10	6.186E-10	4.873E-10	3.945E-10
ENE	3.047E-08	1.030E-08	5.291E-09	3.249E-09	1.620E-09	9.823E-10	6.641E-10	4.313E-10	3.659E-10	2.833E-10	2.334E-10
E	1.694E-08	5.723E-09	2.941E-09	1.806E-09	9.003E-10	5.460E-10	3.692E-10	2.575E-10	2.034E-10	1.503E-10	1.297E-10
ESE	1.411E-08	4.771E-09	2.450E-09	1.504E-09	7.499E-10	4.543E-10	3.075E-10	2.223E-10	1.694E-10	1.335E-10	1.091E-10
SE	1.766E-08	5.971E-09	3.066E-09	1.883E-09	9.335E-10	5.692E-10	3.849E-10	2.749E-10	2.121E-10	1.571E-10	1.255E-10
SSE	6.192E-08	2.091E-08	1.073E-08	6.591E-09	3.286E-09	1.993E-09	1.347E-09	9.764E-10	7.425E-10	5.849E-10	4.735E-10

DISTANCES IN MILES

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	3.555E-10	1.797E-10	1.127E-10	5.647E-11	3.445E-11	2.312E-11	1.657E-11	1.244E-11	9.573E-12	7.727E-12	6.307E-12
SSW	4.545E-10	2.225E-10	1.394E-10	7.044E-11	4.276E-11	2.857E-11	2.054E-11	1.542E-11	1.199E-11	9.550E-12	7.920E-12
SW	2.545E-10	1.247E-10	7.324E-11	3.959E-11	2.394E-11	1.605E-11	1.150E-11	8.635E-12	5.714E-12	5.363E-12	4.378E-12
WSW	1.368E-10	5.735E-11	4.207E-11	2.127E-11	1.287E-11	8.630E-12	6.184E-12	4.643E-12	3.610E-12	2.584E-12	2.354E-12
W	8.567E-11	4.194E-11	2.634E-11	1.331E-11	8.058E-12	5.403E-12	3.871E-12	2.907E-12	2.250E-12	1.306E-12	1.474E-12
WNW	7.907E-11	3.875E-11	2.431E-11	1.229E-11	7.438E-12	4.987E-12	3.573E-12	2.683E-12	2.086E-12	1.667E-12	1.350E-12
NW	1.282E-10	5.293E-11	3.942E-11	1.992E-11	1.235E-11	8.036E-12	5.794E-12	4.350E-12	3.393E-12	2.702E-12	2.205E-12
NNW	1.435E-10	5.993E-11	5.543E-11	2.852E-11	1.725E-11	1.157E-11	8.293E-12	6.227E-12	4.842E-12	3.588E-12	3.157E-12
N	3.298E-10	1.611E-10	1.011E-10	5.110E-11	3.093E-11	2.074E-11	1.486E-11	1.115E-11	8.675E-12	6.930E-12	5.568E-12
NNE	4.311E-10	2.113E-10	1.325E-10	6.700E-11	4.055E-11	2.719E-11	1.948E-11	1.463E-11	1.132E-11	9.087E-12	7.417E-12
NE	3.253E-10	1.599E-10	1.003E-10	5.072E-11	3.070E-11	2.058E-11	1.475E-11	1.107E-11	8.610E-12	6.378E-12	5.614E-12
ENE	1.931E-10	9.461E-11	5.936E-11	3.001E-11	1.816E-11	1.218E-11	8.725E-12	6.552E-12	5.094E-12	4.069E-12	3.321E-12
E	1.573E-10	5.259E-11	3.300E-11	1.665E-11	1.009E-11	5.758E-12	4.850E-12	3.442E-12	2.831E-12	2.262E-12	1.846E-12
ESE	9.934E-11	4.380E-11	2.748E-11	1.389E-11	8.405E-12	5.638E-12	4.040E-12	3.033E-12	2.353E-12	1.894E-12	1.533E-12
SE	1.119E-10	5.483E-11	3.440E-11	1.739E-11	1.052E-11	7.056E-12	5.056E-12	3.797E-12	2.952E-12	2.358E-12	1.925E-12
SSE	3.917E-10	1.920E-10	1.204E-10	6.088E-11	3.635E-11	2.470E-11	1.770E-11	1.329E-11	1.034E-11	8.256E-12	6.739E-12

RELATIVE DEPOSITION PER UNIT AREA (M²-2) BY DOWNWIND SECTORS

DIRECTION FROM SITE	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	1.044E-09	3.225E-09	1.283E-09	7.013E-10	4.497E-10	1.914E-10	5.937E-11	2.353E-11	1.256E-11	7.777E-12
SSW	1.294E-09	3.999E-09	1.551E-09	8.695E-10	5.526E-10	2.374E-10	7.361E-11	2.917E-11	1.559E-11	9.643E-12
SW	7.245E-09	2.238E-09	5.908E-10	4.868E-10	3.094E-10	1.329E-10	4.121E-11	1.633E-11	8.722E-12	5.394E-12
WSW	3.949E-09	1.204E-09	4.790E-10	2.617E-10	1.564E-10	7.145E-11	2.716E-11	9.782E-12	4.690E-12	2.903E-12
W	2.439E-09	7.536E-10	2.999E-10	1.639E-10	1.042E-10	4.474E-11	1.387E-11	5.499E-12	2.935E-12	1.817E-12
WNW	2.251E-09	5.955E-10	2.768E-10	1.513E-10	9.613E-11	4.129E-11	1.260E-11	5.075E-12	2.710E-12	1.677E-12
NW	3.650E-09	1.124E-09	4.483E-10	2.452E-10	1.559E-10	6.695E-11	2.076E-11	8.229E-12	4.394E-12	2.720E-12
NNW	5.225E-09	1.614E-09	6.424E-10	3.510E-10	2.231E-10	9.593E-11	2.972E-11	1.178E-11	6.290E-12	3.893E-12
N	4.352E-09	2.342E-09	1.151E-09	6.290E-10	3.907E-10	1.717E-10	5.325E-11	2.110E-11	1.127E-11	6.975E-12
NNE	1.223E-09	3.743E-09	1.504E-09	8.247E-10	5.242E-10	2.251E-10	6.962E-11	2.757E-11	1.478E-11	9.146E-12
NE	4.242E-09	2.871E-09	1.142E-09	6.243E-10	3.968E-10	1.704E-10	5.255E-11	2.095E-11	1.119E-11	6.923E-12
ENE	5.497E-09	1.598E-09	6.758E-10	3.693E-10	2.347E-10	1.009E-10	3.127E-11	1.234E-11	6.617E-12	4.096E-12
E	3.035E-09	9.440E-10	3.757E-10	2.053E-10	1.305E-10	5.604E-11	1.738E-11	6.888E-12	3.678E-12	2.277E-12
ESE	2.545E-09	7.863E-10	3.129E-10	1.710E-10	1.08E-10	4.668E-11	1.448E-11	5.737E-12	3.064E-12	1.809E-12
SE	3.155E-09	9.842E-10	3.915E-10	2.140E-10	1.36E-10	5.843E-11	1.812E-11	7.181E-12	3.935E-12	2.409E-12
SSE	1.115E-09	3.446E-09	1.571E-09	7.493E-10	4.762E-10	2.046E-10	6.343E-11	2.514E-11	1.343E-11	8.009E-12

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS) 0.0
DIAMETER (METERS) 0.0
EXIT VELOCITY (METERS) 0.0

RED. WIND HEIGHT (METERS) 10.0
BUILDING HEIGHT (METERS) 59.0
BLOG.MTN.CRS.SEC.AREA (SQ.METERS) 1370.0
HEAT EMISSION RATE (CAL/SEC) 0.0

AT THE RELEASE HEIGHT:
VENT RELEASE MODE WIND SPEED (METERS/SEC)

ELEVATED LESS THAN 0.0
MIXED BETWEEN 0.0 AND 0.0
GROUND LEVEL ABOVE 0.0

AT THE MEASURED WIND HEIGHT (11.0 METERS):
VENT RELEASE MODE WIND SPEED (METERS/SEC)

ELEVATED LESS THAN 0.0
MIXED BETWEEN 0.0 AND 0.0
GROUND LEVEL ABOVE 0.0

WIND SPEED (METERS/SEC)
UNSTABLE/NEUTRAL CONDITIONS

LESS THAN 0.0
BETWEEN 0.0 AND 0.0
ABOVE 0.0

EXIT ONE GROUND LEVEL RELEASE 7/1/80-12/31/80

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	(METERS)	X/Q (SEC/CUR.METER)	X/Q (SEC/CUR.METER)	X/Q (SEC/CUR.METER)	D/Q (PER SQ.METER)
					NO DECAY	2.250 DAY DECAY	8.000 DAY DECAY	
					UNDEPLETED	UNDEPLETED	DEPLETED	
A	SITE BOUNDARY	S	0.29	451.	1.7E-05	1.7E-05	1.6E-05	4.9E-08
A	SITE BOUNDARY	SSW	0.29	467.	1.2E-05	1.2E-05	1.1E-05	5.7E-08
A	SITE BOUNDARY	SW	0.36	579.	3.7E-06	3.7E-06	3.5E-06	2.3E-08
A	SITE BOUNDARY	WSW	0.36	579.	2.9E-06	2.7E-06	2.6E-06	1.2E-08
A	SITE BOUNDARY	W	0.50	805.	9.0E-07	9.0E-07	8.2E-07	4.6E-09
A	SITE BOUNDARY	WNW	0.55	885.	8.9E-07	8.8E-07	8.0E-07	3.6E-09
A	SITE BOUNDARY	NW	1.23	1979.	3.3E-07	3.3E-07	2.9E-07	1.5E-09
A	SITE BOUNDARY	NNW	1.89	3042.	4.7E-07	4.6E-07	3.9E-07	1.0E-09
A	SITE BOUNDARY	N	1.94	3122.	9.7E-07	9.5E-07	8.0E-07	1.8E-09
A	SITE BOUNDARY	NNE	1.26	2029.	1.5E-06	1.5E-06	1.4E-06	4.9E-09
A	SITE BOUNDARY	NE	1.01	1625.	1.3E-06	1.3E-06	1.2E-06	5.4E-09
A	SITE BOUNDARY	ENE	0.85	1304.	1.2E-06	1.2E-06	1.0E-06	4.2E-09
A	SITE BOUNDARY	E	0.61	982.	1.4E-06	1.4E-06	1.3E-06	4.1E-09
A	SITE BOUNDARY	ESE	0.50	805.	1.6E-06	1.5E-06	1.5E-06	4.5E-09
A	SITE BOUNDARY	SE	0.29	467.	9.7E-06	9.7E-06	9.1E-06	1.4E-08
A	SITE BOUNDARY	SSE	0.26	418.	4.5E-05	4.5E-05	4.2E-05	5.8E-08
A	MILK COW	NE	1.30	2092.	9.4E-07	9.3E-07	8.0E-07	3.5E-09
A	MILK COW	E	4.20	6759.	9.2E-08	8.9E-08	7.0E-08	1.5E-10
A	MEAT ANIMAL	S	2.32	3734.	6.5E-07	6.3E-07	5.2E-07	1.4E-09
A	MEAT ANIMAL	SSW	2.08	3347.	5.5E-07	5.5E-07	4.6E-07	2.2E-09
A	MEAT ANIMAL	SW	2.27	3653.	2.2E-07	2.2E-07	1.9E-07	1.0E-09
A	MEAT ANIMAL	WSW	2.69	4329.	1.3E-07	1.3E-07	1.0E-07	4.1E-10
A	MEAT ANIMAL	W	3.97	6389.	4.1E-08	3.9E-08	3.1E-08	1.3E-10
A	MEAT ANIMAL	WNW	4.07	6550.	4.6E-08	4.6E-08	3.6E-08	1.1E-10
A	MEAT ANIMAL	NW	1.60	2575.	2.2E-07	2.2E-07	1.9E-07	9.6E-10
A	MEAT ANIMAL	NNW	2.84	4571.	2.7E-07	2.7E-07	2.2E-07	5.0E-10
A	MEAT ANIMAL	N	2.93	4715.	5.7E-07	5.5E-07	4.5E-07	8.5E-10
A	MEAT ANIMAL	NNE	1.65	2655.	1.1E-06	1.1E-06	9.3E-07	3.1E-09
A	MEAT ANIMAL	NE	1.16	1867.	1.1E-06	1.1E-06	9.5E-07	4.3E-09
A	MEAT ANIMAL	ENE	2.41	3879.	2.8E-07	2.7E-07	2.2E-07	7.1E-10
A	MEAT ANIMAL	E	3.12	5021.	1.4E-07	1.3E-07	1.1E-07	2.5E-10
A	MEAT ANIMAL	ESE	1.99	3203.	2.1E-07	2.1E-07	1.7E-07	4.6E-10
A	RESIDENT	S	0.30	483.	1.6E-05	1.5E-05	1.5E-05	4.4E-08
A	RESIDENT	SSW	0.30	483.	1.1E-05	1.1E-05	1.0E-05	5.4E-08
A	RESIDENT	SW	0.40	644.	3.1E-06	3.1E-06	2.9E-06	1.9E-08
A	RESIDENT	WSW	0.40	644.	2.3E-06	2.3E-06	2.1E-06	1.0E-08
A	RESIDENT	W	0.60	966.	6.8E-07	6.8E-07	6.1E-07	3.4E-09
A	RESIDENT	WNW	0.70	1127.	6.0E-07	5.9E-07	5.3E-07	2.4E-09
A	RESIDENT	NW	1.30	2092.	3.1E-07	3.0E-07	2.6E-07	1.4E-09
A	RESIDENT	NNW	2.90	4657.	2.7E-07	2.6E-07	2.1E-07	4.9E-10
A	RESIDENT	N	2.90	4667.	5.7E-07	5.6E-07	4.5E-07	9.7E-10
A	RESIDENT	NNE	1.30	2092.	1.5E-06	1.5E-06	1.3E-06	4.6E-09
A	RESIDENT	NE	1.20	1931.	1.1E-06	1.0E-06	9.1E-07	4.0E-09
A	RESIDENT	ENE	0.90	1448.	1.1E-06	1.1E-06	9.8E-07	3.9E-09
A	RESIDENT	E	0.80	1287.	9.2E-07	9.1E-07	9.1E-07	2.6E-09
A	RESIDENT	ESE	0.50	966.	1.2E-06	1.2E-06	1.1E-06	3.5E-09
A	RESIDENT	SE	0.30	483.	9.1E-06	9.1E-06	8.6E-06	1.3E-08
A	RESIDENT	SSE	0.30	483.	3.5E-05	3.5E-05	3.2E-05	4.7E-08
A	GARDEN	S	0.40	644.	9.4E-06	9.4E-06	8.7E-06	2.8E-08
A	GARDEN	SSW	0.50	805.	4.8E-06	4.8E-06	4.4E-06	2.4E-08
A	GARDEN	SW	0.50	805.	2.2E-06	2.2E-06	2.0E-06	1.4E-08
A	GARDEN	WSW	0.60	966.	1.2E-06	1.2E-06	1.1E-06	5.4E-09
A	GARDEN	W	0.60	966.	4.8E-07	4.8E-07	4.1E-07	3.4E-09

A	GARDEN	NW	1.30	2092.	3.1E-07	3.0E-07	2.6E-07	1.4E-09
A	GARDEN	NNW	3.00	4628.	2.5E-07	2.5E-07	2.0E-07	4.6E-10
A	GARDEN	N	2.90	4657.	5.7E-07	5.6E-07	4.5E-07	9.7E-10
A	GARDEN	NNE	1.40	2253.	1.4E-06	1.4E-06	1.2E-06	4.1E-09
A	GARDEN	NE	1.30	2092.	9.4E-07	9.3E-07	8.0E-07	3.5E-09
A	GARDEN	ENE	2.20	3541.	3.1E-07	3.1E-07	2.6E-07	8.3E-10
A	GARDEN	E	2.80	4506.	1.6E-07	1.6E-07	1.3E-07	3.0E-10
A	GARDEN	ESE	0.60	955.	1.2E-05	1.2E-05	1.1E-06	3.5E-09
A	GARDEN	SE	0.30	483.	9.1E-06	9.1E-06	8.6E-06	1.3E-08
A	GARDEN	SSE	0.30	483.	3.5E-05	3.5E-05	3.2E-05	4.7E-06

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	0.0	REF. WIND HEIGHT (METERS)	10.0
DIAMETER (METERS)	0.0	BUILDING HEIGHT (METERS)	59.0
EXIT VELOCITY (METERS)	0.0	BLDG. MIN. CRS. SEC. AREA (SQ. METERS)	1370.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 0.0
MIXED	BETWEEN 0.0 AND 0.0
GROUND LEVEL	ABOVE 0.0

AT THE MEASURED WIND HEIGHT (11.0 METERS):

VENT RELEASE MODE	WIND SPEED (METERS/SEC)	WIND SPEED (METERS/SEC)
	STABLE CONDITIONS	UNSTABLE/NEUTRAL CONDITIONS
ELEVATED	LESS THAN 0.0	LESS THAN 0.0
MIXED	BETWEEN 0.0 AND 0.0	BETWEEN 0.0 AND 0.0
GROUND LEVEL	ABOVE 0.0	ABOVE 0.0

METEOROLOGICAL DATA FOR
DIFFUSION ANALYSIS
JULY 1 - DECEMBER 31, 1980
H. B. ROBINSON STEAM ELECTRIC PLANT

The wind frequency tables present the number and frequency of hourly combinations of wind direction, wind speed, and stability for the upper (60 meter) and lower (10 meter) sensor elevations.

Pertinent information available from the tables is as follows:

1. Stability

Percent occurrence Pasquill categories:

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
13.3	5.3	5.6	32.2	22.8	11.1	9.8

2. Wind Speed

	<u>10 Meter</u>	<u>60 Meter</u>
Average Speed (mph)	5.5	9.4
Percent Calm	0.9	0.1
Percent less than 3.5 mph	29.1	6.0

3. Wind Direction

	<u>10 Meter</u>	<u>60 Meter</u>
Prevailing Direction	NNE	N
Percent Occurrence	12.4	11.8

4. Data Recovery

	<u>10 Meter</u>	<u>60 Meter</u>
Percent Good Hours	98.2	99.1

CP&L ENVIRONMENTAL MONITORING SYSTEM

10:10 MONDAY, JANUARY 25, 1981 5

PROGRAM IM001402 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

SEASON=SEMIYR

SUMMARY OVER ALL STAB

UPWIND SPD

UPWIND DEG

AVERAGE

UPWIND SPD

	CALC	.75-2.5	2.5-7.5	7.5-12.5	12.5-17.5	17.5-25	25-25	TOTAL	
N	0.1/ 0.00	15/ 0.34	100/ 2.28	215/ 4.93	136/ 3.11	38/ 0.97	12/ 0.27	517.1/11.81	11.50402
NNE	0.1/ 0.00	15/ 0.34	100/ 2.28	195/ 4.48	165/ 3.77	17/ 0.39	4/ 0.09	497.1/11.35	10.69505
NE	0.1/ 0.00	19/ 0.43	98/ 2.24	129/ 2.92	50/ 1.14	3/ 0.07	/	299.1/ 6.81	8.95081
ENE	0.2/ 0.00	22/ 0.50	85/ 1.94	64/ 1.46	18/ 0.41	/	1/ 0.02	190.2/ 4.34	7.589784
E	0.1/ 0.00	18/ 0.41	67/ 1.53	51/ 1.16	3/ 0.07	/	/	139.1/ 3.18	6.74666
ESE	0.2/ 0.01	30/ 0.59	59/ 1.58	34/ 0.80	3/ 0.07	/	/	137.2/ 3.13	5.869915
SE	0.1/ 0.00	16/ 0.37	78/ 1.78	74/ 1.80	11/ 0.25	1/ 0.02	/	185.1/ 4.23	7.469607
SSE	0.2/ 0.00	22/ 0.50	75/ 1.71	93/ 2.12	19/ 0.43	/	/	209.2/ 4.78	7.836532
S	0.1/ 0.00	8/ 0.19	91/ 2.08	123/ 4.18	54/ 1.23	/	/	336.1/ 7.68	9.280845
SSW	0.1/ 0.00	12/ 0.27	105/ 2.40	243/ 6.69	91/ 2.08	2/ 0.05	/	503.1/11.49	9.699573
SW	0.1/ 0.00	11/ 0.25	114/ 2.60	223/ 5.09	79/ 1.80	4/ 0.09	/	431.1/ 9.85	9.569603
WSW	0.1/ 0.00	18/ 0.41	99/ 2.26	130/ 2.97	56/ 1.28	13/ 0.30	/	316.1/ 7.22	9.35597
W	0.1/ 0.00	11/ 0.25	63/ 1.44	72/ 1.64	8/ 0.18	3/ 0.07	/	157.1/ 3.59	7.94272
WNW	0.1/ 0.00	15/ 0.37	45/ 1.03	39/ 0.97	11/ 0.25	2/ 0.05	/	112.1/ 2.56	7.481585
NW	0.1/ 0.00	17/ 0.39	38/ 0.87	50/ 1.19	14/ 0.32	4/ 0.09	/	125.1/ 2.85	9.228554
NNW	0.1/ 0.00	10/ 0.23	51/ 1.15	22/ 2.01	42/ 1.10	22/ 0.50	5/ 0.11	224.1/ 5.12	11.43573
TOTAL	2/ 0.05	260/ 5.94	1278/29.19	1941/44.34	766/17.50	109/ 2.49	22/ 0.50	4378/ 100	9.359059

NUMBER OF BAD RECORDS: 38

CPCL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MODREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:10 MONDAY, JANUARY 26, 1981 6

SITE=ROBN

YEAR=80

SEASON=SEMIYR

STAB=A

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UPWIND DEG	UPWIND SPD							TOTAL	AVERAGE UPWIND SPD
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-17.5	17.5-25	>= 25		
N	/	/	9/ 0.21	36/ 0.82	13/ 0.30	2/ 0.05	/	60.0/ 1.37	11.01189
NNE	/	/	8/ 0.19	29/ 0.65	7/ 0.16	1/ 0.02	/	45.0/ 1.03	9.947192
NE	/	2/ 0.05	18/ 0.41	19/ 0.43	8/ 0.18	/	/	47.0/ 1.07	9.085236
ENE	/	1/ 0.02	18/ 0.41	14/ 0.32	5/ 0.11	/	/	38.0/ 0.87	8.120971
E	/	2/ 0.05	8/ 0.18	7/ 0.15	1/ 0.02	/	/	18.0/ 0.41	7.491706
ESE	/	2/ 0.05	17/ 0.39	5/ 0.11	/	/	/	24.0/ 0.55	5.439523
SE	/	2/ 0.05	31/ 0.71	9/ 0.21	1/ 0.02	/	/	43.0/ 0.98	6.347745
SSE	/	/	9/ 0.21	14/ 0.32	2/ 0.05	/	/	25.0/ 0.57	8.160077
S	/	/	8/ 0.19	16/ 0.37	9/ 0.21	/	/	33.0/ 0.75	10.41985
SSW	/	/	14/ 0.32	30/ 0.69	16/ 0.37	/	/	60.0/ 1.37	9.981932
SW	/	/	27/ 0.62	39/ 0.89	29/ 0.65	1/ 0.02	/	95.0/ 2.19	10.12931
WSW	/	/	9/ 0.21	28/ 0.64	7/ 0.16	1/ 0.02	/	45.0/ 1.03	9.663718
W	/	/	4/ 0.09	13/ 0.23	/	/	/	14.0/ 0.32	8.922316
WNW	/	1/ 0.02	4/ 0.09	5/ 0.11	1/ 0.02	/	/	11.0/ 0.25	6.319308
NW	/	/	2/ 0.05	1/ 0.02	3/ 0.07	/	/	5.0/ 0.14	10.97493
NNW	/	/	4/ 0.09	1/ 0.02	3/ 0.07	2/ 0.05	/	10.0/ 0.23	12.31949
TOTAL	0/ 0.00	10/ 0.23	190/ 4.34	263/ 6.01	105/ 2.40	7/ 0.16	0/ 0.00	575/13.1	9.290091

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM 1M001402 (MODREV) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:10 MONDAY, JANUARY 26, 1981 7

SITE=ROBN

YEAR=80

SEASON=SEMIYR

STAB=8

UPWIND DEG

UPWIND SPD

	CALM	7.5-3.5	3.5-1.5	1.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWIND SPD
N	/	/	9/ 0.21	17/ 0.39	8/ 0.18	1/ 0.02	/	35.0/ 0.80	10.54177
NNE	/	/	8/ 0.18	14/ 0.32	3/ 0.07	/	/	25.0/ 0.57	8.838416
NE	/	/	11/ 0.25	9/ 0.19	1/ 0.02	/	/	20.0/ 0.46	7.905567
ENE	/	/	5/ 0.11	1/ 0.02	4/ 0.09	/	1/ 0.02	11.0/ 0.25	10.56134
E	/	2/ 0.05	10/ 0.23	2/ 0.05	/	/	/	14.0/ 0.33	5.340764
ESE	/	2/ 0.05	5/ 0.11	3/ 0.07	1/ 0.02	/	/	11.0/ 0.25	7.252109
SE	/	/	4/ 0.09	3/ 0.07	/	/	/	7.0/ 0.16	6.631885
SSE	/	1/ 0.02	3/ 0.07	1/ 0.02	1/ 0.02	/	/	6.0/ 0.14	7.4037
S	/	/	1/ 0.02	2/ 0.05	1/ 0.02	/	/	4.0/ 0.09	10.6053
SSW	/	/	4/ 0.09	7/ 0.16	11/ 0.25	/	/	22.0/ 0.50	11.60504
SW	/	/	8/ 0.18	10/ 0.23	8/ 0.18	/	/	26.0/ 0.59	9.942147
WSW	/	2/ 0.05	9/ 0.21	11/ 0.25	1/ 0.02	6/ 0.14	/	29.0/ 0.66	10.69442
W	/	/	2/ 0.05	2/ 0.05	/	/	/	4.0/ 0.09	7.185925
WNW	/	/	3/ 0.07	3/ 0.07	1/ 0.02	/	/	7.0/ 0.16	9.55001
NW	/	/	/	3/ 0.07	/	/	/	3.0/ 0.07	10.39408
NNW	/	/	2/ 0.05	2/ 0.05	1/ 0.02	1/ 0.02	/	6.0/ 0.14	11.20839
TOTAL	0/ 0.00	7/ 0.16	64/ 1.92	84/ 2.03	41/ 0.94	8/ 0.18	1/ 0.02	230/ 5.3	9.426062

NUMBER OF BAD RECORDS: 0

CPAL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IMD01402 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:10 MONDAY, JANUARY 26, 1981 8

SITE=ROBN

YEAR=80

SEASON=SEMIYR

STAB=C

UPWIND DEG

UPWIND SPD

CALM

.75-3.5

3.5-7.5

7.5-12.5

12.5-18.5

18.5-25

>= 25

TOTAL

AVERAGE

UPWIND SPD

N	/	/	8/ 0.13	13/ 0.30	4/ 0.09	/	/	25.0/ 0.57	9.377575
NNE	/	1/ 0.02	9/ 0.21	13/ 0.30	5/ 0.11	1/ 0.02	/	29.0/ 0.56	9.162432
NE	/	1/ 0.02	5/ 0.11	10/ 0.23	4/ 0.09	/	/	20.0/ 0.46	9.313821
ENE	/	/	5/ 0.11	5/ 0.11	2/ 0.05	/	/	12.0/ 0.27	8.691843
E	/	/	2/ 0.05	3/ 0.07	1/ 0.02	/	/	6.0/ 0.14	9.36579
ESE	/	2/ 0.05	4/ 0.09	1/ 0.02	6/ 0.07	/	/	7.0/ 0.16	5.221657
SE	/	2/ 0.05	7/ 0.16	3/ 0.07	2/ 0.05	/	/	14.0/ 0.32	5.914119
SSE	/	1/ 0.02	4/ 0.09	1/ 0.02	2/ 0.05	/	/	6.0/ 0.18	7.843503
S	/	/	1/ 0.02	3/ 0.07	3/ 0.07	/	/	7.0/ 0.16	10.98644
SSW	/	1/ 0.02	2/ 0.05	9/ 0.21	4/ 0.09	/	/	16.0/ 0.37	9.890359
SW	/	2/ 0.05	13/ 0.30	20/ 0.46	5/ 0.11	3/ 0.07	/	43.0/ 0.98	9.640605
WSW	/	/	10/ 0.23	5/ 0.11	/	1/ 0.02	/	16.0/ 0.37	7.853304
W	/	/	3/ 0.07	5/ 0.11	/	2/ 0.05	/	10.0/ 0.23	10.32349
WNW	/	/	6/ 0.14	1/ 0.02	1/ 0.02	/	/	8.0/ 0.18	7.097296
NW	/	/	2/ 0.05	6/ 0.14	/	1/ 0.02	/	9.0/ 0.21	10.48302
NNW	/	/	3/ 0.07	5/ 0.11	2/ 0.05	2/ 0.05	/	12.0/ 0.27	11.71974
TOTAL	0/ 0.00	10/ 0.23	84/ 1.92	103/ 2.35	35/ 0.80	10/ 0.23	0/ 0.00	242/ 5.5	9.141023

NUMBER OF BAD RECORDS: 0

CPCL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IMD01402 (MDFRE0) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWINDS AND UPWINDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:10 MONDAY, JANUARY 26, 1991 9

SITE=ROBN

YEAR=90

SEASON=SEMIYR

STAR=0

UPWINDS

UPWINDSPD

	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWINDSPD
N	/	7/ 0.16	26/ 0.59	71/ 1.60	81/ 1.85	32/ 0.73	12/ 0.27	229.0/ 5.21	13.57818
NNE	/	7/ 0.15	26/ 0.59	93/ 2.24	145/ 3.31	15/ 0.34	4/ 0.09	295.0/ 6.74	12.61024
NE	/	3/ 0.07	30/ 0.69	69/ 1.58	37/ 0.85	3/ 0.07	/	142.0/ 3.24	10.30797
ENE	/	6/ 0.14	26/ 0.59	37/ 0.85	6/ 0.14	/	/	75.0/ 1.71	8.478681
E	/	5/ 0.11	19/ 0.43	22/ 0.50	1/ 0.02	/	/	47.0/ 1.07	7.03614
ESE	/	6/ 0.14	17/ 0.39	10/ 0.23	1/ 0.02	/	/	34.0/ 0.79	5.257539
SE	/	2/ 0.05	19/ 0.43	19/ 0.43	2/ 0.05	1/ 0.02	/	43.0/ 0.98	7.90201
SSE	/	8/ 0.18	15/ 0.34	20/ 0.46	10/ 0.23	/	/	53.0/ 1.21	8.458629
S	/	1/ 0.02	21/ 0.49	53/ 1.21	27/ 0.62	/	/	102.0/ 2.33	10.32967
SSW	/	4/ 0.09	16/ 0.37	45/ 1.05	19/ 0.43	2/ 0.05	/	87.0/ 1.99	10.14357
SW	/	2/ 0.05	23/ 0.53	31/ 0.71	11/ 0.25	/	/	67.0/ 1.53	9.052533
WSW	/	2/ 0.05	23/ 0.53	22/ 0.50	17/ 0.39	5/ 0.11	/	69.0/ 1.58	10.10932
W	/	4/ 0.09	20/ 0.59	18/ 0.41	1/ 0.02	1/ 0.02	/	50.0/ 1.14	7.044409
WNW	/	2/ 0.05	17/ 0.39	11/ 0.25	1/ 0.02	1/ 0.02	/	32.0/ 0.73	7.306255
NW	/	4/ 0.09	9/ 0.21	12/ 0.27	2/ 0.05	1/ 0.02	/	28.0/ 0.64	7.977002
NNW	/	2/ 0.05	16/ 0.37	21/ 0.48	13/ 0.30	14/ 0.32	5/ 0.11	71.0/ 1.62	13.30782
TOTAL	0/ 0.00	65/ 1.48	329/ 7.51	559/ 12.77	374/ 8.54	75/ 1.71	21/ 0.48	1423/ 32.5	10.7268

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MORKEP) - JAN 1991
 JOINT OCCURRENCE FREQUENCIES FOR UPWNO DEG AND UPWNO SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:10 MONDAY, JANUARY 26, 1981 10

SITE=RURN YEAR=80 SEASON=SEMIYR STAB=E

UPWNO DEG	UPWNO SPD							TOTAL	AVERAGE UPWNO SPD
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25		
N	/	2/ 0.05	24/ 0.55	49/ 1.12	17/ 0.39	2/ 0.05	/	94.0/ 2.15	9.692432
NNE	/	3/ 0.07	24/ 0.55	16/ 0.37	4/ 0.09	/	/	47.0/ 1.07	7.573288
NE	/	3/ 0.07	19/ 0.43	10/ 0.23	/	/	/	32.0/ 0.73	6.149427
ENE	/	7/ 0.16	10/ 0.23	5/ 0.14	1/ 0.02	/	/	24.0/ 0.55	5.677837
E	/	4/ 0.09	17/ 0.39	13/ 0.30	/	/	/	34.0/ 0.78	6.507223
ESE	/	5/ 0.11	11/ 0.25	11/ 0.25	1/ 0.02	/	/	28.0/ 0.64	6.522902
SE	/	4/ 0.09	8/ 0.18	24/ 0.55	5/ 0.14	/	/	42.0/ 0.96	8.606691
SSE	/	4/ 0.09	22/ 0.50	44/ 1.01	4/ 0.09	/	/	74.0/ 1.69	8.352287
S	/	2/ 0.05	39/ 0.89	70/ 1.60	9/ 0.21	/	/	120.0/ 2.74	8.571793
SSW	/	2/ 0.05	35/ 0.80	109/ 2.49	23/ 0.53	/	/	169.0/ 3.85	9.522312
SW	/	4/ 0.09	18/ 0.41	67/ 1.53	15/ 0.34	/	/	104.0/ 2.39	9.714576
WSW	/	5/ 0.11	26/ 0.59	26/ 0.59	16/ 0.37	/	/	73.0/ 1.67	8.948078
W	/	2/ 0.05	15/ 0.34	16/ 0.37	4/ 0.09	/	/	37.0/ 0.85	7.939553
WNW	/	2/ 0.05	8/ 0.18	7/ 0.16	5/ 0.11	1/ 0.02	/	23.0/ 0.53	8.639099
NW	/	3/ 0.07	11/ 0.25	11/ 0.25	6/ 0.14	2/ 0.05	/	33.0/ 0.75	9.102022
NNW	/	2/ 0.05	15/ 0.34	29/ 0.66	19/ 0.43	3/ 0.07	/	68.0/ 1.55	11.00084
TOTAL	0/ 0.00	54/ 1.23	302/ 6.90	508/ 11.60	130/ 2.97	8/ 0.19	0/ 0.00	1002/ 22.9	8.812332

NUMBER OF BAD RECORDS: 0

CPCL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001702 (MODREQ) - JAN 1991
 JOINT OCCURRENCE FREQUENCIES FOR UPWNO DEG AND UPWNO SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:10 MONDAY, JANUARY 26, 1981 11

SITE=ROBN YEAR=80 SEASON=SEMIYR STAB=F

UPWNO SPD

UPWNO DEG	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	≥ 25	TOTAL	AVERAGE UPWNO SPD
N	0.2/ 0.00	4/ 0.09	11/ 0.25	25/ 0.57	10/ 0.23	1/ 0.02	/	51.2/ 1.17	9.52657
NNE	0.1/ 0.00	2/ 0.05	15/ 0.34	10/ 0.23	/	/	/	27.1/ 0.62	6.693997
NE	0.2/ 0.01	6/ 0.14	3/ 0.07	4/ 0.09	/	/	/	13.2/ 0.30	4.715094
ENE	0.1/ 0.00	3/ 0.07	7/ 0.16	1/ 0.02	/	/	/	11.1/ 0.25	4.942409
E	0.2/ 0.00	4/ 0.09	6/ 0.14	3/ 0.07	/	/	/	13.2/ 0.30	5.747176
ESE	0.4/ 0.01	10/ 0.23	8/ 0.18	3/ 0.07	/	/	/	21.4/ 0.49	4.591728
SE	0.1/ 0.00	2/ 0.05	7/ 0.16	20/ 0.46	/	/	/	29.1/ 0.65	8.201593
SSE	0.1/ 0.00	3/ 0.07	14/ 0.32	12/ 0.27	/	/	/	29.1/ 0.67	6.740482
S	0.1/ 0.00	3/ 0.07	13/ 0.30	22/ 0.50	4/ 0.09	/	/	42.1/ 0.95	9.341064
SSW	0.0/ 0.00	1/ 0.02	13/ 0.30	51/ 1.16	13/ 0.30	/	/	78.0/ 1.78	9.873096
SW	0.0/ 0.00	1/ 0.02	6/ 0.14	32/ 0.73	9/ 0.21	/	/	48.0/ 1.10	10.07239
WSW	0.1/ 0.00	2/ 0.05	8/ 0.18	14/ 0.32	8/ 0.18	/	/	32.1/ 0.73	9.564483
W	/	/	2/ 0.05	10/ 0.23	3/ 0.07	/	/	15.0/ 0.34	10.67978
WNW	0.1/ 0.00	2/ 0.05	3/ 0.07	6/ 0.14	2/ 0.05	/	/	13.1/ 0.30	7.888165
NW	0.2/ 0.00	5/ 0.11	9/ 0.21	11/ 0.25	3/ 0.07	/	/	28.2/ 0.64	7.31039
NNW	0.1/ 0.00	2/ 0.05	7/ 0.16	13/ 0.30	8/ 0.18	/	/	30.1/ 0.69	10.2964
TOTAL	2/ 0.05	50/ 1.14	132/ 3.02	237/ 5.41	60/ 1.37	1/ 0.02	0/ 0.00	482/11.0	8.477922

NUMBER OF BAD RECORDS: 0

CPAL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MODREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR UPWIND DEG AND UPWIND SPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:10 MONDAY, JANUARY 26, 1981 12

SITE=ROBN YEAR=80 SEASON=SEMIYR STAB=G

UPWIND DEG	UPWIND SPD							TOTAL	AVERAGE UPWIND SPD
	CALM	1.5-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25		
N	/	2/ 0.05	13/ 0.30	6/ 0.14	3/ 0.07	/	/	24.0/ 0.55	6.977097
NNE	/	2/ 0.05	10/ 0.23	16/ 0.37	1/ 0.02	/	/	29.0/ 0.66	7.750424
NE	/	4/ 0.09	12/ 0.27	9/ 0.18	/	/	/	24.0/ 0.55	6.095407
ENE	/	5/ 0.11	14/ 0.32	/	/	/	/	19.0/ 0.43	4.664055
E	/	1/ 0.02	5/ 0.11	1/ 0.02	/	/	/	7.0/ 0.15	5.919525
ESE	/	3/ 0.07	7/ 0.16	2/ 0.05	/	/	/	12.0/ 0.27	5.419374
SE	/	4/ 0.09	2/ 0.05	1/ 0.02	/	/	/	7.0/ 0.15	3.987707
SSE	/	5/ 0.11	8/ 0.18	1/ 0.02	/	/	/	14.0/ 0.32	4.640414
S	/	2/ 0.05	8/ 0.18	17/ 0.39	1/ 0.02	/	/	28.0/ 0.64	7.953975
SSW	/	4/ 0.09	21/ 0.48	41/ 0.94	5/ 0.11	/	/	71.0/ 1.52	8.52844
SW	/	2/ 0.05	19/ 0.43	24/ 0.55	2/ 0.05	/	/	47.0/ 1.07	8.078505
WSW	/	7/ 0.16	14/ 0.32	24/ 0.55	7/ 0.16	/	/	52.0/ 1.19	8.246749
W	/	5/ 0.11	11/ 0.25	11/ 0.25	/	/	/	27.0/ 0.62	6.84169
WNW	/	9/ 0.21	4/ 0.09	5/ 0.11	/	/	/	18.0/ 0.41	4.872805
NW	/	5/ 0.11	5/ 0.11	8/ 0.18	/	/	/	18.0/ 0.41	6.007631
NNW	/	4/ 0.09	4/ 0.09	17/ 0.39	2/ 0.05	/	/	27.0/ 0.62	8.475223
TOTAL	0/ 0.00	64/ 1.46	157/ 3.59	182/ 4.15	21/ 0.48	0/ 0.00	0/ 0.00	424/ 9.7	7.244068

NUMBER OF BAD RECORDS: 0

CPEL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM INDO1402 (MODR50) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:15 MONDAY, JANUARY 26, 1981 6

SITE=RUBN

YEAR=80

SEASON=SEMIYR

SUMMARY OVER ALL STAG

LOWNDEG	LOWNDSPD							TOTAL	AVERAGE LOWNDSPD
	231.4	1.75-2.5	3.5-7.5	7.5-12.5	12.5-14.5	15.5-25	>= 25		
N	3.4/ 0.08	104/ 2.40	206/ 4.75	110/ 2.31	19/ 0.44	/	/	432.4/ 2.97	5.905587
NNE	2.2/ 0.05	67/ 1.54	208/ 4.79	229/ 5.26	29/ 0.67	3/ 0.07	/	537.2/12.38	7.363481
NE	1.1/ 0.03	34/ 0.78	148/ 3.41	108/ 2.49	10/ 0.23	/	/	301.1/ 6.94	6.797898
ENE	1.1/ 0.02	31/ 0.71	92/ 2.12	37/ 0.85	1/ 0.02	/	/	162.0/ 3.73	5.64634
E	0.9/ 0.02	24/ 0.55	67/ 1.54	10/ 0.23	/	/	/	101.8/ 2.35	4.792095
ESE	1.0/ 0.02	30/ 0.69	60/ 1.38	3/ 0.07	/	/	/	94.0/ 2.17	4.333631
SE	1.1/ 0.03	35/ 0.81	102/ 2.35	13/ 0.30	1/ 0.02	/	/	152.1/ 3.51	4.925041
SSE	2.3/ 0.05	69/ 1.59	115/ 2.65	31/ 0.71	/	/	/	217.3/ 5.01	4.856364
S	4.8/ 0.11	145/ 3.34	182/ 4.20	57/ 1.31	/	/	/	388.8/ 8.96	4.643808
SSW	4.1/ 0.10	125/ 2.90	276/ 6.36	102/ 2.35	3/ 0.07	/	/	511.1/11.74	5.317451
SW	2.8/ 0.06	96/ 1.98	185/ 4.26	107/ 2.47	6/ 0.14	/	/	386.8/ 8.92	5.913257
WSW	2.2/ 0.05	58/ 1.57	100/ 2.31	52/ 1.22	6/ 0.14	/	/	229.2/ 5.28	5.609197
W	1.7/ 0.04	52/ 1.20	61/ 1.41	11/ 0.25	2/ 0.05	/	/	127.7/ 2.94	5.384467
WNW	1.5/ 0.04	43/ 1.11	48/ 1.11	9/ 0.21	/	/	/	106.6/ 2.46	4.098431
NW	2.4/ 0.06	73/ 1.64	47/ 1.04	9/ 0.21	/	/	/	131.4/ 3.03	3.693942
NNW	7.5/ 0.17	229/ 5.28	182/ 4.20	22/ 0.74	8/ 0.18	/	/	458.5/15.57	4.166784
TOTAL	40/ 0.92	1221/28.15	2079/47.93	910/20.98	85/ 1.96	3/ 0.07	0/ 0.00	4338/ 100	5.454435

NUMBER OF BAD RECORDS: 78

CPEL ENVIRONMENTAL MONITORING SYSTEM

10:15 MONDAY, JANUARY 26, 1981 7

PROGRAM IMPC1#02 (MODER60) - JAN 1981
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

SEASON=SEMIYR

STAR=A

LOWNDDEG

LOWNDSPD

	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	≥ 25	TOTAL	AVERAGE LOWNDSPD
N	/	/	19/ 0.44	34/ 0.78	3/ 0.07	/	/	56.0/ 1.29	6.41611
NNE	/	/	27/ 0.62	19/ 0.44	1/ 0.02	/	/	47.0/ 1.08	7.522553
NE	/	2/ 0.05	26/ 0.60	22/ 0.51	1/ 0.02	/	/	51.0/ 1.18	7.357598
ENE	/	/	20/ 0.46	15/ 0.37	/	/	/	36.0/ 0.43	6.9369
E	/	1/ 0.02	18/ 0.41	5/ 0.14	/	/	/	25.0/ 0.58	5.865598
ESE	/	2/ 0.05	19/ 0.44	1/ 0.02	/	/	/	22.0/ 0.51	4.827412
SE	/	2/ 0.05	44/ 1.01	6/ 0.14	/	/	/	52.0/ 1.20	5.621079
SSE	/	2/ 0.05	12/ 0.28	10/ 0.23	/	/	/	24.0/ 0.55	6.970844
S	/	/	12/ 0.28	19/ 0.44	/	/	/	31.0/ 0.71	8.081458
SSW	/	/	26/ 0.60	40/ 0.92	2/ 0.05	/	/	69.0/ 1.57	8.27693
SW	/	1/ 0.02	43/ 0.99	50/ 1.15	/	/	/	94.0/ 2.17	7.958764
WSW	/	/	21/ 0.48	16/ 0.37	1/ 0.02	/	/	38.0/ 0.88	7.659529
W	/	/	7/ 0.16	7/ 0.16	/	/	/	14.0/ 0.32	7.121416
WNW	/	/	4/ 0.09	3/ 0.07	/	/	/	7.0/ 0.16	7.053525
NW	/	1/ 0.02	5/ 0.12	1/ 0.02	/	/	/	7.0/ 0.16	6.379378
NNW	/	/	/	3/ 0.07	/	/	/	3.0/ 0.07	10.64421
TOTAL	0/ 0.00	11/ 0.25	303/ 6.98	253/ 5.83	8/ 0.18	0/ 0.00	0/ 0.00	575/13.3	7.374729

NUMBER OF BAD RECORDS: 0

CP&L ENVIRONMENTAL MONITORING SYSTEM

10:15 MONDAY, JANUARY 26, 1981 8

PROGRAM INDD1702 (MODIFIED) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

SEASON=SEMIYR

STAR=B

LOWNDSPD

LOWNDDEG

	CALM	.75-2.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	/	/	19/ 0.44	14/ 0.32	1/ 0.02	/	/	34.0/ 0.78	7.338471
NNE	/	1/ 0.02	15/ 0.35	10/ 0.23	/	/	/	26.0/ 0.60	7.142672
NE	/	/	18/ 0.41	6/ 0.14	/	/	/	24.0/ 0.55	6.660967
ENE	/	/	7/ 0.15	5/ 0.12	1/ 0.02	/	/	13.0/ 0.30	7.80903
E	/	/	8/ 0.18	/	/	/	/	8.0/ 0.18	5.15049
ESE	/	5/ 0.12	10/ 0.23	/	/	/	/	15.0/ 0.35	4.79573
SE	/	1/ 0.02	7/ 0.16	1/ 0.02	/	/	/	9.0/ 0.21	5.914066
SSE	/	1/ 0.02	3/ 0.07	1/ 0.02	/	/	/	5.0/ 0.12	5.732865
S	/	/	1/ 0.02	2/ 0.05	/	/	/	3.0/ 0.07	9.315766
SSW	/	/	6/ 0.14	12/ 0.28	/	/	/	18.0/ 0.41	8.423554
SW	/	/	13/ 0.30	14/ 0.44	1/ 0.02	/	/	33.0/ 0.76	7.993398
WSW	/	3/ 0.07	9/ 0.21	8/ 0.18	5/ 0.12	/	/	25.0/ 0.53	8.067364
W	/	1/ 0.02	4/ 0.09	/	/	/	/	5.0/ 0.12	5.686174
WNW	/	/	5/ 0.12	2/ 0.05	/	/	/	7.0/ 0.15	5.812928
NW	/	/	/	2/ 0.05	/	/	/	2.0/ 0.05	7.945537
NNW	/	/	2/ 0.05	1/ 0.02	/	/	/	3.0/ 0.07	7.4704
TOTAL	0/ 0.00	12/ 0.28	127/ 2.93	83/ 1.91	9/ 0.18	0/ 0.00	0/ 0.00	230/ 5.3	7.17866

NUMBER OF BAD RECORDS: 0

CPCL ENVIRONMENTAL MONITORING SYSTEM

10:15 MONDAY, JANUARY 26, 1981 9

PROGRAM 10001402 (MDFREQ) - JAN 1981
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=RCIBN

YE=4=87

SEASON=SEMIYR

STAB=C

LOWNDDEG	LOWNDSPD							TOTAL	AVERAGE LOWNDSPD
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25		
N	/	1/ 0.02	20/ 0.46	8/ 0.18	1/ 0.02	/	/	30.0/ 0.09	6.821001
NNE	/	/	16/ 0.37	10/ 0.23	1/ 0.02	/	/	27.0/ 0.52	7.370751
NE	/	/	14/ 0.32	8/ 0.18	/	/	/	22.0/ 0.51	6.767776
ENE	/	1/ 0.02	10/ 0.23	2/ 0.05	/	/	/	13.0/ 0.30	6.318542
E	/	2/ 0.05	7/ 0.16	1/ 0.02	/	/	/	10.0/ 0.23	5.5361
ESE	/	1/ 0.02	2/ 0.05	/	/	/	/	3.0/ 0.07	4.769049
SE	/	3/ 0.07	13/ 0.30	/	1/ 0.02	/	/	17.0/ 0.39	5.09175
SSE	/	/	2/ 0.05	4/ 0.09	/	/	/	6.0/ 0.14	8.048466
S	/	1/ 0.02	3/ 0.07	4/ 0.09	/	/	/	8.0/ 0.18	7.23695
SSW	/	1/ 0.02	8/ 0.18	7/ 0.16	/	/	/	16.0/ 0.37	7.369307
SW	/	2/ 0.05	23/ 0.53	14/ 0.32	3/ 0.07	/	/	42.0/ 0.97	7.221995
WSW	/	1/ 0.02	10/ 0.23	4/ 0.09	/	/	/	15.0/ 0.35	6.320936
W	/	1/ 0.02	5/ 0.12	1/ 0.02	2/ 0.05	/	/	9.0/ 0.21	7.866894
WNW	/	1/ 0.02	7/ 0.16	1/ 0.02	/	/	/	9.0/ 0.21	5.647266
NW	/	/	4/ 0.09	2/ 0.05	/	/	/	6.0/ 0.14	7.342557
NNW	/	/	5/ 0.12	4/ 0.09	/	/	/	9.0/ 0.21	7.8706
TOTAL	0/ 0.00	15/ 0.35	149/ 3.43	70/ 1.61	8/ 0.18	0/ 0.00	0/ 0.00	242/ 5.6	6.816744

NUMBER OF RAD RECORDS: 0

CPEL ENVIRONMENTAL MONITORING SYSTEM

PROGRAM IM001402 (IMPERED) - JAN 1981

10:15 MONDAY, 143016Z 26, 1981 10

JOINT OCCURRENCE FREQUENCIES FOR LOWNOSES AND LOWNOSEPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN

YEAR=80

SEASON=SEMIYR

STAR=D

LOWNOSEPD

LOWNOSES	CALM	7.5-12.5	12.5-18.5	18.5-25	25-75	TOTAL	AVERAGE LOWNOSEPD
N	/	7/ 0.16	80/ 1.84	42/ 0.97	14/ 0.32	/	143.0/ 3.30 7.523379
NNE	/	8/ 0.14	124/ 2.95	106/ 4.29	27/ 0.62	3/ 0.07	348.0/ 9.02 8.447899
NE	/	10/ 0.23	77/ 1.79	72/ 1.66	9/ 0.21	/	168.0/ 3.87 7.512286
ENE	/	10/ 0.23	44/ 1.01	14/ 0.32	/	/	68.0/ 1.57 5.466765
E	/	11/ 0.25	30/ 0.69	3/ 0.07	/	/	44.0/ 1.01 4.719762
ESE	/	6/ 0.14	19/ 0.44	2/ 0.05	/	/	27.0/ 0.62 5.014234
SE	/	14/ 0.32	29/ 0.67	5/ 0.12	/	/	48.0/ 1.11 5.004236
SSE	/	5/ 0.12	36/ 0.83	14/ 0.32	/	/	55.0/ 1.27 6.325292
S	/	8/ 0.18	65/ 1.50	30/ 0.69	/	/	103.0/ 2.37 6.385715
SSW	/	8/ 0.18	58/ 1.34	32/ 0.74	1/ 0.02	/	99.0/ 2.29 6.555127
SW	/	7/ 0.16	42/ 0.97	15/ 0.35	2/ 0.05	/	66.0/ 1.52 6.259546
WSW	/	12/ 0.28	27/ 0.62	16/ 0.41	/	/	57.0/ 1.31 6.158243
W	/	10/ 0.23	33/ 0.76	3/ 0.07	/	/	46.0/ 1.06 4.912187
WNW	/	12/ 0.28	22/ 0.51	2/ 0.05	/	/	36.0/ 0.83 4.389693
NW	/	4/ 0.09	19/ 0.44	/	/	/	23.0/ 0.53 4.5095
NNW	/	7/ 0.16	37/ 0.85	13/ 0.30	8/ 0.18	/	65.0/ 1.50 7.116942
TOTAL	0/ 0.00	139/ 3.20	742/ 17.10	451/ 10.40	61/ 1.41	3/ 0.07	0/ 0.00 1396/ 32.2 6.855363

NUMBER OF BAD RECORDS: 27

CPSL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM IM001#02 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWNUDEC AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:15 MONDAY, JANUARY 26, 1981 11

SITE=ROSN

YEAR=80

SEASON=SEMIYR

STAB=E

LOWNDSPD

LOWNUDEC	CALM	1.5-3.5	3.5-7.5	7.5-12.5	12.5-16.5	16.5-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	0.2/ 0.00	25/ 0.58	48/ 1.11	1/ 0.02	/	/	/	74.2/ 1.71	4.361568
NNE	0.2/ 0.00	20/ 0.46	25/ 0.59	3/ 0.07	/	/	/	48.2/ 1.11	4.475957
NE	0.1/ 0.00	12/ 0.28	12/ 0.28	/	/	/	/	24.1/ 0.55	3.495522
ENE	0.0/ 0.00	5/ 0.12	11/ 0.25	/	/	/	/	16.0/ 0.37	3.358178
E	0.1/ 0.00	7/ 0.16	4/ 0.09	/	/	/	/	11.1/ 0.25	3.006006
ESE	0.1/ 0.00	8/ 0.18	10/ 0.23	/	/	/	/	18.1/ 0.42	3.71272
SE	0.0/ 0.00	5/ 0.12	9/ 0.21	1/ 0.02	/	/	/	15.0/ 0.35	4.118724
SSE	0.2/ 0.00	23/ 0.53	54/ 1.24	2/ 0.05	/	/	/	79.2/ 1.83	4.400136
S	0.4/ 0.01	57/ 1.31	67/ 1.54	1/ 0.02	/	/	/	125.4/ 2.89	3.795978
SSW	0.5/ 0.01	63/ 1.45	141/ 3.25	10/ 0.23	/	/	/	214.5/ 4.94	4.317113
SW	0.3/ 0.01	40/ 0.92	48/ 1.11	9/ 0.21	/	/	/	97.3/ 2.24	4.249723
WSW	0.2/ 0.01	30/ 0.69	17/ 0.39	7/ 0.16	/	/	/	54.2/ 1.25	4.109987
W	0.1/ 0.00	18/ 0.41	7/ 0.16	/	/	/	/	25.1/ 0.53	2.8394
WNW	0.2/ 0.00	24/ 0.55	7/ 0.15	1/ 0.02	/	/	/	32.2/ 0.74	3.066946
NW	0.2/ 0.00	20/ 0.46	13/ 0.30	4/ 0.09	/	/	/	37.2/ 0.86	3.898901
NNW	0.3/ 0.01	42/ 0.97	64/ 1.48	11/ 0.25	/	/	/	117.3/ 2.70	4.716549
TOTAL	3/ 0.07	399/ 9.20	537/ 12.38	50/ 1.15	0/ 0.00	0/ 0.00	0/ 0.00	989/ 22.9	4.149076

NUMBER OF BAD RECORDS: 13

CPAL ENVIRONMENTAL MONITORING SYSTEM
 PROGRAM 1M001402 (MDFREQ) - JAN 1981
 JOINT OCCURRENCE FREQUENCIES FOR LOWND06G AND LOWNDSPD
 RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

10:15 MONDAY, JANUARY 26, 1981 12

SITE=ROBN

YEAR=80

SEASON=SEMIYR

STAR=F

LOWNDSPD

LOWND06G	CALM	.75-2.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	0.8/ 0.02	29/ 0.67	9/ 0.21	1/ 0.02	/	/	/	39.8/ 0.92	2.743833
NNE	0.4/ 0.01	15/ 0.35	1/ 0.02	/	/	/	/	16.4/ 0.38	1.796629
NE	0.1/ 0.00	2/ 0.05	1/ 0.02	/	/	/	/	3.1/ 0.07	1.990242
ENE	0.3/ 0.01	4/ 0.21	/	/	/	/	/	4.3/ 0.21	1.400341
E	/	/	/	/	/	/	/	0.0/ 0.00	
ESE	0.1/ 0.00	4/ 0.09	/	/	/	/	/	4.1/ 0.09	1.516927
SE	0.1/ 0.00	4/ 0.09	/	/	/	/	/	4.1/ 0.09	1.630896
SSE	0.9/ 0.02	26/ 0.60	6/ 0.14	/	/	/	/	32.8/ 0.75	2.622493
S	1.2/ 0.03	40/ 0.92	27/ 0.62	1/ 0.02	/	/	/	69.2/ 1.59	3.237766
SSW	1.2/ 0.03	41/ 0.95	36/ 0.83	1/ 0.02	/	/	/	79.2/ 1.83	3.464906
SW	0.9/ 0.02	26/ 0.60	14/ 0.32	/	/	/	/	40.8/ 0.94	2.876637
WSW	0.4/ 0.01	14/ 0.32	10/ 0.23	/	/	/	/	24.4/ 0.56	3.375654
W	0.5/ 0.01	18/ 0.41	3/ 0.07	/	/	/	/	21.5/ 0.50	2.394995
WNW	0.2/ 0.00	7/ 0.16	3/ 0.07	/	/	/	/	10.2/ 0.24	2.499578
NW	0.5/ 0.01	17/ 0.39	6/ 0.14	/	/	/	/	23.5/ 0.54	3.132771
NNW	1.6/ 0.04	56/ 1.29	46/ 1.06	/	/	/	/	103.6/ 2.39	3.5069
TOTAL	9/ 0.21	309/ 7.10	162/ 3.73	3/ 0.07	0/ 0.00	0/ 0.00	0/ 0.00	482/11.1	3.051608

NUMBER OF BAD RECORDS: 0

CORE ENVIRONMENTAL MONITORING SYSTEM

10:15 MONDAY, JANUARY 26, 1981 13

PROGRAM 1M001702 (MDFREQ) - JAN 1981
JOINT OCCURRENCE FREQUENCIES FOR LOWNO DEG AND LOWNO SPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=RORN

YEAR=90

SEASON=SEMIYR

STA#=6

LOWNO SPD

LOWNO DEG	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE LOWNO SPD
N	3.5/ 0.03	42/ 0.97	11/ 0.25	/	/	/	/	56.5/ 1.30	2.114331
NNE	1.9/ 0.04	23/ 0.53	/	/	/	/	/	24.9/ 0.57	1.29749
NE	0.7/ 0.02	8/ 0.18	/	/	/	/	/	8.7/ 0.20	1.19306
ENE	0.5/ 0.01	6/ 0.14	/	/	/	/	/	6.5/ 0.15	0.9658383
E	0.2/ 0.01	3/ 0.07	/	/	/	/	/	3.2/ 0.07	1.005711
ESE	0.3/ 0.01	4/ 0.09	/	/	/	/	/	4.3/ 0.10	1.421209
SE	0.5/ 0.01	6/ 0.14	/	/	/	/	/	5.5/ 0.15	1.283888
SSE	1.0/ 0.02	12/ 0.28	2/ 0.05	/	/	/	/	15.0/ 0.35	2.053766
S	3.2/ 0.07	39/ 0.90	7/ 0.16	/	/	/	/	49.2/ 1.14	2.263145
SSW	1.1/ 0.02	13/ 0.30	1/ 0.02	/	/	/	/	15.1/ 0.35	2.278155
SW	0.8/ 0.02	10/ 0.23	2/ 0.05	/	/	/	/	12.9/ 0.30	2.167261
WSW	0.7/ 0.02	3/ 0.18	6/ 0.14	/	/	/	/	14.7/ 0.34	2.851739
W	0.3/ 0.01	4/ 0.09	2/ 0.05	/	/	/	/	6.3/ 0.15	2.673293
WNW	0.3/ 0.01	4/ 0.09	/	/	/	/	/	4.3/ 0.10	1.413453
NW	2.6/ 0.06	31/ 0.71	/	/	/	/	/	33.6/ 0.77	1.738214
NNW	10.3/ 0.24	124/ 2.86	28/ 0.65	/	/	/	/	162.3/ 3.74	2.501503
TOTAL	28/ 0.55	337/ 7.77	59/ 1.36	0/ 0.00	0/ 0.00	0/ 0.00	0/ 0.00	424/ 9.8	2.169546

NUMBER OF BAD RECORDS: 0