REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8505170615 DOC.DATE: 83/12/31 NOTARIZED: NO DOCKET #
FACIL:50-261 H. B. Robinson Plant, Unit 2, Carolina Power and Ligh 05000261
AUTH.NAME AUTHOR AFFILIATION
MORGAN,R.E. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

O'REILLY,J.P. Region 2, Office of Director

SUBJECT: "Effluent & waste Disposal Semiannual Rept,3rd & 4th Quarters,Jul - Dec 1983." W/840229 ltr.

DISTRIBUTION CODE: IE25L COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 137
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EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT

3rd and 4th Quarters, 1983

SUPPLEMENTAL 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 greater than 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 10 CFR 20, Appendix B, Table 2, Column 2, except unidentified not to exceed annual daily limit average of 26 mCi/day.

2. MAXIMUM PERMISSIBLE CONCENTRATIONS

A. Gaseous Effluent: The average annual release rates of gaseous wastes is limited to $\sum \frac{Qi}{MPCi} \leq 5.0E04\ m^3/sec.$

Qi 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, 10 CFR 20, 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 & ACTIVATION GASES RELEASED

3rd Quarter .154 MEV
4th 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, radionuclude gamma analysis, gross alpha and beta counting.

D. Liquid Effluents: measured and determined by composite sample analysis, individual sample analysis, radionuclude 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: 138
2. Total Time Period for Batch Releases: 4.36E04 Min.
3. Maximum Time Period for a Batch Release: 1252 Min.
4. Average Time Period for Batch Releases: 316 Min.
5. Minimum Time Period for a Batch Release: 75 Min.
6. Average Stream Flow during Periods of Release of Effluent into a Flowing Stream: 4.37E05 GPM

B. Gaseous

1. Number of Batch Releases: 111
2. Total Time Period for Batch Releases: 7.17E04 Min.
3. Maximum Time Period for a Batch Release: 4320 Min.
4. Average Time Period for a Batch Release: 646 Min.
5. Minimum Time Period for a Batch Release: 26 Min.

6. ABNORMAL RELEASES

A. Liquid - 0

B. Gaseous - 1

See Attachment I for description of abnormal release

TABLE 1A

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT - 1983

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

		UNITS	3rd QUARTER	4th QUARTER	% ERRO
A.	FISSION AND ACTIVATION GASES				
1.	Total Release	Ci	7.47E01	9.46E01	1.00E0
2.	Average Release Rate	uCi/sec	9.40E00	1.19E01	
3.	% of Tech. Spec. Limit	%	6.56E-02	8.06E-02	
4.	Maximum Release Rate/Hour	uCi/sec	2.24E03	1.38E03	
B.	IODINES				
1.	Total Iodine-131	Ci	1.03E-02	6.31E-04	1.00E01
2.	Average Release Rate	uCi/sec	1.31E-03	7.94E-05	
3.	% of Tech. Spec. Limit	%	1.83E01	1.11E00	
4.	Total Iodine	Ci	1.50E-02	6.95E-04	
C.	PARTICULATES				
1.	Particulates $T_{\frac{1}{2}}$ 8 days	Ci	1.34E-05	1.13E-05	1.00E01
2.	Average Release Rate	uCi/sec	1.67E-06	1.42E-06	
3.	% of Tech. Spec. Limit	%	7.63E-03	5.51E-03	
4.	Gross Alpha Radioactivity	Ci	0	0	
5.	Total Gross Radioactivity	Ci	1.33-05	1.13E-05	
D.	TRITIUM				
1.	Total Release	Ci	1.13E00	5.04E-01	1.00E01
2.	Average Release Rate	uCi/sec	1.42E-01	6.34E-02	
3.	% of Tech. Spec. Limit	%	1.42E-03	6.34E-04	

TABLE 1B

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT - 1983

GASEOUS EFFLUENTS - ELEVATED RELEASES

No elevated releases made at H. B. Robinson.

TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT - 1983

GASEOUS EFFLUENTS[1] - GROUND LEVEL RELEASES

			CONTINUOUS MODE		BATCH MODE	
		UNITS	3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
1.	FISSION GASES					
	Ar-41	Ci	1.28E-02	2.59E-03	3.12E-03	2.65E-03
	Kr-85	Ci	1.79E-01	2.62E-01	1.93E-01	9.90E-02
	Kr-85m	Ci	2.90E-03	7.06E-03	3.26E-02	1.21E-02
	Kr-87	Ci	0	0	0	0
	Kr-88	Ci	0	1.09E-03	0	4.22E-03
	Xe-131m	Ci	1.52E-01	1.53E-01	2.14E-01	8.86E-02
	Xe-133	Ci	7.09E01	9.15E01	6.73E02	3.24E02
	Xe-133m	Ci	1.75E00	1.96E00	1.92E01	7.34E00
	Xe-135	Ci	1.69E00	7.44E-01	1.87E01	2.45E00
	Xe-135m	Ci	0	0	0	0
	Total for Period	Ci	7.47E01	9.46E01	7.11E02	3.34E02
2.	IODINES					
	I-131	Ci	1.03E-02	6.31E-04	1.38E-04	4.72E-04
	I-133	Ci	4.32E-04	6.32E-05	2.33E-05	1.31E-04
	I-135	Ci	0	0	0	0
	Total for Period	Ci	1.07E-02	6.94E-04	1.61E-04	6.03E-04
3.	PARTICULATES					
	F-18	Ci	0	0	0	0
	Na-24	Ci	0	0	0	0
	K-40	Ci	0	0	0	0
	Cr-51	Ci	0	0	0	0
	Mn-54	Ci	0	0	1.16E-07	0
	Co-58	Ci	0	2.63E-08	1.06E-06	1.50E-06
	Co-60	Ci	1.19E-05	6.82E-06	4.97E-07	3.58E-06
	Y-88	Ci	0	0	0	0
	Rb-88	Ci	0	0	0	0
	Mo-99	Ci	0	0	1.60E-09	5.47E-08
	Tc-99m	Ci	0	0	0	0
	I-131	Ci	0	0	1.97E-07	1.13E-06
	Cs-134	Ci	1.46E-06	0	7.79E-07	1.18E-06
	Cs-136	Ci	0	0	0	0
	Cs-137	Ci	0	4.19E-06	1.20E-06	2.31E-06
	Cs-138	Ci	0	0	0	0
	Ba-139	Ci	0	0	0	0
	Ce-139	Ci	0	0	0	0
	Cd-109	Ci	0	2.69E-07	0	0
	Total for Period	Ci	1.34E-05	1.13E-05	3.85E-06	9.75E-06

[1] Continuous Accountability includes Batch Accountability.

TABLE 2A

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT - 1983

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

		UNITS	3rd QUARTER	4th QUARTER	% ERROR
A.	FISSION AND ACTIVATION PRODUCTS				
	1. Total Releases	Ci	3.78E-01	5.03E-02	1.00E01
	2. Average Diluted Concentration	uCi/ml	1.60E-09	2.48E-10	
	3. % of Applicable Limit	%	1.60E00	2.48E-01	
B.	TRITIUM				
	1. Total Release	Ci	5.22E01	2.41E01	1.00E01
	2. Average Diluted Concentration	uCi/ml	2.21E-07	1.19E-07	
	3. % of Applicable Limit	%	7.37E-03	3.96E-03	
C.	DISSOLVED AND ENTRAINED GASES				
	1. Total Release	Ci	9.71E-02	9.12E-03	1.00E01
	2. Average Diluted Concentration	uCi/ml	4.11E-10	4.49E-11	
	3. % of Applicable Limit	%	1.37E-02	1.50E-03	
D.	GROSS ALPHA RADIOACTIVITY				
	1. Total Release	Ci	0	0	1.00E01
E.	VOLUME OF WASTE RELEASED	Liters	4.18E07	1.59E07	1.00E01
F.	VOLUME OF DILUTION WATER	Liters	2.36E11	2.03E11	1.00E01
G.	MAXIMUM CONCENTRATION OF GROSS RADIOACTIVITY RELEASED	uCi/ml	1.76E-08	1.76E-08	1.00E01

TABLE 2B

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT - 1983

LIQUID EFFLUENTS

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES	UNITS	3rd QUARTER	4th QUARTER	3rd QUARTER	4th QUARTER
F-18	Ci	0	1.05E-04	7.17E-04	5.04E-04
Na-24	Ci	1.98E-01	5.50E-03	3.27E-05	1.51E-04
Cr-51	Ci	0	0	3.50E-04	1.16E-03
Mn-54	Ci	0	0	1.43E-04	2.02E-05
Fe-59	Ci	0	0	0	0
Co-58	Ci	2.02E-04	4.35E-04	4.13E-03	4.57E-03
Co-60	Ci	1.84E-03	2.81E-04	7.72E-02	1.47E-02
Zn-65	Ci	0	0	0	0
Y-88	Ci	5.56E-05	0	0	0
Sr-89	Ci	0	0	0	0
Sr-90	Ci	0	1.18E-05	1.20E-05	6.46E-06
Sr-92	Ci	0	0	4.43E-06	5.78E-05
Zr-95	Ci	0	0	0	1.03E-03
Nb-95	Ci	0	0	6.59E-05	3.04E-04
Nb-97	Ci	0	0	2.96E-03	6.50E-04
Zr-97	Ci	0	0	5.56E-07	7.39E-06
Tc-99m	Ci	0	0	5.11E-05	0
Mo-99	Ci	0	0	4.09E-05	0
Cd-109	Ci	0	0	0	0
Ag-110m	Ci	0	0	4.72E-04	6.68E-04
Sn-113	Ci	0	0	0	5.20E-05
Sb-124	Ci	0	0	0	2.47E-03
Sb-125	Ci	0	0	0	0
I-131	Ci	1.86E-02	5.74E-04	4.19E-03	6.08E-04
I-132	Ci	0	0	0	0
I-133	Ci	2.16E-02	1.74E-03	1.04E-03	4.28E-04
Cs-134	Ci	1.58E-02	4.21E-03	3.19E-03	1.60E-03
Cs-136	Ci	0	0	8.69E-05	0
Cs-137	Ci	2.15E-02	6.10E-03	4.94E-03	2.29E-03
Ce-144	Ci	0	0	0	0
Co-57	Ci	0	0	0	1.77E-06
Total	Ci	2.78E-01	1.90E-02	9.96E-02	3.13E-02
Ar-41	Ci	0	0	0	0
Kr-85	Ci	0	0	0	0
Kr-85m	Ci	0	0	0	0
Kr-87	Ci	0	0	0	0
Kr-88	Ci	0	0	0	0
Xe-131m	Ci	0	2.12E-04	0	0
Xe-133	Ci	1.04E-02	0	8.75E-04	8.50E-03
Xe-133m	Ci	0	0	0	7.32E-06
Xe-135	Ci	1.11E-02	2.34E-04	3.00E-03	2.70E-05
Xe-135m	Ci	7.17E-02	1.40E-04	0	0
Total	Ci	9.71E-02	5.86E-04	3.88E-03	8.53E-03

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT - 1983

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	M^3	1.11E02	
evaporator bottoms, etc.	Ci	1.36E01	1.00E01
(b) Dry compressible waste,	M^3	6.22E02	
contaminated equipment, etc.	Ci	2.62E01	1.00E01
(c) Irradiated components, control	M^3	0	
rods, etc.	Ci	0	
(d) Other	M^3	0	
	Ci	0	

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

		%	Ci.
(a)	Mn-54	1	1.36E-01
	Co-58	11	1.50E00
	Co-60	41	5.58E00
	Sb-124	19	2.58E00
	Sb-125	16	2.18E00
	Cs-137	4	5.44E-01
	Others*	8	1.09E00
(b)	Mn-54	1	2.62E-01
	Co-58	7	1.83E00
	Co-60	84	2.20E01
	Sb-124	1	2.62E-01
	Others*	7	1.83E00

3. Solid Waste Disposition

Number of Shipments: 52
Mode of Transportation: Sole Use Vehicle
Destination: Evaporator Bottoms & Trash — Barnwell S.C.
Solidified Oil — Richland, Wash.

IRRADIATED FUEL SHIPMENT (FOR STORAGE)

Number of Shipments: 0
Mode of Transportation: NA
Destination: NA

Number of Bundles: 0

*Others include (Co-57, Nb-95, Fe-59, Cs-134, Zr-97, Cs-137, SR-92, Ag-110m, Ce-144, Sb-125, I-131, Cr-51, Nb-97, Zr-95)

See Attachment II for description of contaminated flyash transfer

DOSE FROM SHORELINE SEDIMENT
MREM/YEAR

	CHILD	TEEN	ADULT
WHOLE BODY	2.38E-07	1.14E-06	2.04E-07
SKIN	2.80E-07	1.34E-06	2.40E-07

DOSE FROM EATING FISH
MREM/YEAR

	CHILD	TEEN	ADULT
BONE	3.59E-05	2.89E-05	2.74E-05
LIVER	4.26E-05	4.68E-05	4.74E-05
WHOLE BODY	7.68E-06	1.98E-05	3.49E-05
THYROID	2.26E-06	2.16E-06	2.29E-06
KIDNEY	1.36E-05	1.61E-05	1.58E-05
LUNG	4.92E-06	6.23E-06	5.27E-06
GI-LLI	1.16E-06	3.10E-06	4.33E-06

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

	CHILD	TEEN	ADULT
BONE	1.70E-03	9.33E-04	1.01E-03
LIVER	1.95E-03	1.51E-03	1.75E-03
WHOLE BODY	1.21E-03	9.02E-04	1.13E-03
THYROID	5.61E-01	3.79E-01	4.71E-01
KIDNEY	3.03E-03	2.44E-03	2.77E-03
LUNG	2.39E-04	2.02E-04	3.04E-04
GI-LLI	3.92E-04	4.64E-04	6.93E-04

DOSE FROM EATING PRODUCE FROM CRITICAL GARDEN
MREM/YEAR

	CHILD	TEEN	ADULT
BONE	3.25E-04	1.35E-04	7.95E-05
LIVER	3.95E-03	2.48E-03	1.99E-03
WHOLE BODY	3.75E-03	2.38E-03	1.95E-03
THYROID	5.64E-02	2.90E-02	1.99E-02
KIDNEY	3.93E-03	2.48E-03	1.98E-03
LUNG	3.63E-03	2.30E-03	1.67E-03
GI-LLI	3.67E-03	2.37E-03	1.94E-03

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

	CHILD	TEEN	ADULT
BONE	1.78E-03	9.33E-04	1.21E-03
LIVER	1.95E-03	1.51E-03	1.78E-03
WHOLE BODY	1.21E-03	9.02E-04	1.13E-03
THYROID	5.61E-01	3.79E-01	4.71E-01
KIDNEY	3.22E-03	2.44E-03	2.77E-03
LUNG	2.39E-04	2.02E-04	3.77E-04
GI-LLI	3.92E-04	4.64E-04	6.93E-04

DOSE FROM EATING PRODUCE FROM CRITICAL GARDEN
MREM/YEAR

	CHILD	TEEN	ADULT
BONE	3.25E-04	1.35E-04	7.95E-05
LIVER	3.95E-03	2.48E-03	1.99E-03
WHOLE BODY	3.75E-03	2.38E-03	1.55E-03
THYROID	5.54E-02	2.90E-02	1.95E-02
KIDNEY	3.93E-03	2.48E-03	1.98E-03
LUNG	3.63E-03	2.30E-03	1.87E-03
GI-LLI	3.67E-03	2.37E-03	1.94E-03

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

	INFANT	CHILD	TEEN	ADULT
BONE	1.84E-03	8.79E-04	3.63E-04	2.00E-04
LIVER	2.16E-03	8.85E-04	3.08E-04	2.86E-04
WHOLE BODY	9.51E-04	5.03E-04	2.73E-04	1.64E-04
THYROID	7.11E-01	2.92E-01	1.48E-01	9.37E-02
KIDNEY	2.53E-03	1.45E-03	6.74E-04	4.90E-04
LUNG	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GI-LLI	7.72E-05	7.87E-05	1.00E-04	7.54E-05

TOTAL DOSE FROM DRINKING MILK FROM CRITICAL COW
MREM/YEAR

	INFANT	CHILD	TEEN	ADULT
BONE	1.86E-03	8.96E-04	3.70E-04	2.04E-04
LIVER	2.31E-03	9.75E-04	3.64E-04	3.27E-04
WHOLE BODY	1.06E-03	5.78E-04	3.23E-04	2.03E-04
THYROID	7.11E-01	2.93E-01	1.48E-01	9.37E-02
KIDNEY	2.65E-03	1.53E-03	9.24E-04	5.27E-04
LUNG	1.13E-04	7.41E-05	4.69E-05	3.57E-05
GI-LLI	1.87E-04	1.52E-04	1.47E-04	1.11E-04

POPULATION INTEGRATED WHOLE BODY DOSES
PERSON-REM/YEAR

RADIAL DISTANCE, MILES

	0.5	1.5	2.5	3.5	4.5
S	4.45E-05	1.47E-05	3.18E-05	2.67E-05	2.43E-05
SSW	8.01E-04	8.37E-06	8.39E-05	1.43E-05	2.90E-05
SW	1.22E-04	4.69E-05	1.82E-05	1.06E-05	1.75E-05
WSW	1.36E-04	3.76E-05	5.53E-06	1.21E-05	7.03E-06
W	5.67E-05	8.37E-06	9.56E-06	6.64E-06	8.38E-06
WNW	1.74E-05	1.40E-05	2.55E-06	5.90E-07	3.03E-06
NW	4.54E-06	1.76E-05	1.14E-05	3.68E-06	5.38E-06
NNW	0.00E+00	3.67E-06	8.83E-06	2.06E-06	0.00E+00
N	0.00E+00	1.34E-05	2.72E-05	3.82E-05	7.03E-05
NNE	0.00E+00	1.41E-04	1.29E-04	7.24E-05	1.02E-05
NE	0.00E+00	1.27E-04	4.22E-05	2.77E-05	1.65E-05
ENE	6.01E-05	3.94E-06	9.95E-05	1.39E+02	1.12E-03
E	7.78E-06	0.00E+00	3.99E-06	7.25E-05	1.37E-04
ESE	6.81E-05	7.04E-05	1.07E-05	1.59E-05	2.69E-04
SE	1.37E-05	1.06E-04	7.98E-05	1.73E-04	2.69E-04
SSE	5.53E-05	4.75E-05	2.51E-04	3.18E-04	9.65E-05

RADIAL DISTANCE, MILES

	7.5	15.0	25.0	35.0	45.0
S	1.60E-04	8.32E-05	7.36E-05	1.01E-04	5.15E-05
SSW	4.64E-05	1.39E-04	1.23E-04	5.22E-04	4.36E-05
SW	5.84E-05	2.18E-05	2.60E-05	4.52E-05	4.49E-05
WSW	4.10E-05	1.99E-05	6.47E-05	1.25E-05	4.68E-05
W	6.72E-06	1.71E-05	1.31E-05	7.34E-06	3.52E-06
WNW	4.98E-06	9.75E-06	1.71E-05	1.14E-05	2.71E-05
NW	2.06E-05	1.12E-05	2.05E-05	1.67E-05	1.90E-05
NNW	1.80E-05	2.23E-05	5.70E-05	3.22E-05	1.11E-04
N	7.03E-05	7.96E-04	1.26E-04	1.14E-04	4.83E-05
NNE	2.44E-05	2.98E-05	1.16E-04	7.75E-05	1.24E-04
NE	1.24E-04	9.51E-05	1.30E-04	9.29E-05	7.51E-05
ENE	1.94E-04	2.00E-04	3.80E-04	1.34E-04	1.15E-04
E	1.46E-04	4.44E-05	2.97E-05	3.45E-05	7.52E-05
ESE	8.99E-05	3.48E-04	3.82E-04	4.63E-05	6.35E-05
SE	2.23E-04	1.74E-04	5.12E-04	7.27E-05	6.35E-05
SSE	3.29E-04	4.41E-04	3.59E-04	1.91E-04	2.55E-04

TOTAL POPULATION INTEGRATED WHOLE BODY DOSE= 1.39E+02 PERSON-REM

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

	INFANT	CHILD	TEEN	ADULT
WHOLE BODY	9.05E-02	1.53E+00	1.36E+00	5.48E+00
THYROID	1.17E+01	1.29E+02	9.34E+01	3.18E+02

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

DOSE FOR CRITICAL SECTOR AT SITE BOUNDARY= 3.54E-02 MREM/6 MOS.

	RADIAL DISTANCE, MILES				
	0.5	1.5	2.5	3.5	4.5
S	2.78E-03	9.16E-04	4.25E-04	2.62E-04	1.83E-04
SSW	2.51E-03	8.37E-04	3.74E-04	2.23E-04	1.51E-04
SW	1.26E-03	4.28E-04	1.88E-04	1.09E-04	7.27E-05
WSW	8.74E-04	2.94E-04	1.29E-04	7.54E-05	5.06E-05
W	7.56E-04	2.54E-04	1.11E-04	6.51E-05	4.36E-05
WNW	6.68E-04	2.19E-04	9.82E-05	5.90E-05	4.05E-05
NW	9.08E-04	2.98E-04	1.34E-04	8.06E-05	5.54E-05
NNW	2.17E-03	7.34E-04	3.40E-04	2.06E-04	1.44E-04
N	4.03E-03	1.34E-03	6.33E-04	3.94E-04	2.75E-04
NNE	4.19E-03	1.45E-03	6.72E-04	4.09E-04	1.36E-04
NE	3.08E-03	1.08E-03	4.97E-04	3.01E-04	2.06E-04
ENE	2.31E-03	7.88E-04	3.64E-04	1.18E+03	1.05E-02
E	1.56E-03	5.30E-04	2.43E-04	1.47E-04	1.02E-04
ESE	2.06E-03	6.90E-04	3.23E-04	1.99E-04	1.89E-04
SE	2.75E-03	9.01E-04	4.27E-04	2.68E-04	1.89E-04
SSE	5.53E-03	1.93E-03	8.68E-04	5.46E-04	3.84E-04

	RADIAL DISTANCE, MILES				
	7.5	15.0	25.0	35.0	45.0
S	8.92E-05	3.20E-05	1.44E-05	8.37E-06	5.52E-06
SSW	7.10E-05	2.41E-05	1.04E-05	5.92E-06	3.84E-06
SW	3.33E-05	1.08E-05	4.53E-06	2.54E-06	1.63E-06
WSW	2.34E-05	7.72E-06	3.20E-06	1.85E-06	1.20E-06
W	2.00E-05	6.59E-06	2.77E-06	1.58E-06	1.00E-06
WNW	1.92E-05	6.68E-06	2.92E-06	1.69E-06	1.10E-06
NW	2.64E-05	9.20E-06	4.05E-06	2.32E-06	1.52E-06
NNW	6.96E-05	2.46E-05	1.10E-05	6.35E-06	4.16E-06
N	1.36E-04	4.89E-04	2.21E-05	1.30E-05	8.46E-06
NNE	4.72E-05	2.02E-05	1.19E-05	7.44E-06	7.80E-06
NE	9.80E-05	3.40E-05	1.47E-05	8.45E-06	5.54E-06
ENE	1.53E-04	7.42E-05	2.61E-05	1.16E-05	6.68E-06
E	4.87E-05	1.70E-05	7.49E-06	4.32E-06	2.82E-06
ESE	6.78E-05	2.43E-05	1.09E-05	6.32E-06	6.07E-06
SE	9.39E-05	3.46E-05	1.57E-05	9.20E-06	6.07E-06
SSE	1.91E-04	7.05E-05	3.22E-05	1.89E-05	1.25E-05

SKIN DOSES FROM AIR SUBMERSION IN RADIOACTIVE GASES
MREM/YEAR

DOSE FOR CRITICAL SECTOR AT SITE BOUNDARY= 1.02E-01 MREM/6 MOS.

	RADIAL DISTANCE, MILES				
	0.5	1.5	2.5	3.5	4.5
S	8.06E-03	2.65E-03	1.23E-03	7.58E-04	5.29E-04
SSW	7.28E-03	2.43E-03	1.08E-03	6.46E-04	4.37E-04
SW	3.65E-03	1.24E-03	5.43E-04	3.15E-04	2.10E-04
WSW	2.53E-03	8.51E-04	3.72E-04	2.16E-04	1.47E-04
W	2.19E-03	7.34E-04	3.22E-04	1.69E-04	1.26E-04
WNW	1.93E-03	6.35E-04	2.85E-04	1.71E-04	1.17E-04
NW	2.63E-03	8.64E-04	3.89E-04	2.34E-04	1.61E-04
NNW	6.28E-03	2.12E-03	9.84E-04	6.01E-04	4.17E-04
N	1.17E-02	3.89E-03	1.83E-03	1.14E-03	7.96E-04
NNE	1.21E-02	4.80E-03	1.95E-03	1.19E-03	3.93E-04
NE	8.92E-03	3.12E-03	1.44E-03	8.71E-04	5.98E-04
ENE	6.69E-03	2.28E-03	1.06E-03	3.42E+03	3.04E-02
E	4.51E-03	1.53E-03	7.04E-04	4.27E-04	2.94E-04
ESE	5.98E-03	2.00E-03	9.36E-04	5.77E-04	5.47E-04
SE	7.96E-03	2.61E-03	1.24E-03	7.75E-04	5.47E-04
SSE	1.60E-02	5.29E-03	2.51E-03	1.58E-03	1.11E-03

	RADIAL DISTANCE, MILES				
	7.5	15.0	25.0	35.0	45.0
S	2.58E-04	9.26E-05	4.17E-05	2.43E-05	1.60E-05
SSW	2.06E-04	6.97E-05	3.01E-05	1.71E-05	1.11E-05
SW	9.63E-05	3.13E-05	1.31E-05	7.34E-06	4.71E-06
WSW	6.76E-05	2.24E-05	9.50E-06	5.36E-06	3.48E-06
W	5.81E-05	1.91E-05	8.03E-06	4.51E-06	2.90E-06
WNW	5.57E-05	1.93E-05	8.47E-06	4.88E-06	3.19E-06
NW	7.65E-05	2.66E-05	1.17E-05	6.73E-06	4.41E-06
NNW	2.02E-04	7.14E-05	3.17E-05	1.84E-05	1.21E-05
N	3.93E-04	1.42E-03	6.39E-05	3.76E-05	2.45E-05
NNE	1.37E-04	6.01E-05	3.45E-05	2.26E-05	2.26E-05
NE	2.84E-04	9.84E-05	4.27E-05	2.46E-05	1.61E-05
ENE	4.44E-04	2.15E-04	7.55E-05	3.35E-05	1.93E-05
E	1.41E-04	4.92E-05	2.17E-05	1.25E-05	8.16E-06
ESE	1.96E-04	7.04E-05	3.15E-05	1.83E-05	1.76E-05
SE	2.72E-04	1.00E-04	4.54E-05	2.66E-05	1.76E-05
SSE	5.53E-04	2.04E-04	9.32E-05	5.47E-05	3.62E-05

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

	INFANT	CHILD	TEEN	ADULT
BONE	3.93E-04	4.99E-04	3.57E-04	2.61E-04
LIVER	4.60E-04	4.99E-04	5.09E-04	3.71E-04
WHOLE BODY	2.03E-04	2.83E-04	2.74E-04	2.12E-04
THYROID	1.54E-01	1.68E-01	1.52E-01	1.24E-01
KIDNEY	5.37E-04	8.17E-04	8.71E-04	6.35E-04
LUNG	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GI-LLI	1.10E-05	2.95E-05	6.73E-05	6.51E-05

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

	INFANT	CHILD	TEEN	ADULT
BONE	4.02E-04	5.11E-04	3.76E-04	2.68E-04
LIVER	1.48E-03	2.26E-03	2.50E-03	2.35E-03
WHOLE BODY	1.21E-03	2.04E-03	2.26E-03	2.18E-03
THYROID	1.57E-01	1.72E-01	1.55E-01	1.27E-01
KIDNEY	1.55E-03	2.58E-03	2.87E-03	2.61E-03
LUNG	1.09E-03	1.97E-03	2.13E-03	2.07E-03
GI-LLI	1.02E-03	1.78E-03	2.05E-03	2.04E-03

ATTACHMENT II

Contaminated Flyash Transfer

Transferal of Contaminated Flyash from the H. B. Robinson Settling/Retention Pond to the Ash Pond was started on July 20, 1983, and was completed August 4, 1983. The NRC approved Safety Analysis, Special Procedures #499, and details of this operation may be found in Company correspondence Memorandum, 83-930. The total radioactivity transferred to the Ash Pond, man-made plus naturally occurring isotopes, totalled 173.05 millicuries. However, our Safety Analysis was based on the exclusion of naturally occurring isotopes which give 49.9 millicuries of man-made radioactivity transferred. It should be noted that 33.95 millicuries of Co-60 (the limiting isotope) was included into the total, whereas 75 millicuries was the allowable limit.

ATTACHMENT I

Description of Abnormal Release

SUPPLEMENTAL INFORMATION
FOR
LICENSEE EVENT REPORT 83-024

I. Cause Description and Analysis

At 0800, Friday, September 16, 1983, with the Plant in a cold shutdown condition, the Iodine filter cartridge was removed from the Particulate Iodine Noble Gas (PING) System for routine analysis. The result indicated the release rate for the previous 24 hours was 2.07 times the Annual Average Release Rate which is allowed by the Technical Specifications. Because this was an unusually high value, the inservice Iodine filter was removed at approximately 1300 hours and sampled. It showed a release rate of 3.1 times the Annual Average Release Rate which is allowed by the Technical Specifications. Upon receiving the analysis results, an effort was begun to isolate and track the Iodine release. The current inservice Iodine cartridge was removed around 1425 hours and counted. These results indicated the Iodine Release Rate was 22.2 times the Annual Average Release Rate or 2.22 times the Technical Specification Instantaneous Release Rate (T.S. 3.9.2). Between 1300 hours on September 16, 1983, and 2010 hours on September 16, 1983, .003 curies of I-131 were released.

II. Corrective Action

The immediate corrective action was to shut down everything which could even remotely be causing the release. At 1823 hours, another Iodine filter cartridge was removed from the PING and sampled. This result showed the release rate had decreased slightly to a value of 2.04. Furthermore, instantaneous readings from the PING showed the release rate was falling. The source of the Iodine was still unknown, but by approximately 2100 hours, the release rate was within acceptable values.

The follow-up corrective action was to repeat evolutions which had been occurring on the previous day in a controlled manner to determine what effect they would have on the release rate. Evolutions with the least possibility of causing an increase in the release rate were chosen to be performed first. Every precaution was to be taken to preclude allowing the release rate to exceed the allowed limits. Concurrent with these activities, prior data was being analyzed in an effort to establish a correlation between Plant events and changes in the release rate.

"A" Boric Acid Evaporator, which had been used to process water from the Waste Holdup Tank, was put in service and caused only a slight increase in stack Iodine. "B" Boric Acid Evaporator was then placed in service and resulted in an increase in activity (approximately 20% of the annual average Technical Specification limit) but still not enough to explain the rates experienced during the release event. While these tests were being conducted, the Gas Analyzer was being inspected to determine if it had a flow path which might have allowed Iodine to enter the Plant vent. The equipment checked out without indicating any problem. The next evolution consisted of venting the Volume Control Tank to the Waste Gas System. It did not produce any perceivable change in the release rate. Furthermore, the results indicated it was not a likely suspect because of the activity levels in the VCT.

The Auxiliary Building charcoal filters fan, HVE-5, was stopped with no change noted. The Gas Analyzer was then placed in service and used to sample various tanks. A special sampling collector was put in place of the sample bomb and was used to sample for Iodine on the Pressurizer Relief Tank and the Volume Control Tank. Results of these tests failed to produce a detectable change in release rate. Performing these tests took until Sunday night, September 18, 1983. With no results to indicate a source, a new plan was made to test the operation of HVE-5 with an evaporator in service. These tests resulted in no significant change in Iodine levels.

During the above investigation, extensive Iodine sampling was conducted throughout the Auxiliary Building, and a person was stationed at the PING system to continuously monitor Iodine and to calculate the average annual release rate each hour.

III. Corrective Action to Prevent Recurrence

The hourly printout on the PING system and the PING charcoal cartridge will be removed and analyzed each working day. The hourly PING printout will be used for further detailed analysis if the cartridge analysis indicates the annual average release rate for the previous day was exceeded. These interim measures will be followed until the proposed Radiological Environmental Technical Specification (RETS), currently under review by the NRC, are approved, at which time the requirements of the RETS will be followed.

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
LISTING OF CURRENT.SUMMARY

14:32 WEDNESDAY, OCTOBER 26, 1983

OBS	STE.	YEAR	MONTH	DAY	HOUR	STAB	DEL TAT	AMB TEMP	SOLAR RAD	PRECIP	BARO PRES	DPT TEMP	LOCAM BDP	UPCAM BDP	LOWND SPD	UPWND SPD	LOWND DEG	UPWND DEG	LOWND VAR	UPWND VAR
337	ROBN	83	09	15	01	D	-1.10	64.6	0.00	.	29.71	55.9	.	.	9.1	17.6	19.78	17.17	11.8	4.5
338	ROBN	83	09	15	02	D	-1.13	63.6	0.00	.	29.71	55.6	.	.	9.8	17.5	25.88	21.98	10.8	4.6
339	ROBN	83	09	15	03	D	-1.10	63.1	0.00	.	29.72	55.5	.	.	9.7	17.6	19.02	19.68	10.9	4.4
340	ROBN	83	09	15	04	D	-1.08	62.9	0.00	.	29.73	54.9	.	.	8.4	15.6	12.68	14.12	12.7	4.7
341	ROBN	83	09	15	05	D	-0.87	62.0	0.00	.	29.74	54.0	.	.	7.7	14.8	358.17	7.30	12.8	5.0
342	ROBN	83	09	15	06	E	-0.36	60.4	0.00	.	29.75	53.5	.	.	6.7	13.6	342.06	2.59	11.7	5.3
343	ROBN	83	09	15	07	D	-0.66	61.1	0.08	.	29.77	53.8	.	.	8.7	15.9	359.15	7.61	11.9	5.2
344	ROBN	83	09	15	08	D	-1.17	62.6	0.35	.	29.80	53.9	.	.	9.6	16.2	16.93	15.54	12.6	5.4
345	ROBN	83	09	15	09	C	-1.61	65.3	0.66	.	29.82	54.7	.	.	11.4	17.0	24.77	23.99	11.6	6.0
346	ROBN	83	09	15	10	C	-1.68	68.4	0.90	.	29.84	56.0	.	.	11.7	17.3	36.66	36.11	10.4	5.1
347	ROBN	83	09	15	11	B	-1.70	70.8	0.97	.	29.85	56.4	.	.	10.9	15.9	37.71	39.30	10.2	5.8
348	ROBN	83	09	15	12	A	-2.00	73.0	1.19	.	29.84	55.9	.	.	9.7	13.4	49.55	51.79	11.6	7.3
349	ROBN	83	09	15	13	A	-1.95	74.3	1.15	.	29.82	54.9	.	.	9.8	14.1	46.68	47.19	11.1	7.1
350	ROBN	83	09	15	14	B	-1.73	75.7	1.02	.	29.81	54.7	.	.	8.5	12.2	57.29	60.74	12.1	7.6
351	ROBN	83	09	15	15	C	-1.54	76.0	0.93	.	29.79	53.8	.	.	8.8	13.1	74.61	73.25	11.8	6.5
352	ROBN	83	09	15	16	C	-1.62	76.4	0.78	.	29.78	52.4	.	.	8.1	11.9	66.58	65.79	11.5	6.6
353	ROBN	83	09	15	17	D	-1.42	75.9	0.49	.	29.78	53.4	.	.	7.5	10.6	62.65	63.20	11.1	6.4
354	ROBN	83	09	15	18	D	-0.77	74.6	0.17	.	29.78	53.8	.	.	6.2	9.7	55.77	58.83	10.1	5.8
355	ROBN	83	09	15	19	E	-0.00	72.3	0.01	.	29.79	54.8	.	.	4.1	8.4	48.23	53.03	7.9	4.1
356	ROBN	83	09	15	20	E	1.31	70.4	0.00	.	29.82	55.6	.	.	3.7	11.3	47.05	48.76	7.4	1.6
357	ROBN	83	09	15	21	E	-0.31	70.7	0.00	.	29.83	54.0	.	.	6.4	12.7	51.09	49.41	7.7	2.2
358	ROBN	83	09	15	22	D	-0.92	70.1	0.00	.	29.83	53.9	.	.	7.5	12.9	65.93	69.29	9.5	4.8
359	ROBN	83	09	15	23	D	-1.10	68.6	0.00	.	29.84	55.1	.	.	7.1	11.6	82.24	87.57	10.9	6.8
360	ROBN	83	09	15	24	D	-0.97	67.2	0.00	.	29.84	55.3	.	.	5.7	9.8	82.23	88.76	11.3	7.5
361	ROBN	83	09	16	01	D	-1.07	66.3	0.00	.	29.84	54.5	.	.	6.4	10.2	82.49	87.00	10.8	6.9
362	ROBN	83	09	16	02	D	-1.03	65.1	0.00	.	29.83	53.4	.	.	6.0	9.3	77.84	80.92	15.2	7.3
363	ROBN	83	09	16	03	D	-0.87	63.6	0.00	.	29.82	53.3	.	.	4.5	7.7	44.54	55.29	10.1	7.3
364	ROBN	83	09	16	04	D	-0.81	62.2	0.00	.	29.82	52.9	.	.	4.8	8.3	24.31	38.36	.	6.9
365	ROBN	83	09	16	05	D	-0.75	61.2	0.00	.	29.83	52.8	.	.	4.7	8.4	17.41	27.00	.	6.7
366	ROBN	83	09	16	06	D	-0.78	60.3	0.00	.	29.85	53.1	.	.	4.8	8.8	16.98	27.47	.	6.3
367	ROBN	83	09	16	07	D	-0.83	60.0	0.08	.	29.87	52.8	.	.	5.1	8.7	26.17	36.42	.	7.5
368	ROBN	83	09	16	08	D	-1.25	62.3	0.35	.	29.87	53.6	.	.	5.5	8.3	38.41	44.61	.	8.0
369	ROBN	83	09	16	09	D	-1.39	65.4	0.62	.	29.86	54.5	.	.	6.1	7.9	66.76	69.06	.	8.4
370	ROBN	83	09	16	10	C	-1.65	68.7	0.92	.	29.86	54.3	.	.	6.6	8.4	63.08	66.65	14.9	7.5
371	ROBN	83	09	16	11	C	-1.70	72.1	1.12	.	29.85	52.7	.	.	6.7	8.9	80.81	82.59	12.4	8.1
372	ROBN	83	09	16	12	C	-1.63	74.0	1.23	.	29.84	50.9	.	.	6.9	9.1	63.06	68.49	12.7	8.2
373	ROBN	83	09	16	13	B	-1.70	75.7	1.26	.	29.82	50.4	.	.	5.3	6.0	98.34	98.90	17.4	14.3
374	ROBN	83	09	16	14	C	-1.70	76.4	1.21	.	29.80	51.4	.	.	5.3	6.6	79.72	81.23	30.0	19.4
375	ROBN	83	09	16	15	B	-1.76	76.8	1.07	.	29.77	52.4	.	.	4.4	5.2	100.41	82.84	22.9	17.0
376	ROBN	83	09	16	16	C	-1.60	77.0	0.82	.	29.76	52.6	.	.	3.7	4.0	134.14	130.87	20.3	18.4
377	ROBN	83	09	16	17	D	-1.38	76.5	0.50	.	29.76	52.9	.	.	4.4	5.8	102.07	111.66	14.0	10.0
378	ROBN	83	09	16	18	D	-1.06	75.5	0.17	.	29.76	53.9	.	.	3.7	5.3	127.48	130.17	10.0	5.8
379	ROBN	83	09	16	19	E	1.34	72.1	0.01	.	29.76	57.8	.	.	2.1	6.1	148.90	137.30	9.6	2.6
380	ROBN	83	09	16	20	F	3.84	68.9	0.00	.	29.77	57.8	.	.	1.2	6.8	174.78	136.38	4.9	1.0
381	ROBN	83	09	16	21	G	6.02	65.7	0.00	.	29.78	55.2	.	.	0.5	5.5	243.16	142.87	2.1	0.9
382	ROBN	83	09	16	22	G	6.42	63.8	0.00	.	29.78	57.2	.	.	0.7	4.3	3.21	167.40	1.9	1.7
383	ROBN	83	09	16	23	G	6.76	63.1	0.00	.	29.77	60.1	.	.	0.9	3.3	12.21	165.41	0.8	2.5
384	ROBN	83	09	16	24	G	7.36	62.1	0.00	.	29.77	59.7	.	.	1.2	3.8	353.20	179.23	1.0	1.7

Form 244

COPY

CP&L

Carolina Power & Light Company

Company Correspondence

Raleigh, North Carolina
January 30, 1984

M E M O R A N D U M

TO: Mr. G. P. Beatty

FROM: T. D. Drum

SUBJECT: Meteorological Data - Semiannual Report

The attached information, described as follows, is provided for the January 1984 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 if this transmittal is required.

2. Enclosures 3 - Estimates of relative concentration (X/Q) and deposition (D/Q) for the six-month period July 1, 1983 through December 31 1983. 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.

Tom Drum

TDD/pdc (7530TDD)

cc: Mr. A. Eaddy (w/attachment) ✓
Mr. B. H. Webster (w/o attachment)
Dr. W. T. Hogarth (w/o attachment)

ENCLOSURE 1

JOINT FREQUENCY OF WIND DIRECTION AND SPEED
THIRD QUARTER 1983
H. B. ROBINSON STEAM ELECTRIC PLANT

The attached tables present the number and 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, 1983.

The frequencies are presented as a percent of total occurrences for each stability class as well as a summary for all classes of each sensor elevation. 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 Stability categories based on lower level (10m) wind distribution:

A	B	C	D	E	F	G
11.1	7.9	7.0	33.2	25.1	12.1	3.6

2. Wind Speed	10 Meter	60 Meter
Average Speed (mph)	5.0	8.3
Percent Calm	0.7	0.0
Percent Less than 3.5 mph	30.9	6.0

3. Wind Direction	10 Meter	60 Meter
Prevailing Direction	SSW	SW
Percent Occurrence	14.0	12.7

4. Data Recovery	10 Meter	60 Meter
Percent Good Hours	98.6	98.6

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 1
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR SUMMARY OVER ALL STAB

UPWNDDEG	UPWNDSPD							
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	10/ 0.46	38/ 1.75	74/ 3.40	29/ 1.33	5/ 0.23	/	156.0/ 7.17	9.72804
NNE	/	7/ 0.32	58/ 2.67	123/ 5.65	81/ 3.72	8/ 0.37	/	277.0/12.73	10.57526
NE	/	8/ 0.37	41/ 1.88	64/ 2.94	43/ 1.98	3/ 0.14	/	159.0/ 7.31	9.96581
ENE	/	6/ 0.28	40/ 1.84	55/ 2.53	14/ 0.64	/	/	115.0/ 5.28	8.44093
E	/	9/ 0.41	41/ 1.88	45/ 2.07	1/ 0.05	/	/	96.0/ 4.41	6.82303
ESE	/	11/ 0.51	40/ 1.84	17/ 0.78	2/ 0.09	/	/	70.0/ 3.22	5.91605
SE	/	13/ 0.60	60/ 2.76	19/ 0.87	1/ 0.05	/	/	93.0/ 4.27	5.89058
SSE	/	11/ 0.51	60/ 2.76	52/ 2.39	4/ 0.18	/	/	127.0/ 5.84	7.25249
S	/	3/ 0.14	48/ 2.21	86/ 3.95	12/ 0.55	/	/	149.0/ 6.85	8.67682
SSW	/	10/ 0.46	60/ 2.76	115/ 5.28	18/ 0.83	1/ 0.05	/	204.0/ 9.38	8.75266
SW	/	7/ 0.32	106/ 4.87	162/ 7.44	19/ 0.87	/	/	294.0/13.51	8.32162
WSW	/	3/ 0.14	88/ 4.04	63/ 2.90	4/ 0.18	/	/	158.0/ 7.26	7.39779
W	/	11/ 0.51	64/ 2.94	20/ 0.92	1/ 0.05	/	/	96.0/ 4.41	5.96496
WNW	/	8/ 0.37	37/ 1.70	22/ 1.01	/	1/ 0.05	/	68.0/ 3.13	6.30094
NW	/	3/ 0.14	30/ 1.38	24/ 1.10	3/ 0.14	/	/	60.0/ 2.76	7.15719
NNW	/	10/ 0.46	25/ 1.15	16/ 0.74	3/ 0.14	/	/	54.0/ 2.48	6.58230
TOTAL	/	130/ 5.97	836/38.42	957/43.98	235/10.80	18/ 0.83	/	2176/ 100	8.28124

NUMBER OF BAD RECORDS: 32

FORM ( )2/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 3
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=A

UPWNDDEG	UPWNDSPD							
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	5/ 0.23	7/ 0.32	2/ 0.09	2/ 0.09	/	16.0/ 0.74	10.33120
NNE	/	/	2/ 0.09	17/ 0.78	16/ 0.74	/	/	35.0/ 1.61	11.96550
NE	/	/	1/ 0.05	7/ 0.32	10/ 0.46	/	/	18.0/ 0.83	12.12087
ENE	/	/	2/ 0.09	12/ 0.55	1/ 0.05	/	/	15.0/ 0.69	10.02427
E	/	/	1/ 0.05	8/ 0.37	/	/	/	9.0/ 0.41	9.02303
ESE	/	/	5/ 0.23	6/ 0.28	1/ 0.05	/	/	12.0/ 0.55	7.88588
SE	/	/	12/ 0.55	3/ 0.14	/	/	/	15.0/ 0.69	6.61219
SSE	/	/	7/ 0.32	10/ 0.46	1/ 0.05	/	/	18.0/ 0.83	8.72658
S	/	/	4/ 0.18	15/ 0.69	1/ 0.05	/	/	20.0/ 0.92	9.58145
SSW	/	/	8/ 0.37	10/ 0.46	2/ 0.09	/	/	20.0/ 0.92	8.70518
SW	/	/	10/ 0.46	18/ 0.83	6/ 0.28	/	/	34.0/ 1.56	9.36693
WSW	/	/	4/ 0.18	5/ 0.23	2/ 0.09	/	/	11.0/ 0.51	9.33345
W	/	/	3/ 0.14	3/ 0.14	/	/	/	6.0/ 0.28	7.45372
WNW	/	/	2/ 0.09	5/ 0.23	/	/	/	7.0/ 0.32	8.10167
NW	/	/	1/ 0.05	2/ 0.09	1/ 0.05	/	/	4.0/ 0.18	9.72152
NNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.80340
TOTAL	/	/	68/ 3.13	128/ 5.88	43/ 1.98	2/ 0.09	/	241.0/11.08	9.62129

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND .UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 1
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR SUMMARY OVER ALL STAB

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	0.8/ 0.04	37/ 1.70	73/ 3.35	28/ 1.29	2/ 0.09	/	/	140.8/ 6.47	5.54905
NNE	0.4/ 0.02	17/ 0.78	122/ 5.61	95/ 4.37	1/ 0.05	/	/	235.4/10.82	7.04161
NE	0.3/ 0.01	13/ 0.60	69/ 3.17	59/ 2.71	1/ 0.05	/	/	142.3/ 6.54	6.95409
ENE	0.4/ 0.02	16/ 0.74	69/ 3.17	16/ 0.74	/	/	/	101.4/ 4.66	5.42573
E	0.5/ 0.02	20/ 0.92	54/ 2.48	5/ 0.23	/	/	/	79.5/ 3.65	4.77004
ESE	0.2/ 0.01	9/ 0.41	43/ 1.98	3/ 0.14	/	/	/	55.2/ 2.54	4.69573
SE	0.4/ 0.02	18/ 0.83	53/ 2.44	4/ 0.18	/	/	/	75.4/ 3.47	4.67320
SSE	0.8/ 0.04	34/ 1.56	85/ 3.91	18/ 0.83	/	/	/	137.8/ 6.33	5.02291
S	1.5/ 0.07	64/ 2.94	81/ 3.72	35/ 1.61	/	/	/	181.5/ 8.34	4.97101
SSW	2.9/ 0.13	126/ 5.79	131/ 6.02	41/ 1.88	4/ 0.18	/	/	304.9/14.01	4.66097
SW	2.1/ 0.10	91/ 4.18	125/ 5.74	23/ 1.06	1/ 0.05	/	/	242.1/11.13	4.51981
WSW	1.0/ 0.05	44/ 2.02	53/ 2.44	8/ 0.37	/	/	/	106.0/ 4.87	4.21476
W	0.6/ 0.03	27/ 1.24	40/ 1.84	5/ 0.23	/	/	/	72.6/ 3.34	4.12706
WNW	0.9/ 0.04	41/ 1.88	31/ 1.42	2/ 0.09	/	/	/	74.9/ 3.44	3.44202
NW	0.9/ 0.04	39/ 1.79	29/ 1.33	4/ 0.18	/	/	/	72.9/ 3.35	3.63824
NNW	1.4/ 0.06	61/ 2.80	81/ 3.72	10/ 0.46	/	/	/	153.4/ 7.05	4.10358
TOTAL	15.0/ 0.69	657/30.19	1139/52.34	356/16.36	9/ 0.41	/	/	2176/ 100	5.04508

NUMBER OF BAD RECORDS: 32

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 2
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 3
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=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	/	/	6/ 0.28	10/ 0.46	/	/	/	16.0/ 0.74	7.92062
NNE	/	/	10/ 0.46	26/ 1.19	/	/	/	36.0/ 1.65	8.54316
NE	/	/	2/ 0.09	18/ 0.83	/	/	/	20.0/ 0.92	8.97115
ENE	/	/	5/ 0.23	7/ 0.32	/	/	/	12.0/ 0.55	7.61167
E	/	/	6/ 0.28	3/ 0.14	/	/	/	9.0/ 0.41	6.49954
ESE	/	/	11/ 0.51	2/ 0.09	/	/	/	13.0/ 0.60	6.16590
SE	/	/	17/ 0.78	1/ 0.05	/	/	/	18.0/ 0.83	6.09656
SSE	/	/	13/ 0.60	7/ 0.32	/	/	/	20.0/ 0.92	7.14190
S	/	/	5/ 0.23	15/ 0.69	/	/	/	20.0/ 0.92	8.25412
SSW	/	/	16/ 0.74	10/ 0.46	1/ 0.05	/	/	27.0/ 1.24	7.53175
SW	/	/	14/ 0.64	9/ 0.41	1/ 0.05	/	/	24.0/ 1.10	7.59755
WSW	/	/	4/ 0.18	5/ 0.23	/	/	/	9.0/ 0.41	8.10961
W	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	6.58329
WNW	/	/	5/ 0.23	1/ 0.05	/	/	/	6.0/ 0.28	6.69223
NW	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	6.74670
NNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	4.58562
TOTAL	/	/	121/ 5.56	118/ 5.42	2/ 0.09	/	/	241.0/11.08	7.59930

NUMBER OF BAD RECORDS: 0

FORM (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 5
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=B

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	/	/	9/ 0.41	5/ 0.23	/	/	/	14.0/ 0.64	7.21789
NNE	/	/	13/ 0.60	8/ 0.37	/	/	/	21.0/ 0.97	7.02811
NE	/	/	7/ 0.32	10/ 0.46	1/ 0.05	/	/	18.0/ 0.83	8.50518
ENE	/	/	9/ 0.41	3/ 0.14	/	/	/	12.0/ 0.55	6.60886
E	/	1/ 0.05	7/ 0.32	1/ 0.05	/	/	/	9.0/ 0.41	5.40640
ESE	/	1/ 0.05	8/ 0.37	/	/	/	/	9.0/ 0.41	4.79499
SE	/	1/ 0.05	10/ 0.46	1/ 0.05	/	/	/	12.0/ 0.55	5.16786
SSE	/	1/ 0.05	7/ 0.32	6/ 0.28	/	/	/	14.0/ 0.64	7.12340
S	/	1/ 0.05	3/ 0.14	2/ 0.09	/	/	/	6.0/ 0.28	6.56717
SSW	/	/	3/ 0.14	1/ 0.05	1/ 0.05	/	/	5.0/ 0.23	8.06069
SW	/	/	16/ 0.74	5/ 0.23	/	/	/	21.0/ 0.97	6.55327
WSW	/	/	10/ 0.46	2/ 0.09	/	/	/	12.0/ 0.55	5.60558
W	/	/	7/ 0.32	1/ 0.05	/	/	/	8.0/ 0.37	6.04677
WNW	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	5.71952
NW	/	/	7/ 0.32	/	/	/	/	7.0/ 0.32	5.93868
NNW	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.77839
TOTAL	/	5/ 0.23	120/ 5.51	45/ 2.07	2/ 0.09	/	/	172.0/ 7.90	6.59377

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 7
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=C

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	/	/	15/ 0.69	1/ 0.05	/	/	/	16.0/ 0.74	5.39332
NNE	/	/	7/ 0.32	8/ 0.37	/	/	/	15.0/ 0.69	7.89839
NE	/	/	9/ 0.41	4/ 0.18	/	/	/	13.0/ 0.60	6.67385
ENE	/	/	11/ 0.51	5/ 0.23	/	/	/	16.0/ 0.74	6.40112
E	/	/	7/ 0.32	1/ 0.05	/	/	/	8.0/ 0.37	5.97799
ESE	/	1/ 0.05	8/ 0.37	/	/	/	/	9.0/ 0.41	4.06129
SE	/	1/ 0.05	4/ 0.18	1/ 0.05	/	/	/	6.0/ 0.28	4.85242
SSE	/	1/ 0.05	6/ 0.28	1/ 0.05	/	/	/	8.0/ 0.37	5.81332
S	/	/	1/ 0.05	4/ 0.18	/	/	/	5.0/ 0.23	7.84392
SSW	/	/	3/ 0.14	5/ 0.23	1/ 0.05	/	/	9.0/ 0.41	8.67656
SW	/	/	12/ 0.55	5/ 0.23	/	/	/	17.0/ 0.78	6.62782
WSW	/	/	7/ 0.32	/	/	/	/	7.0/ 0.32	5.80766
W	/	2/ 0.09	7/ 0.32	1/ 0.05	/	/	/	10.0/ 0.46	4.91912
WNW	/	/	7/ 0.32	/	/	/	/	7.0/ 0.32	4.91912
NW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	5.86960
NNW	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	6.00967
TOTAL	/	5/ 0.23	109/ 5.01	37/ 1.70	1/ 0.05	/	/	152.0/ 6.99	6.21133

NUMBER OF BAD RECORDS: 0

FORM (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 8
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 9
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=D

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	/	5/ 0.23	27/ 1.24	11/ 0.51	2/ 0.09	/	/	45.0/ 2.07	6.81415
NNE	/	5/ 0.23	83/ 3.81	51/ 2.34	1/ 0.05	/	/	140.0/ 6.43	7.11177
NE	/	6/ 0.28	37/ 1.70	26/ 1.19	/	/	/	69.0/ 3.17	6.89096
ENE	/	10/ 0.46	32/ 1.47	1/ 0.05	/	/	/	43.0/ 1.98	4.83187
E	/	11/ 0.51	29/ 1.33	/	/	/	/	40.0/ 1.84	4.52893
ESE	/	3/ 0.14	13/ 0.60	1/ 0.05	/	/	/	17.0/ 0.78	4.56306
SE	/	9/ 0.41	17/ 0.78	1/ 0.05	/	/	/	27.0/ 1.24	4.12861
SSE	/	6/ 0.28	41/ 1.88	4/ 0.18	/	/	/	51.0/ 2.34	5.12609
S	/	5/ 0.23	43/ 1.98	12/ 0.55	/	/	/	60.0/ 2.76	5.91156
SSW	/	5/ 0.23	43/ 1.98	23/ 1.06	1/ 0.05	/	/	72.0/ 3.31	6.50464
SW	/	11/ 0.51	40/ 1.84	3/ 0.14	/	/	/	54.0/ 2.48	4.83976
WSW	/	12/ 0.55	19/ 0.87	/	/	/	/	31.0/ 1.42	4.02459
W	/	5/ 0.23	15/ 0.69	/	/	/	/	20.0/ 0.92	4.14707
WNW	/	9/ 0.41	7/ 0.32	1/ 0.05	/	/	/	17.0/ 0.78	4.08341
NW	/	5/ 0.23	8/ 0.37	2/ 0.09	/	/	/	15.0/ 0.69	4.76349
NNW	/	1/ 0.05	12/ 0.55	8/ 0.37	/	/	/	21.0/ 0.97	6.72002
TOTAL	/	108/ 4.96	466/21.42	144/ 6.62	4/ 0.18	/	/	722.0/33.18	5.80503

NUMBER OF BAD RECORDS: 1

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 10
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 11
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=E

LOWNDSPD

LOWNDDEG	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	/	14/ 0.64	15/ 0.69	1/ 0.05	/	/	/	30.0/ 1.38	3.93641
NNE	/	5/ 0.23	8/ 0.37	2/ 0.09	/	/	/	15.0/ 0.69	4.65788
NE	/	2/ 0.09	13/ 0.60	1/ 0.05	/	/	/	16.0/ 0.74	5.09838
ENE	/	6/ 0.28	12/ 0.55	/	/	/	/	18.0/ 0.83	3.82691
E	/	6/ 0.28	5/ 0.23	/	/	/	/	11.0/ 0.51	3.51691
ESE	/	2/ 0.09	3/ 0.14	/	/	/	/	5.0/ 0.23	3.66183
SE	/	6/ 0.28	5/ 0.23	/	/	/	/	11.0/ 0.51	3.38957
SSE	/	15/ 0.69	13/ 0.60	/	/	/	/	28.0/ 1.29	3.43207
S	/	28/ 1.29	26/ 1.18	2/ 0.09	/	/	/	56.0/ 2.57	3.93709
SSW	/	81/ 3.72	62/ 2.85	2/ 0.09	/	/	/	145.0/ 6.66	3.60444
SW	/	43/ 1.98	37/ 1.70	1/ 0.05	/	/	/	81.0/ 3.72	3.58121
WSW	/	13/ 0.60	8/ 0.37	/	/	/	/	21.0/ 0.97	3.19366
W	/	9/ 0.41	5/ 0.23	1/ 0.05	/	/	/	15.0/ 0.69	3.23940
WNW	/	19/ 0.87	5/ 0.23	/	/	/	/	24.0/ 1.10	2.51167
NW	/	10/ 0.46	8/ 0.37	/	/	/	/	18.0/ 0.83	3.20067
NNW	/	17/ 0.78	35/ 1.61	1/ 0.05	/	/	/	53.0/ 2.44	4.33707
TOTAL	/	276/12.68	260/11.95	11/ 0.51	/	/	/	547.0/25.14	3.70276

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 13
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=F

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	0.6/ 0.03	11/ 0.51	1/ 0.05	/	/	/	/	12.6/ 0.58	2.21140
NNE	0.3/ 0.01	6/ 0.28	1/ 0.05	/	/	/	/	7.3/ 0.34	2.35390
NE	0.3/ 0.01	5/ 0.23	1/ 0.05	/	/	/	/	6.3/ 0.29	2.06583
ENE	/	/	/	/	/	/	/	/	
E	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	2.77789
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	0.5/ 0.02	9/ 0.41	5/ 0.23	/	/	/	/	14.5/ 0.67	2.87556
S	1.2/ 0.06	23/ 1.06	3/ 0.14	/	/	/	/	27.2/ 1.25	2.49694
SSW	1.8/ 0.08	35/ 1.61	4/ 0.18	/	/	/	/	40.8/ 1.87	2.37535
SW	1.7/ 0.08	34/ 1.56	5/ 0.23	/	/	/	/	40.7/ 1.87	2.41376
WSW	0.7/ 0.03	14/ 0.64	3/ 0.14	1/ 0.05	/	/	/	18.7/ 0.86	2.85992
W	0.5/ 0.02	10/ 0.46	3/ 0.14	/	/	/	/	13.5/ 0.62	2.67725
WNW	0.5/ 0.02	9/ 0.41	2/ 0.09	/	/	/	/	11.5/ 0.53	2.12206
NW	0.7/ 0.03	13/ 0.60	2/ 0.09	/	/	/	/	15.7/ 0.72	2.25642
NNW	1.5/ 0.07	30/ 1.38	22/ 1.01	/	/	/	/	53.5/ 2.46	3.00476
TOTAL	10.0/ 0.46	200/ 9.19	52/ 2.39	1/ 0.05	/	/	/	263.0/12.09	2.57069

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 15
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=G

LOWNDSPD

LOWNDDEG	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	0.6/ 0.03	7/ 0.32	/	/	/	/	/	7.6/ 0.35	1.85727
NNE	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	0.85268
NE	/	/	/	/	/	/	/	/	
ENE	/	/	/	/	/	/	/	/	
E	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	0.77689
ESE	0.2/ 0.01	2/ 0.09	/	/	/	/	/	2.2/ 0.10	1.50452
SE	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	2.11089
SSE	0.2/ 0.01	2/ 0.09	/	/	/	/	/	2.2/ 0.10	1.55000
S	0.6/ 0.03	7/ 0.32	/	/	/	/	/	7.6/ 0.35	1.95820
SSW	0.4/ 0.02	5/ 0.23	/	/	/	/	/	5.4/ 0.25	1.59955
SW	0.2/ 0.01	3/ 0.14	1/ 0.05	/	/	/	/	4.2/ 0.19	2.43374
WSW	0.4/ 0.02	5/ 0.23	2/ 0.09	/	/	/	/	7.4/ 0.34	2.77163
W	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	1.09523
WNW	0.3/ 0.01	4/ 0.18	3/ 0.14	/	/	/	/	7.3/ 0.34	2.36532
NW	0.9/ 0.04	11/ 0.51	/	/	/	/	/	11.9/ 0.55	1.63140
NNW	1.0/ 0.05	13/ 0.60	5/ 0.23	/	/	/	/	19.0/ 0.87	2.62410
TOTAL	5.0/ 0.23	63/ 2.90	11/ 0.51	/	/	/	/	79.0/ 3.63	2.11322

NUMBER OF BAD RECORDS: 0

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

ENCLOSURE 2

JOINT FREQUENCY OF WIND DIRECTION AND SPEED
FOURTH QUARTER 1983
H. B. ROBINSON STEAM ELECTRIC PLANT

The attached tables present the number and 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, 1983.

The frequencies are presented as a percent of total occurrences for each stability class as well as a summary for all classes of each sensor elevation. 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 Stability categories based on lower level (10m) wind distribution:

A	B	C	D	E	F	G
1.4	2.4	4.0	39.1	28.1	9.4	15.5

2. Wind Speed

	10 Meter	60 Meter
Average Speed (mph)	5.2	9.4
Percent Calm	1.2	0.0
Percent Less than 3.5 mph	33.1	7.1

3. Wind Direction

	10 Meter	60 Meter
Prevailing Direction	NNE	NNE
Percent Occurrence	13.9	15.6

4. Data Recovery

	10 Meter	60 Meter
Percent Good Hours	99.6	99.6

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 17
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR SUMMARY OVER ALL STAB

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	10/ 0.45	29/ 1.32	72/ 3.27	58/ 2.64	12/ 0.55	/	181.0/ 8.23	10.99352
NNE	/	15/ 0.68	60/ 2.73	164/ 7.46	103/ 4.68	/	/	342.0/15.55	10.23416
NE	/	9/ 0.41	46/ 2.09	109/ 4.96	62/ 2.82	/	/	226.0/10.28	10.15977
ENE	/	5/ 0.23	43/ 1.96	27/ 1.23	12/ 0.55	/	/	87.0/ 3.96	7.83878
E	/	9/ 0.41	47/ 2.14	21/ 0.95	2/ 0.09	/	/	79.0/ 3.59	6.53090
ESE	/	16/ 0.73	28/ 1.27	7/ 0.32	2/ 0.09	4/ 0.18	/	57.0/ 2.59	6.42836
SE	/	6/ 0.27	15/ 0.68	29/ 1.32	1/ 0.05	1/ 0.05	1/ 0.05	53.0/ 2.41	8.42402
SSE	/	8/ 0.36	19/ 0.86	33/ 1.50	14/ 0.64	2/ 0.09	/	76.0/ 3.46	9.01986
S	/	4/ 0.18	25/ 1.14	39/ 1.77	22/ 1.00	1/ 0.05	/	91.0/ 4.14	9.58257
SSW	/	9/ 0.41	45/ 2.05	91/ 4.14	23/ 1.05	4/ 0.18	/	172.0/ 7.82	9.04774
SW	/	6/ 0.27	58/ 2.64	99/ 4.50	54/ 2.46	5/ 0.23	/	222.0/10.10	10.13284
WSW	/	14/ 0.64	61/ 2.77	95/ 4.32	35/ 1.59	1/ 0.05	/	206.0/ 9.37	9.10441
W	/	12/ 0.55	55/ 2.50	77/ 3.50	10/ 0.45	4/ 0.18	/	158.0/ 7.19	8.31006
WNW	/	12/ 0.55	22/ 1.00	31/ 1.41	25/ 1.14	1/ 0.05	/	91.0/ 4.14	9.06515
NW	/	13/ 0.59	26/ 1.18	25/ 1.14	16/ 0.73	2/ 0.09	2/ 0.09	84.0/ 3.82	9.16212
NNW	/	7/ 0.32	16/ 0.73	27/ 1.23	19/ 0.86	3/ 0.14	2/ 0.09	74.0/ 3.37	10.35382
TOTAL	/	155/ 7.05	595/27.06	946/43.02	458/20.83	40/ 1.82	5/ 0.23	2199/ 100	9.41759

NUMBER OF BAD RECORDS: 9

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 19
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=A

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	/	1/ 0.05	1/ 0.05	1/ 0.05	/	3.0/ 0.14	14.72402
NNE	/	/	/	2/ 0.09	1/ 0.05	/	/	3.0/ 0.14	12.48401
NE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.16975
ENE	/	/	2/ 0.09	2/ 0.09	5/ 0.23	/	/	9.0/ 0.41	11.12964
E	/	/	/	/	/	/	/	/	
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	/	/	/	/	/	/	
S	/	/	/	/	/	/	/	/	
SSW	/	/	/	/	/	/	/	/	
SW	/	/	/	1/ 0.05	3/ 0.14	/	/	4.0/ 0.18	13.01484
WSW	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	11.50575
W	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.22811
WNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.83675
NW	/	/	/	/	2/ 0.09	/	/	2.0/ 0.09	12.92312
NNW	/	/	/	/	4/ 0.18	/	/	4.0/ 0.18	15.76620
TOTAL	/	/	6/ 0.27	8/ 0.36	16/ 0.73	1/ 0.05	/	31.0/ 1.41	11.97534

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 21
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=B

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	/	1/ 0.05	2/ 0.09	/	/	3.0/ 0.14	14.39607
NNE	/	/	/	5/ 0.23	2/ 0.09	/	/	7.0/ 0.32	10.97691
NE	/	/	3/ 0.14	2/ 0.09	4/ 0.18	/	/	9.0/ 0.41	11.29453
ENE	/	/	4/ 0.18	2/ 0.09	/	/	/	6.0/ 0.27	6.95070
E	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	5.83625
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	/	/	/	/	/	/	
S	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	6.31149
SSW	/	/	/	/	/	1/ 0.05	/	1.0/ 0.05	18.74269
SW	/	/	3/ 0.14	3/ 0.14	2/ 0.09	/	/	8.0/ 0.36	9.91537
WSW	/	/	2/ 0.09	3/ 0.14	/	/	/	5.0/ 0.23	8.41420
W	/	/	4/ 0.18	2/ 0.09	/	/	/	6.0/ 0.27	7.31477
WNW	/	/	/	/	/	/	/	/	
NW	/	/	/	/	1/ 0.05	/	/	1.0/ 0.05	15.52442
NNW	/	/	/	2/ 0.09	1/ 0.05	/	/	3.0/ 0.14	12.35062
TOTAL	/	/	19/ 0.86	21/ 0.95	12/ 0.55	1/ 0.05	/	53.0/ 2.41	9.89205

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 23
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=C

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	1/ 0.05	9/ 0.41	5/ 0.23	1/ 0.05	/	16.0/ 0.73	11.15974
NNE	/	1/ 0.05	2/ 0.09	7/ 0.32	4/ 0.18	/	/	14.0/ 0.64	9.96212
NE	/	1/ 0.05	1/ 0.05	7/ 0.32	6/ 0.27	/	/	15.0/ 0.68	12.07010
ENE	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.28281
E	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	5.14424
ESE	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	2.86810
SE	/	/	/	/	/	/	/	/	
SSE	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	5.95297
S	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.92846
SSW	/	/	2/ 0.09	/	1/ 0.05	/	/	3.0/ 0.14	9.84380
SW	/	/	3/ 0.14	1/ 0.05	1/ 0.05	/	/	5.0/ 0.23	8.77105
WSW	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	7.42371
W	/	1/ 0.05	4/ 0.18	3/ 0.14	1/ 0.05	1/ 0.05	/	10.0/ 0.45	8.92279
WNW	/	/	/	1/ 0.05	1/ 0.05	/	/	2.0/ 0.09	12.03101
NW	/	/	/	1/ 0.05	4/ 0.18	/	1/ 0.05	6.0/ 0.27	16.66388
NNW	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	8.89611
TOTAL	/	5/ 0.23	23/ 1.05	36/ 1.64	23/ 1.05	2/ 0.09	1/ 0.05	90.0/ 4.09	10.16279

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 25
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=D

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	3/ 0.14	11/ 0.50	29/ 1.32	34/ 1.55	10/ 0.45	/	87.0/ 3.96	12.40486
NNE	/	2/ 0.09	15/ 0.68	90/ 4.09	87/ 3.96	/	/	194.0/ 8.82	11.76713
NE	/	2/ 0.09	19/ 0.86	69/ 3.14	43/ 1.96	/	/	133.0/ 6.05	10.83574
ENE	/	3/ 0.14	16/ 0.73	13/ 0.59	4/ 0.18	/	/	36.0/ 1.64	7.93684
E	/	3/ 0.14	13/ 0.59	5/ 0.23	1/ 0.05	/	/	22.0/ 1.00	6.60860
ESE	/	13/ 0.59	11/ 0.50	4/ 0.18	/	/	/	28.0/ 1.27	4.70056
SE	/	6/ 0.27	7/ 0.32	6/ 0.27	/	/	/	19.0/ 0.86	6.05653
SSE	/	5/ 0.23	10/ 0.45	7/ 0.32	5/ 0.23	1/ 0.05	/	28.0/ 1.27	8.05105
S	/	/	8/ 0.36	10/ 0.45	7/ 0.32	/	/	25.0/ 1.14	9.53454
SSW	/	1/ 0.05	19/ 0.86	26/ 1.18	5/ 0.23	1/ 0.05	/	52.0/ 2.36	8.62899
SW	/	1/ 0.05	15/ 0.68	19/ 0.86	7/ 0.32	1/ 0.05	/	43.0/ 1.96	9.49583
WSW	/	1/ 0.05	16/ 0.73	25/ 1.14	16/ 0.73	/	/	58.0/ 2.64	10.16264
W	/	1/ 0.05	9/ 0.41	33/ 1.50	2/ 0.09	2/ 0.09	/	47.0/ 2.14	9.46040
WNW	/	2/ 0.09	11/ 0.50	16/ 0.73	10/ 0.45	1/ 0.05	/	40.0/ 1.82	9.67483
NW	/	1/ 0.05	7/ 0.32	8/ 0.36	8/ 0.36	2/ 0.09	1/ 0.05	27.0/ 1.23	11.75031
NNW	/	1/ 0.05	4/ 0.18	5/ 0.23	5/ 0.23	3/ 0.14	2/ 0.09	20.0/ 0.91	13.01900
TOTAL	/	45/ 2.05	191/ 8.69	365/16.60	234/10.64	21/ 0.95	3/ 0.14	859.0/39.06	10.24509

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 27
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=E

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	5/ 0.23	6/ 0.27	25/ 1.14	16/ 0.73	/	/	52.0/ 2.36	9.99859
NNE	/	2/ 0.09	19/ 0.86	31/ 1.41	8/ 0.36	/	/	60.0/ 2.73	8.70935
NE	/	/	10/ 0.45	20/ 0.91	9/ 0.41	/	/	39.0/ 1.77	10.13541
ENE	/	/	9/ 0.41	6/ 0.27	2/ 0.09	/	/	17.0/ 0.77	8.19331
E	/	2/ 0.09	10/ 0.45	7/ 0.32	1/ 0.05	/	/	20.0/ 0.91	7.57879
ESE	/	/	8/ 0.36	1/ 0.05	2/ 0.09	4/ 0.18	/	15.0/ 0.68	10.87543
SE	/	/	6/ 0.27	15/ 0.68	1/ 0.05	1/ 0.05	1/ 0.05	24.0/ 1.09	10.05433
SSE	/	3/ 0.14	5/ 0.23	13/ 0.59	9/ 0.41	1/ 0.05	/	31.0/ 1.41	10.08192
S	/	2/ 0.09	7/ 0.32	18/ 0.82	13/ 0.59	1/ 0.05	/	41.0/ 1.86	10.68583
SSW	/	2/ 0.09	11/ 0.50	26/ 1.18	10/ 0.45	2/ 0.09	/	51.0/ 2.32	9.74114
SW	/	/	14/ 0.64	26/ 1.18	30/ 1.36	4/ 0.18	/	74.0/ 3.37	12.01028
WSW	/	2/ 0.09	18/ 0.82	35/ 1.59	14/ 0.64	1/ 0.05	/	70.0/ 3.18	9.93163
W	/	2/ 0.09	13/ 0.59	32/ 1.46	7/ 0.32	1/ 0.05	/	55.0/ 2.50	9.37135
WNW	/	2/ 0.09	2/ 0.09	7/ 0.32	11/ 0.50	/	/	22.0/ 1.00	10.90545
NW	/	2/ 0.09	12/ 0.55	7/ 0.32	/	/	/	21.0/ 0.95	6.67556
NNW	/	2/ 0.09	4/ 0.18	13/ 0.59	7/ 0.32	/	/	26.0/ 1.18	10.00051
TOTAL	/	26/ 1.18	154/ 7.00	282/12.82	140/ 6.37	15/ 0.68	1/ 0.05	618.0/28.10	9.90298

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 29
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=F

UPWNDSPD

UPWNDDEG	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	3/ 0.14	5/ 0.23	/	/	/	8.0/ 0.36	8.07904
NNE	/	4/ 0.18	11/ 0.50	16/ 0.73	/	/	/	31.0/ 1.41	6.95401
NE	/	2/ 0.09	5/ 0.23	7/ 0.32	/	/	/	14.0/ 0.64	6.54732
ENE	/	/	/	1/ 0.05	1/ 0.05	/	/	2.0/ 0.09	11.67250
E	/	1/ 0.05	3/ 0.14	2/ 0.09	/	/	/	6.0/ 0.27	5.80846
ESE	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	/	5.0/ 0.23	5.67950
SE	/	/	1/ 0.05	8/ 0.36	/	/	/	9.0/ 0.41	9.52328
SSE	/	/	/	7/ 0.32	/	/	/	7.0/ 0.32	10.01453
S	/	/	/	3/ 0.14	1/ 0.05	/	/	4.0/ 0.18	11.32232
SSW	/	1/ 0.05	2/ 0.09	11/ 0.50	6/ 0.27	/	/	20.0/ 0.91	10.41187
SW	/	/	3/ 0.14	22/ 1.00	8/ 0.36	/	/	33.0/ 1.50	10.45118
WSW	/	2/ 0.09	4/ 0.18	12/ 0.55	1/ 0.05	/	/	19.0/ 0.86	8.55778
W	/	2/ 0.09	8/ 0.36	4/ 0.18	/	/	/	14.0/ 0.64	6.17809
WNW	/	4/ 0.18	1/ 0.05	7/ 0.32	3/ 0.14	/	/	15.0/ 0.68	8.32861
NW	/	2/ 0.09	3/ 0.14	8/ 0.36	1/ 0.05	/	/	14.0/ 0.64	8.47924
NNW	/	1/ 0.05	/	4/ 0.18	1/ 0.05	/	/	6.0/ 0.27	9.34356
TOTAL	/	20/ 0.91	47/ 2.14	118/ 5.37	22/ 1.00	/	/	207.0/ 9.41	8.50957

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 31
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=G

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	2/ 0.09	8/ 0.36	2/ 0.09	/	/	/	12.0/ 0.55	5.01084
NNE	/	6/ 0.27	13/ 0.59	13/ 0.59	1/ 0.05	/	/	33.0/ 1.50	6.82917
NE	/	4/ 0.18	7/ 0.32	4/ 0.18	/	/	/	15.0/ 0.68	5.27597
ENE	/	2/ 0.09	10/ 0.45	1/ 0.05	/	/	/	13.0/ 0.59	4.81651
E	/	2/ 0.09	18/ 0.82	7/ 0.32	/	/	/	27.0/ 1.23	6.00609
ESE	/	1/ 0.05	6/ 0.27	1/ 0.05	/	/	/	8.0/ 0.36	5.05044
SE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	4.38552
SSE	/	/	2/ 0.09	5/ 0.23	/	/	/	7.0/ 0.32	8.51140
S	/	2/ 0.09	7/ 0.32	7/ 0.32	1/ 0.05	/	/	17.0/ 0.77	7.28011
SSW	/	5/ 0.23	11/ 0.50	28/ 1.27	1/ 0.05	/	/	45.0/ 2.05	7.87097
SW	/	5/ 0.23	20/ 0.91	27/ 1.23	3/ 0.14	/	/	55.0/ 2.50	7.85968
WSW	/	9/ 0.41	18/ 0.82	16/ 0.73	4/ 0.18	/	/	47.0/ 2.14	6.93751
W	/	6/ 0.27	15/ 0.68	3/ 0.14	/	/	/	24.0/ 1.09	5.03585
WNW	/	4/ 0.18	7/ 0.32	/	/	/	/	11.0/ 0.50	3.83525
NW	/	8/ 0.36	4/ 0.18	1/ 0.05	/	/	/	13.0/ 0.59	4.00841
NNW	/	3/ 0.14	8/ 0.36	1/ 0.05	1/ 0.05	/	/	13.0/ 0.59	5.52455
TOTAL	/	59/ 2.68	155/ 7.05	116/ 5.28	11/ 0.50	/	/	341.0/15.51	6.50164

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 17
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR SUMMARY OVER ALL STAB

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	2.0/ 0.09	54/ 2.46	74/ 3.37	48/ 2.18	2/ 0.09	/	/	180.0/ 8.19	5.50432
NNE	1.3/ 0.06	36/ 1.64	154/ 7.00	114/ 5.18	/	/	/	305.3/13.88	6.58964
NE	0.7/ 0.03	20/ 0.91	87/ 3.96	78/ 3.55	/	/	/	185.7/ 8.44	6.85973
ENE	0.7/ 0.03	18/ 0.82	41/ 1.86	14/ 0.64	/	/	/	73.7/ 3.35	5.15459
E	0.8/ 0.04	21/ 0.95	16/ 0.73	2/ 0.09	/	/	/	39.8/ 1.81	3.66974
ESE	0.9/ 0.04	23/ 1.05	9/ 0.41	5/ 0.23	1/ 0.05	/	/	38.9/ 1.77	4.11343
SE	0.9/ 0.04	24/ 1.09	21/ 0.95	2/ 0.09	2/ 0.09	/	/	49.9/ 2.27	4.07172
SSE	1.6/ 0.07	43/ 1.96	61/ 2.77	13/ 0.59	2/ 0.09	/	/	120.6/ 5.48	4.54012
S	3.0/ 0.14	80/ 3.64	49/ 2.23	36/ 1.64	4/ 0.18	/	/	172.0/ 7.82	4.67002
SSW	2.0/ 0.09	53/ 2.41	78/ 3.55	18/ 0.82	4/ 0.18	/	/	155.0/ 7.05	4.96322
SW	1.4/ 0.06	37/ 1.68	79/ 3.59	50/ 2.27	1/ 0.05	/	/	168.4/ 7.66	5.87694
WSW	1.7/ 0.08	45/ 2.05	89/ 4.05	21/ 0.95	1/ 0.05	/	/	157.7/ 7.17	4.88840
W	1.3/ 0.06	35/ 1.59	64/ 2.91	15/ 0.68	1/ 0.05	/	/	116.3/ 5.29	4.90260
WNW	1.6/ 0.07	43/ 1.96	40/ 1.82	13/ 0.59	/	/	/	97.6/ 4.44	4.30064
NW	2.3/ 0.10	61/ 2.77	25/ 1.14	13/ 0.59	2/ 0.09	/	/	103.3/ 4.70	3.85719
NNW	4.0/ 0.18	109/ 4.96	98/ 4.46	21/ 0.95	3/ 0.14	/	/	235.0/10.69	4.22344
TOTAL	26.0/ 1.18	702/31.92	985/44.79	463/21.06	23/ 1.05	/	/	2199/ 100	5.19651

NUMBER OF BAD RECORDS: 9

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 19
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=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	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	10.69701
NNE	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.97899
NE	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14	5.57501
ENE	/	/	1/ 0.05	6/ 0.27	/	/	/	7.0/ 0.32	8.62812
E	/	/	/	/	/	/	/	/	
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	/	/	/	/	/	/	
S	/	/	/	/	/	/	/	/	
SSW	/	/	/	/	/	/	/	/	
SW	/	/	/	5/ 0.23	/	/	/	5.0/ 0.23	9.47140
WSW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.40370
W	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.32816
WNW	/	/	/	/	/	/	/	/	
NW	/	/	/	1/ 0.05	/	/	/	1.0/ 0.05	9.00450
NNW	/	/	/	5/ 0.23	/	/	/	5.0/ 0.23	9.75821
TOTAL	/	/	9/ 0.41	22/ 1.00	/	/	/	31.0/ 1.41	8.48542

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 21
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=B

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	/	/	2/ 0.09	3/ 0.14	/	/	/	5.0/ 0.23	8.67433
NNE	/	/	2/ 0.09	3/ 0.14	/	/	/	5.0/ 0.23	7.60713
NE	/	1/ 0.05	4/ 0.18	5/ 0.23	/	/	/	10.0/ 0.45	7.54043
ENE	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	5.77955
E	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	4.78572
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	3.76855
S	/	/	1/ 0.05	/	1/ 0.05	/	/	2.0/ 0.09	10.30515
SSW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	8.23745
SW	/	/	3/ 0.14	3/ 0.14	/	/	/	6.0/ 0.27	7.39258
WSW	/	/	5/ 0.23	2/ 0.09	/	/	/	7.0/ 0.32	6.66921
W	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.13273
WNW	/	/	/	/	/	/	/	/	
NW	/	/	/	/	/	/	/	/	
NNW	/	/	/	4/ 0.18	/	/	/	4.0/ 0.18	8.71269
TOTAL	/	1/ 0.05	27/ 1.23	24/ 1.09	1/ 0.05	/	/	53.0/ 2.41	7.36899

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 23
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=C

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	/	/	11/ 0.50	8/ 0.36	/	/	/	19.0/ 0.86	7.41248
NNE	/	1/ 0.05	5/ 0.23	5/ 0.23	/	/	/	11.0/ 0.50	7.35519
NE	/	1/ 0.05	2/ 0.09	12/ 0.55	/	/	/	15.0/ 0.68	8.48276
ENE	/	/	4/ 0.18	/	/	/	/	4.0/ 0.18	5.42771
E	/	2/ 0.09	1/ 0.05	/	/	/	/	3.0/ 0.14	3.80746
ESE	/	/	/	/	/	/	/	/	
SE	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.98254
SSE	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.44489
S	/	/	1/ 0.05	/	1/ 0.05	/	/	2.0/ 0.09	9.84659
SSW	/	1/ 0.05	2/ 0.09	/	/	/	/	3.0/ 0.14	4.87466
SW	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	7.18025
WSW	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	6.19643
W	/	/	7/ 0.32	1/ 0.05	/	/	/	8.0/ 0.36	6.59288
WNW	/	/	1/ 0.05	2/ 0.09	/	/	/	3.0/ 0.14	8.88777
NW	/	/	/	4/ 0.18	1/ 0.05	/	/	5.0/ 0.23	11.12889
NNW	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14	6.50325
TOTAL	/	6/ 0.27	47/ 2.14	35/ 1.59	2/ 0.09	/	/	90.0/ 4.09	7.31927

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 25
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=D

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	/	5/ 0.23	36/ 1.64	35/ 1.59	2/ 0.09	/	/	78.0/ 3.55	7.16555
NNE	/	4/ 0.18	107/ 4.87	101/ 4.59	/	/	/	212.0/ 9.64	7.44185
NE	/	7/ 0.32	61/ 2.77	56/ 2.55	/	/	/	124.0/ 5.64	7.16823
ENE	/	6/ 0.27	21/ 0.95	7/ 0.32	/	/	/	34.0/ 1.55	5.61016
E	/	9/ 0.41	12/ 0.55	1/ 0.05	/	/	/	22.0/ 1.00	4.03004
ESE	/	13/ 0.59	7/ 0.32	/	/	/	/	20.0/ 0.91	3.20994
SE	/	7/ 0.32	14/ 0.64	/	/	/	/	21.0/ 0.95	3.95991
SSE	/	4/ 0.18	19/ 0.86	6/ 0.27	1/ 0.05	/	/	30.0/ 1.36	6.09082
S	/	4/ 0.18	20/ 0.91	17/ 0.77	1/ 0.05	/	/	42.0/ 1.91	6.83701
SSW	/	3/ 0.14	40/ 1.82	7/ 0.32	1/ 0.05	/	/	51.0/ 2.32	6.10207
SW	/	3/ 0.14	21/ 0.95	26/ 1.18	/	/	/	50.0/ 2.27	7.23295
WSW	/	3/ 0.14	30/ 1.36	11/ 0.50	/	/	/	44.0/ 2.00	6.32374
W	/	3/ 0.14	24/ 1.09	10/ 0.45	/	/	/	37.0/ 1.68	6.16945
WNW	/	3/ 0.14	23/ 1.05	9/ 0.41	/	/	/	35.0/ 1.59	6.38986
NW	/	5/ 0.23	17/ 0.77	8/ 0.36	1/ 0.05	/	/	31.0/ 1.41	6.20902
NNW	/	/	13/ 0.59	12/ 0.55	3/ 0.14	/	/	28.0/ 1.27	8.61859
TOTAL	/	79/ 3.59	465/21.15	306/13.92	9/ 0.41	/	/	859.0/39.06	6.70419

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 27
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=E

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	0.1/ 0.00	10/ 0.45	21/ 0.95	/	/	/	/	31.1/ 1.41	4.37276
NNE	0.1/ 0.00	11/ 0.50	37/ 1.68	3/ 0.14	/	/	/	51.1/ 2.32	4.81641
NE	0.1/ 0.00	7/ 0.32	17/ 0.77	5/ 0.23	/	/	/	29.1/ 1.32	5.38112
ENE	0.1/ 0.00	8/ 0.36	10/ 0.45	/	/	/	/	18.1/ 0.82	3.69107
E	0.1/ 0.00	8/ 0.36	1/ 0.05	1/ 0.05	/	/	/	10.1/ 0.46	3.33458
ESE	0.0/ 0.00	4/ 0.18	1/ 0.05	6/ 0.23	1/ 0.05	/	/	11.0/ 0.50	7.50981
SE	0.1/ 0.00	8/ 0.36	6/ 0.27	2/ 0.09	2/ 0.09	/	/	18.1/ 0.82	5.52485
SSE	0.1/ 0.00	10/ 0.45	33/ 1.50	7/ 0.32	1/ 0.05	/	/	51.1/ 2.32	5.22342
S	0.1/ 0.00	11/ 0.50	23/ 1.05	18/ 0.82	1/ 0.05	/	/	53.1/ 2.41	6.13049
SSW	0.2/ 0.01	17/ 0.77	26/ 1.18	10/ 0.45	3/ 0.14	/	/	56.2/ 2.56	5.58642
SW	0.2/ 0.01	15/ 0.68	40/ 1.82	14/ 0.64	1/ 0.05	/	/	70.2/ 3.19	5.72674
WSW	0.2/ 0.01	16/ 0.73	44/ 2.00	6/ 0.27	1/ 0.05	/	/	67.2/ 3.06	4.83600
W	0.2/ 0.01	15/ 0.68	28/ 1.27	2/ 0.09	1/ 0.05	/	/	46.2/ 2.10	4.55783
WNW	0.1/ 0.00	8/ 0.36	14/ 0.64	2/ 0.09	/	/	/	24.1/ 1.10	4.23361
NW	0.1/ 0.00	6/ 0.27	5/ 0.23	/	/	/	/	11.1/ 0.50	3.47996
NNW	0.2/ 0.01	20/ 0.91	50/ 2.27	/	/	/	/	70.2/ 3.19	4.42315
TOTAL	2.0/ 0.09	174/ 7.91	356/16.19	75/ 3.41	11/ 0.50	/	/	618.0/28.10	5.04358

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 29
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=F

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	0.1/ 0.00	11/ 0.50	1/ 0.05	/	/	/	/	12.1/ 0.55	2.47437
NNE	0.0/ 0.00	5/ 0.23	1/ 0.05	/	/	/	/	6.0/ 0.27	2.02323
NE	0.0/ 0.00	3/ 0.14	/	/	/	/	/	3.0/ 0.14	2.39008
ENE	0.0/ 0.00	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.55177
E	0.0/ 0.00	1/ 0.05	/	/	/	/	/	1.0/ 0.05	0.98382
ESE	0.0/ 0.00	2/ 0.09	1/ 0.05	/	/	/	/	3.0/ 0.14	2.64021
SE	/	/	/	/	/	/	/	/	
SSE	0.1/ 0.00	11/ 0.50	6/ 0.27	/	/	/	/	17.1/ 0.78	3.04294
S	0.1/ 0.00	19/ 0.86	4/ 0.18	1/ 0.05	/	/	/	24.1/ 1.10	2.92835
SSW	0.1/ 0.00	12/ 0.55	9/ 0.41	/	/	/	/	21.1/ 0.96	3.57643
SW	0.1/ 0.00	13/ 0.59	12/ 0.55	/	/	/	/	25.1/ 1.14	3.46953
WSW	0.1/ 0.00	15/ 0.68	2/ 0.09	/	/	/	/	17.1/ 0.78	2.36034
W	0.1/ 0.00	8/ 0.36	1/ 0.05	/	/	/	/	9.1/ 0.41	2.36656
WNW	0.1/ 0.00	13/ 0.59	2/ 0.09	/	/	/	/	15.1/ 0.69	2.31848
NW	0.1/ 0.00	16/ 0.73	2/ 0.09	/	/	/	/	18.1/ 0.82	2.24652
NNW	0.1/ 0.00	18/ 0.82	15/ 0.68	/	/	/	/	33.1/ 1.51	3.20830
TOTAL	1.0/ 0.05	148/ 6.73	57/ 2.59	1/ 0.05	/	/	/	207.0/ 9.41	2.85877

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 31
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=G

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	2.2/ 0.10	28/ 1.27	3/ 0.14	/	/	/	/	33.2/ 1.51	1.78099
NNE	1.2/ 0.05	15/ 0.68	/	/	/	/	/	16.2/ 0.74	1.48941
NE	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	1.11039
ENE	0.2/ 0.01	3/ 0.14	/	/	/	/	/	3.2/ 0.15	1.12295
E	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	0.89816
ESE	0.3/ 0.01	4/ 0.18	/	/	/	/	/	4.3/ 0.20	0.94135
SE	0.6/ 0.03	8/ 0.36	/	/	/	/	/	8.6/ 0.39	1.28842
SSE	1.4/ 0.06	18/ 0.82	/	/	/	/	/	19.4/ 0.88	1.42037
S	3.6/ 0.16	46/ 2.09	/	/	/	/	/	49.6/ 2.26	1.59689
SSW	1.6/ 0.07	20/ 0.91	/	/	/	/	/	21.6/ 0.98	1.64587
SW	0.5/ 0.02	6/ 0.27	/	/	/	/	/	6.5/ 0.30	1.50394
WSW	0.9/ 0.04	11/ 0.50	3/ 0.14	/	/	/	/	14.9/ 0.68	2.23767
W	0.7/ 0.03	9/ 0.41	/	/	/	/	/	9.7/ 0.44	1.50031
WNW	1.5/ 0.07	19/ 0.86	/	/	/	/	/	20.5/ 0.93	1.52900
NW	2.7/ 0.12	34/ 1.55	1/ 0.05	/	/	/	/	37.7/ 1.71	1.61152
NNW	5.6/ 0.25	71/ 3.23	17/ 0.77	/	/	/	/	93.6/ 4.26	2.45473
TOTAL	23.0/ 1.05	294/13.37	24/ 1.09	/	/	/	/	341.0/15.51	1.83587

NUMBER OF BAD RECORDS: 0

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

ENCLOSURE 3

DIFFUSION ANALYSIS
GROUND LEVEL RELEASE
JULY 1 - DECEMBER 31,1983
H. B. ROBINSON STEAM ELECTRIC PLANT

Description of Attachment

The attached tables provide estimate of relative ground-level concentration (X/Q) and deposition (D/Q) for the period July 1 through December 31, 1983 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 buildings. The computer code used (XOQDOQ) was received from the U. S. Nuclear Regulatory Commission (NRC), Hydrology Meteorology Branch.(1)

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 1000 meters.
5. Calm winds included with joint frequency are 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).

(1) Program for the Meteorological Evaluation of Routine Effluent Release at Nuclear Power Stations, J. F. Sagendorf and J. T. Goll, August 29, 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 3.1E-05 in the SSE sector. Site boundary maximums for previous six-month periods are as follows:

JAN - JUN 1982	2.2E-05	SSE SECTOR
JUL - DEC 1982	4.4E-05	SSE SECTOR
JAN - JUN 1983	4.9E-05	SSE SECTOR

```
PRINTOUT OF INPUT CARDS

    1  1000000000000000000000000000000000000011010000000000001101000000000000000000000000
    2  XOQDOQ - ROBINSON GROUND AND MIXED MODE RELEASES JUL-DEC 83
    3      7    7   10 4375    5    5    2
    4  11.03 101.00   2.26  -8.00
    5   0.0    0.0    0.0    0.0    0.0    0.0    0.0
    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
    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
    6   6.000 12.000  5.000  6.000  6.000 11.000 17.000 13.000  5.000 16.000 14.000  5.000  5.000  5.000  3.000  1.000
    6  12.000 28.000 18.000 13.000  3.000  2.000  1.000  7.000 15.000 10.000 14.000  6.000  2.000  1.000  3.000  5.000
    6   0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0    1.000  1.000  0.0    0.0    0.0    0.0    0.0
    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
    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
    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
    6   0.0    0.0  1.000    0.0  1.000  1.000  1.000  1.000  1.000    0.0    0.0    0.0    0.0    0.0    0.0    0.0
    6  11.000 15.000 11.000 13.000  9.000  8.000 10.000  8.000  4.000  4.000 19.000 15.000  9.000  2.000  7.000  2.000
    6   8.000 11.000 15.000  4.000  1.000    0.0  1.000  6.000  2.000  2.000  8.000  4.000  3.000    0.0    0.0  4.000
    6   0.0    0.0  1.000    0.0    0.0    0.0    0.0    0.0  1.000  1.000    0.0    0.0    0.0    0.0    0.0    0.0
    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
    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
    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
    6   0.0  1.000  1.000    0.0  2.000  1.000  2.000  1.000    0.0  1.000    0.0    0.0  2.000    0.0    0.0    0.0
    6  26.000 12.000 11.000 15.000  8.000  8.000  5.000  8.000  2.000  5.000 15.000 11.000 14.000  8.000  1.000  7.000
    6   9.000 13.000 16.000  5.000  1.000    0.0  1.000  1.000  4.000  5.000  7.000  1.000  2.000  2.000  4.000  1.000
    6   0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0  1.000  1.000    0.0    0.0    0.0    0.0  1.000    0.0
    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
    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
    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
    6  10.000  9.000 13.000 16.000 20.000 16.000 16.000 10.000  9.000  8.000 14.000 15.000  8.000 12.000 10.000  1.000
    6  63.000190.000 98.000 53.000 41.000 20.000 31.000 60.000 63.000 83.000 61.000 49.000 39.000 30.000 25.000 25.000
    6  46.000152.000 82.000  8.000  1.000  1.000  1.000 10.000 29.000 30.000 29.000 11.000 10.000 10.000 10.000 20.000
    6   4.000  1.000    0.0    0.0    0.0    0.0    0.0  1.000  1.000  2.000    0.0    0.0    0.0    0.0  1.000  3.000
    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
    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
    6   0.100  0.100    0.0  0.100  0.100    0.0  0.100  0.100  0.200  0.400  0.300  0.100  0.100  0.100  0.100  0.200
    6  24.000 16.000  9.000 14.000 14.000  6.000 14.000 25.000 39.000 98.000 58.000 29.000 24.000 27.000 16.000 37.000
    6  36.000 45.000 30.000 22.000  6.000  4.000 11.000 46.000 49.000 88.000 77.000 52.000 33.000 19.000 13.000 85.000
    6   1.000  5.000  6.000    0.0  1.000  5.000  2.000  7.000 20.000 12.000 15.000  6.000  3.000  2.000    0.0  1.000
    6   0.0    0.0    0.0    0.0    0.0  1.000  2.000  1.000  1.000  3.000  1.000  1.000  1.000    0.0    0.0    0.0
    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
    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
    6   0.700  0.300  0.300    0.0  0.100  0.100    0.0  0.600  1.300  1.500  1.500  0.900  0.600  0.700  0.900  1.500
    6  22.000 11.000  8.000  1.000  2.000  2.000    0.0 20.000 42.000 47.000 47.000 29.000 18.000 22.000 29.000 48.000
    6   2.000  2.000  1.000  1.000    0.0  1.000    0.0 11.000  7.000 13.000 17.000  5.000  4.000  4.000  4.000 37.000
    6   0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0  1.000    0.0    0.0  1.000    0.0    0.0    0.0    0.0
    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
    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
    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
    6   2.700  1.300  0.100  0.200  0.200  0.500  0.700  1.600  4.200  2.000  0.700  1.300  0.800  1.800  3.500  6.600
    6  35.000 16.000  1.000  3.000  2.000  6.000  9.000 20.000 53.000 25.000  9.000 16.000 10.000 23.000 45.000 84.000
    6   3.000    0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0  1.000  5.000    0.0  3.000  1.000 22.000
    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
    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
    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
    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
    7   200.  0.750  3.500  7.500 12.500 18.500 25.000 26.000    0.0    0.0    0.0    0.0    0.0    0.0    0.0
   10   402.   402.   402.   402.   402.   402.   402.   402.   402.   402.   402.   402.   402.   402.   402.
   11    69.    71.    68.    68.    71.    73.    73.    70.    69.    71.    69.    73.    74.    72.    69.    69.
   12   451.   805.   579.   579.   805.   885.   448.   418.   418.   207.   207.   207.   418.   805.   418.   418.
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11      70.   73.   69.   69.   73.   78.   73.   71    70.   76.   72.   84.   74.   76.   69.   69.
10    1207.  1207.  805.  966.  966.  1207. 1207. 1207. 1207. 2012. 1625. 1448. 1207.  966.  483.  483.
11      72.   76.   70.   71.   74.   81.   82.   75.   79.   82.   73.   87.   86.   78.   69.   69.
10    2012.  2012. 1207. 1207. 1207. 1448. 2012. 2012. 2012. 2253. 2012. 2012. 1448. 1207. 1207. 1207.
11      74.   81.   72.   73.   75.   84.   91.   79.   74.   83.   74.  104.   89.   80.   69.   69.
10    2816.  2816. 2012. 2012. 2012. 2012. 2816. 2816. 2816. 2655. 2816. 2816. 2012. 2012. 2012. 2012.
11      76.   87.   77.   77.   80.   88.   92.   83.   77.   86.   76.  114.   98.   88.   69.   69.
10    3621.  3347. 2816. 2816. 2816. 2816. 3621. 3042. 3122. 2816. 3621. 3541. 2816. 2816. 2816. 2816.
11      79.   90.   81.   82.   85.   89.  102.   84.   78.   87.   78.  115.  109.   91.   69.   69.
10    4426.  3621. 3621. 3621. 3621. 3621. 4426. 3621. 3621. 3621. 4426. 3621. 3621. 3621. 3621. 3621.
11      81.   92.   86.   87.   88.   90.  111.   87.   79.   92.   81.  122.  120.   91.   69.   69.
10    5230.  4426. 4426. 4426. 4426. 4426. 5230. 4426. 4426. 4426. 5230. 4426. 4426. 4426. 4426. 4426.
11      83.   95.   91.   91.   88.   90.  121.   91.   82.   99.   83.  122.  120.   91.   69.   69.
10    6035.  5230. 5230. 5230. 5230. 5230. 6035. 5230. 5230. 5230. 6035. 5230. 5230. 5230. 5230. 5230.
11      85.   95.   95.   91.   88.   91.  127.   96.   84.  109.   85.  122.  120.   91.   69.   69.
10    7644.  7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644.
11      87.   95.   95.   91.   88.  122.  133.   96.   91.  118.  101.  122.  120.   91.   69.   69.
12      16    2    14    16    16
13    SITE BOUNDARY
14        1 0.28    2 0.29    3 0.36    4 0.36    5 0.50    6 0.55    7 1.23    8 1.89
 9 1.94   10 1.26   11 1.01   12 0.86   13 0.61   14 0.50   15 0.29   16 0.26
13    MILK COW
14       11 1.30   13 4.20
13    MEAT ANIMAL
14        1 2.32    2 2.08    3 2.27    4 2.69    5 3.97    6 4.07    7 1.60    8 2.84
 9 2.93   10 1.65   11 1.16   12 2.41   13 3.12   14 1.99
13    RESIDENT
14        1 0.30    2 0.30    3 0.40    4 0.40    5 0.60    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
13    GARDEN
14        1 0.40    2 0.50    3 0.50    4 0.60    5 0.60    6 0.90    7 1.30    8 3.00
 9 2.90   10 1.40   11 1.30   12 2.20   13 2.80   14 0.60   15 0.30   16 0.30
15    EXIT ONE GROUND LEVEL RELEASE JUL-DEC 83
16      0.0    0.0    0.0   59.000 1370.0   11.0  0.0
17    A  0      0      0
15    EXIT TWO MIXED-MODE RELEASE    JUL-DEC 83
16     20.100  1.400 60.700 59.000 1370.0   11.0  0.0
17    B  0      0      0
```

XOQDOQ - ROBINSON GROUND AND MIXED MODE RELEASES JUL-DEC 83

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	0.0	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= 3,J= 1	0.14	0.27	0.11	0.14	0.14	0.25	0.39	0.30	0.11	0.37	0.32	0.11	0.11	0.11	0.07	0.02
I= 4,J= 1	0.27	0.64	0.41	0.30	0.07	0.05	0.02	0.16	0.34	0.23	0.32	0.14	0.05	0.02	0.07	0.11
I= 5,J= 1	0.0	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
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	0.0	0.02	0.0	0.02	0.02	0.02	0.02	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 3,J= 2	0.25	0.34	0.25	0.30	0.21	0.18	0.23	0.18	0.09	0.09	0.43	0.34	0.21	0.05	0.16	0.05
I= 4,J= 2	0.18	0.25	0.34	0.09	0.02	0.0	0.02	0.14	0.05	0.05	0.18	0.09	0.07	0.0	0.0	0.09
I= 5,J= 2	0.0	0.0	0.02	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= 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	0.0	0.02	0.02	0.0	0.05	0.02	0.05	0.02	0.0	0.02	0.0	0.0	0.05	0.0	0.0	0.0
I= 3,J= 3	0.59	0.27	0.25	0.34	0.18	0.18	0.11	0.18	0.05	0.11	0.34	0.25	0.32	0.18	0.02	0.16
I= 4,J= 3	0.21	0.30	0.37	0.11	0.02	0.0	0.02	0.02	0.09	0.11	0.16	0.02	0.05	0.05	0.09	0.02
I= 5,J= 3	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	0.02	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	0.23	0.21	0.30	0.37	0.46	0.37	0.37	0.23	0.21	0.18	0.32	0.34	0.18	0.27	0.23	0.02
I= 3,J= 4	1.44	4.34	2.24	1.21	0.94	0.46	0.71	1.37	1.44	1.90	1.39	1.12	0.89	0.69	0.57	0.57
I= 4,J= 4	1.05	3.47	1.87	0.18	0.02	0.02	0.02	0.23	0.66	0.69	0.66	0.25	0.23	0.23	0.23	0.46
I= 5,J= 4	0.09	0.02	0.0	0.0	0.0	0.0	0.0	0.02	0.02	0.05	0.0	0.0	0.0	0.0	0.02	0.07
I= 6,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= 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	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
I= 2,J= 5	0.55	0.37	0.21	0.32	0.32	0.14	0.32	0.57	0.89	2.24	1.33	0.66	0.55	0.62	0.37	0.85
I= 3,J= 5	0.82	1.03	0.69	0.50	0.14	0.09	0.25	1.05	1.12	2.01	1.76	1.19	0.75	0.43	0.30	1.94
I= 4,J= 5	0.02	0.11	0.14	0.0	0.02	0.11	0.05	0.16	0.46	0.27	0.34	0.14	0.07	0.05	0.0	0.02
I= 5,J= 5	0.0	0.0	0.0	0.0	0.0	0.02	0.05	0.02	0.02	0.07	0.02	0.02	0.02	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	0.01	0.0	0.00	0.00	0.0	0.01	0.03	0.03	0.03	0.02	0.01	0.02	0.02	0.03
I= 2,J= 6	0.50	0.25	0.18	0.02	0.05	0.05	0.0	0.46	0.96	1.07	1.07	0.66	0.41	0.50	0.66	1.10
I= 3,J= 6	0.05	0.05	0.02	0.02	0.0	0.02	0.0	0.25	0.16	0.30	0.39	0.11	0.09	0.09	0.09	0.85
I= 4,J= 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.02	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	0.06	0.03	0.00	0.00	0.00	0.01	0.02	0.04	0.10	0.05	0.02	0.03	0.02	0.04	0.08	0.15
I= 2,J= 7	0.80	0.37	0.02	0.07	0.05	0.14	0.21	0.46	1.21	0.57	0.21	0.37	0.23	0.53	1.03	1.92
I= 3,J= 7	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.11	0.0	0.07	0.02	0.50
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	7.35	12.36	7.48	3.98	2.71	2.14	2.85	5.90	8.11	10.49	9.36	6.02	4.31	3.95	4.06	8.94

TOTAL HOURS CONSIDERED ARE 4375

WIND MEASURED AT 11.0 METERS.

THE MAXIMUM WIND SPEED (METERS/SEC) IN EACH CLASS IS: 0.335 1.565 3.353 5.588 8.270 11.176 11.623

THE 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.	68.	68.	71.	73.	73.	70.	69.	71.	69.	73.	74.	72.	69.	69.
DISTANCE	451.	805.	579.	579.	805.	885.	418.	418.	418.	207.	207.	207.	418.	805.	418.	418.
ELEVATION	70.	73.	69.	69.	73.	78.	73.	71.	70.	76.	72.	84.	74.	76.	69.	69.
DISTANCE	1207.	1207.	805.	966.	966.	1207.	1207.	1207.	1207.	2012.	1625.	1448.	1207.	966.	483.	483.
ELEVATION	72.	76.	70.	71.	74.	81.	82.	75.	79.	82.	73.	87.	86.	78.	69.	69.
DISTANCE	2012.	2012.	1207.	1207.	1207.	1448.	2012.	2012.	2012.	2253.	2012.	2012.	1448.	1207.	1207.	1207.
ELEVATION	74.	81.	72.	73.	75.	84.	91.	79.	74.	83.	74.	104.	89.	80.	69.	69.
DISTANCE	2816.	2816.	2012.	2012.	2012.	2012.	2816.	2816.	2816.	2655.	2816.	2816.	2012.	2012.	2012.	2012.
ELEVATION	76.	87.	77.	77.	80.	88.	92.	83.	77.	86.	76.	114.	98.	88.	69.	69.
DISTANCE	3621.	3347.	2816.	2816.	2816.	2816.	3621.	3042.	3122.	2816.	3621.	3541.	2816.	2816.	2816.	2816.
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.	88.	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.	96.	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 ONE GROUND LEVEL RELEASE JUL-DEC 83
NO DECAY, UNDEPLETED

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	1.614E-05	4.916E-06	2.492E-06	1.602E-06	8.801E-07	5.956E-07	4.445E-07	3.502E-07	2.864E-07	2.407E-07	2.066E-07
SSW	1.323E-05	4.330E-06	2.286E-06	1.478E-06	8.062E-07	5.329E-07	3.886E-07	3.005E-07	2.420E-07	2.007E-07	1.703E-07
SW	6.368E-06	2.150E-06	1.159E-06	7.560E-07	4.137E-07	2.700E-07	1.941E-07	1.483E-07	1.181E-07	9.709E-08	8.170E-08
WSW	4.469E-06	1.481E-06	8.027E-07	5.203E-07	2.829E-07	1.850E-07	1.335E-07	1.023E-07	8.181E-08	6.742E-08	5.688E-08
W	3.837E-06	1.282E-06	6.936E-07	4.502E-07	2.452E-07	1.603E-07	1.156E-07	8.857E-08	7.076E-08	5.829E-08	4.915E-08
WNW	3.679E-06	1.167E-06	6.045E-07	3.875E-07	2.101E-07	1.395E-07	1.024E-07	7.962E-08	6.441E-08	5.364E-08	4.568E-08
NW	4.983E-06	1.574E-06	8.258E-07	5.292E-07	2.866E-07	1.905E-07	1.399E-07	1.089E-07	8.817E-08	7.348E-08	6.260E-08
NNW	1.235E-05	3.790E-06	1.956E-06	1.273E-06	7.078E-07	4.778E-07	3.548E-07	2.784E-07	2.268E-07	1.901E-07	1.627E-07
N	2.375E-05	7.139E-06	3.608E-06	2.335E-06	1.296E-06	8.838E-07	6.631E-07	5.245E-07	4.303E-07	3.626E-07	3.119E-07
NNE	2.319E-05	7.157E-06	3.789E-06	2.500E-06	1.407E-06	9.486E-07	7.018E-07	5.489E-07	4.461E-07	3.729E-07	3.185E-07
NE	1.696E-05	5.262E-06	2.783E-06	1.848E-06	1.047E-06	7.035E-07	5.181E-07	4.037E-07	3.270E-07	2.726E-07	2.323E-07
ENE	1.303E-05	4.013E-06	2.081E-06	1.362E-06	7.618E-07	5.140E-07	3.809E-07	2.984E-07	2.428E-07	2.032E-07	1.738E-07
E	8.652E-06	2.682E-06	1.401E-06	9.173E-07	5.120E-07	3.440E-07	2.540E-07	1.984E-07	1.610E-07	1.345E-07	1.148E-07
ESE	1.192E-05	3.620E-06	1.844E-06	1.197E-06	6.653E-07	4.519E-07	3.377E-07	2.662E-07	2.179E-07	1.832E-07	1.573E-07
SE	1.665E-05	4.937E-06	2.439E-06	1.565E-06	8.640E-07	5.928E-07	4.479E-07	3.563E-07	2.937E-07	2.485E-07	2.144E-07
SSE	3.352E-05	9.890E-06	4.913E-06	3.161E-06	1.751E-06	1.203E-06	9.097E-07	7.241E-07	5.971E-07	5.053E-07	4.363E-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	1.803E-07	1.071E-07	7.419E-08	4.446E-08	3.104E-08	2.352E-08	1.878E-08	1.553E-08	1.318E-08	1.141E-08	1.003E-08
SSW	1.471E-07	8.405E-08	5.673E-08	3.280E-08	2.234E-08	1.663E-08	1.308E-08	1.069E-08	8.980E-09	7.706E-09	6.723E-09
SW	7.007E-08	3.897E-08	2.579E-08	1.450E-08	9.689E-09	7.102E-09	5.517E-09	4.460E-09	3.712E-09	3.159E-09	2.736E-09
WSW	4.890E-08	2.746E-08	1.831E-08	1.041E-08	7.014E-09	5.177E-09	4.044E-09	3.286E-09	2.747E-09	2.346E-09	2.039E-09
W	4.223E-08	2.367E-08	1.575E-08	8.930E-09	6.006E-09	4.424E-09	3.452E-09	2.801E-09	2.339E-09	1.996E-09	1.733E-09
WNW	3.959E-08	2.296E-08	1.566E-08	9.198E-09	6.339E-09	4.760E-09	3.772E-09	3.101E-09	2.620E-09	2.258E-09	1.978E-09
NW	5.429E-08	3.154E-08	2.154E-08	1.266E-08	8.731E-09	6.557E-09	5.197E-09	4.274E-09	3.610E-09	3.113E-09	2.727E-09
NNW	1.416E-07	8.331E-08	5.735E-08	3.403E-08	2.358E-08	1.777E-08	1.412E-08	1.164E-08	9.813E-09	8.497E-09	7.451E-09
N	2.726E-07	1.629E-07	1.133E-07	6.813E-08	4.763E-08	3.613E-08	2.886E-08	2.388E-08	2.028E-08	1.756E-08	1.544E-08
NNE	2.766E-07	1.613E-07	1.104E-07	6.489E-08	4.465E-08	3.347E-08	2.647E-08	2.173E-08	1.832E-08	1.576E-08	1.379E-08
NE	2.014E-07	1.166E-07	7.933E-08	4.631E-08	3.172E-08	2.368E-08	1.867E-08	1.529E-08	1.286E-08	1.104E-08	9.641E-09
ENE	1.511E-07	8.857E-08	6.080E-08	3.594E-08	2.484E-08	1.868E-08	1.481E-08	1.219E-08	1.029E-08	8.876E-09	7.775E-09
E	9.967E-08	5.809E-08	3.972E-08	2.337E-08	1.611E-08	1.209E-08	9.576E-09	7.867E-09	6.639E-09	5.719E-09	5.006E-09
ESE	1.372E-07	8.145E-08	5.641E-08	3.374E-08	2.351E-08	1.779E-08	1.418E-08	1.171E-08	9.932E-09	8.590E-09	7.546E-09
SE	1.880E-07	1.136E-07	7.956E-08	4.834E-08	3.402E-08	2.594E-08	2.080E-08	1.727E-08	1.470E-08	1.276E-08	1.125E-08
SSE	3.826E-07	2.312E-07	1.620E-07	9.845E-08	6.929E-08	5.283E-08	4.236E-08	3.517E-08	2.994E-08	2.599E-08	2.291E-08

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

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.635E-06	9.142E-07	4.471E-07	2.872E-07	2.069E-07	1.087E-07	4.510E-08	2.363E-08	1.556E-08	1.143E-08
SSW	2.381E-06	8.340E-07	3.919E-07	2.430E-07	1.707E-07	8.591E-08	3.347E-08	1.673E-08	1.072E-08	7.719E-09
SW	1.200E-06	4.259E-07	1.960E-07	1.187E-07	8.195E-08	4.002E-08	1.487E-08	7.158E-09	4.477E-09	3.166E-09
WSW	8.279E-07	2.921E-07	1.348E-07	8.220E-08	5.705E-08	2.816E-08	1.065E-08	5.214E-09	3.297E-09	2.351E-09
W	7.162E-07	2.530E-07	1.167E-07	7.110E-08	4.930E-08	2.427E-08	9.146E-09	4.457E-09	2.811E-09	2.000E-09
WNW	6.330E-07	2.182E-07	1.032E-07	6.465E-08	4.578E-08	2.341E-08	9.364E-09	4.786E-09	3.109E-09	2.262E-09
NW	8.604E-07	2.978E-07	1.410E-07	8.850E-08	6.275E-08	3.215E-08	1.289E-08	6.593E-09	4.285E-09	3.117E-09
NNW	2.060E-06	7.313E-07	3.570E-07	2.276E-07	1.630E-07	8.473E-08	3.457E-08	1.786E-08	1.166E-08	8.508E-09
N	3.827E-06	1.344E-06	6.665E-07	4.314E-07	3.124E-07	1.652E-07	6.905E-08	3.629E-08	2.393E-08	1.758E-08
NNE	3.965E-06	1.446E-06	7.064E-07	4.476E-07	3.191E-07	1.643E-07	6.600E-08	3.365E-08	2.178E-08	1.579E-08
NE	2.918E-06	1.072E-06	5.218E-07	3.282E-07	2.328E-07	1.189E-07	4.716E-08	2.382E-08	1.533E-08	1.106E-08
ESE	2.191E-06	7.851E-07	3.834E-07	2.436E-07	1.741E-07	9.013E-08	3.653E-08	1.877E-08	1.222E-08	8.889E-09

	1.471E-06	5.274E-07	2.557E-07	1.616E-07	1.150E-	5.917E-08	2.378E-08	1.216E-08	7.888E-09	5.727E
ES	1.951E-06	6.886E-07	3.396E-07	2.185E-07	1.575E-	8.271E-08	3.423E-08	1.787E-08	1.174E-08	8.601E
SE	2.606E-06	8.993E-07	4.499E-07	2.944E-07	2.147E-07	1.150E-07	4.891E-08	2.604E-08	1.730E-08	1.278E-08
SSE	5.240E-06	1.821E-06	9.137E-07	5.984E-07	4.368E-07	2.341E-07	9.962E-08	5.304E-08	3.523E-08	2.602E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS				WIND SPEED (METERS/SEC) 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		

EXIT ONE GROUND LEVEL RELEASE JUL-DEC 83
2.260 DAY DECAY, UNDEPLETED

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	1.609E-05	4.891E-06	2.474E-06	1.587E-06	8.678E-07	5.844E-07	4.339E-07	3.400E-07	2.767E-07	2.314E-07	1.975E-07
SSW	1.320E-05	4.316E-06	2.275E-06	1.469E-06	7.989E-07	5.263E-07	3.825E-07	2.947E-07	2.365E-07	1.954E-07	1.652E-07
SW	6.360E-06	2.145E-06	1.156E-06	7.527E-07	4.110E-07	2.675E-07	1.918E-07	1.462E-07	1.162E-07	9.526E-08	7.995E-08
WSW	4.462E-06	1.477E-06	7.995E-07	5.175E-07	2.806E-07	1.830E-07	1.317E-07	1.006E-07	8.021E-08	6.591E-08	5.543E-08
W	3.830E-06	1.278E-06	6.902E-07	4.473E-07	2.428E-07	1.582E-07	1.137E-07	8.679E-08	6.908E-08	5.670E-08	4.764E-08
WNW	3.671E-06	1.162E-06	6.007E-07	3.843E-07	2.075E-07	1.372E-07	1.002E-07	7.756E-08	6.245E-08	5.176E-08	4.387E-08
NW	4.971E-06	1.568E-06	8.207E-07	5.249E-07	2.831E-07	1.873E-07	1.370E-07	1.061E-07	8.554E-08	7.096E-08	6.018E-08
NNW	1.232E-05	3.773E-06	1.943E-06	1.263E-06	6.989E-07	4.698E-07	3.472E-07	2.712E-07	2.200E-07	1.835E-07	1.563E-07
N	2.368E-05	7.101E-06	3.580E-06	2.311E-06	1.277E-06	8.660E-07	6.463E-07	5.085E-07	4.149E-07	3.478E-07	2.975E-07
NNE	2.314E-05	7.127E-06	3.767E-06	2.480E-06	1.390E-06	9.335E-07	6.877E-07	5.356E-07	4.335E-07	3.609E-07	3.068E-07
NE	1.692E-05	5.243E-06	2.768E-06	1.834E-06	1.035E-06	6.934E-07	5.087E-07	3.948E-07	3.187E-07	2.646E-07	2.246E-07
ENE	1.300E-05	3.996E-06	2.068E-06	1.351E-06	7.526E-07	5.056E-07	3.731E-07	2.910E-07	2.357E-07	1.964E-07	1.672E-07
E	8.633E-06	2.671E-06	1.392E-06	9.100E-07	5.059E-07	3.385E-07	2.488E-07	1.935E-07	1.564E-07	1.301E-07	1.105E-07
ESE	1.189E-05	3.602E-06	1.831E-06	1.186E-06	6.558E-07	4.432E-07	3.295E-07	2.585E-07	2.104E-07	1.760E-07	1.503E-07
SE	1.660E-05	4.908E-06	2.418E-06	1.547E-06	8.494E-07	5.794E-07	4.352E-07	3.442E-07	2.820E-07	2.372E-07	2.035E-07
SSE	3.343E-05	9.836E-06	4.874E-06	3.128E-06	1.724E-06	1.178E-06	8.860E-07	7.014E-07	5.753E-07	4.842E-07	4.158E-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	1.715E-07	9.926E-08	6.707E-08	3.826E-08	2.549E-08	1.847E-08	1.412E-08	1.120E-08	9.140E-09	7.615E-09	6.453E-09
SSW	1.421E-07	7.973E-08	5.282E-08	2.943E-08	1.934E-08	1.390E-08	1.057E-08	8.359E-09	6.804E-09	5.662E-09	4.795E-09
SW	6.839E-08	3.756E-08	2.453E-08	1.344E-08	8.762E-09	6.266E-09	4.752E-09	3.753E-09	3.053E-09	2.540E-09	2.152E-09
WSW	4.751E-08	2.628E-08	1.726E-08	9.519E-09	6.230E-09	4.467E-09	3.393E-09	2.682E-09	2.182E-09	1.815E-09	1.537E-09
W	4.078E-08	2.244E-08	1.466E-08	8.014E-09	5.201E-09	3.701E-09	2.791E-09	2.191E-09	1.771E-09	1.465E-09	1.233E-09
WNW	3.784E-08	2.143E-08	1.428E-08	8.004E-09	5.276E-09	3.795E-09	2.886E-09	2.280E-09	1.853E-09	1.540E-09	1.301E-09
NW	5.195E-08	2.949E-08	1.968E-08	1.106E-08	7.297E-09	5.255E-09	3.999E-09	3.162E-09	2.572E-09	2.138E-09	1.808E-09
NNW	1.355E-07	7.788E-08	5.241E-08	2.975E-08	1.976E-08	1.429E-08	1.092E-08	8.661E-09	7.064E-09	5.885E-09	4.988E-09
N	2.587E-07	1.505E-07	1.020E-07	5.831E-08	3.883E-08	2.812E-08	2.149E-08	1.704E-08	1.388E-08	1.156E-08	9.783E-09
NNE	2.654E-07	1.515E-07	1.015E-07	5.727E-08	3.787E-08	2.731E-08	2.081E-08	1.647E-08	1.341E-08	1.115E-08	9.437E-09
NE	1.940E-07	1.102E-07	7.359E-08	4.141E-08	2.737E-08	1.975E-08	1.506E-08	1.194E-08	9.729E-09	8.103E-09	6.865E-09
ENE	1.448E-07	8.302E-08	5.578E-08	3.161E-08	2.097E-08	1.517E-08	1.158E-08	9.189E-09	7.496E-09	6.246E-09	5.294E-09
E	9.553E-08	5.447E-08	3.645E-08	2.056E-08	1.361E-08	9.819E-09	7.486E-09	5.929E-09	4.829E-09	4.019E-09	3.402E-09
ESE	1.305E-07	7.554E-08	5.102E-08	2.907E-08	1.933E-08	1.399E-08	1.068E-08	8.467E-09	6.899E-09	5.742E-09	4.860E-09
SE	1.774E-07	1.041E-07	7.090E-08	4.078E-08	2.724E-08	1.976E-08	1.511E-08	1.199E-08	9.770E-09	8.132E-09	6.883E-09
SSE	3.627E-07	2.134E-07	1.457E-07	8.423E-08	5.651E-08	4.117E-08	3.161E-08	2.518E-08	2.060E-08	1.721E-08	1.462E-08

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

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES									
S	2.617E-06	9.017E-07	4.365E-07	2.775E-07	1.979E-07	1.010E-07	3.899E-08	1.860E-08	1.125E-08	7.636E-09
SSW	2.371E-06	8.267E-07	3.857E-07	2.375E-07	1.656E-07	8.163E-08	3.014E-08	1.402E-08	8.398E-09	5.680E-09
SW	1.196E-06	4.232E-07	1.938E-07	1.168E-07	8.020E-08	3.862E-08	1.383E-08	6.326E-09	3.772E-09	2.548E-09
WSW	8.247E-07	2.899E-07	1.329E-07	8.060E-08	5.560E-08	2.699E-08	9.776E-09	4.507E-09	2.694E-09	1.821E-09
W	7.129E-07	2.506E-07	1.148E-07	6.942E-08	4.778E-08	2.306E-08	8.240E-09	3.797E-09	2.202E-09	1.470E-09
WNW	6.292E-07	2.156E-07	1.010E-07	6.269E-08	4.398E-08	2.190E-08	8.186E-09	3.826E-09	2.291E-09	1.544E-09
NW	8.552E-07	2.943E-07	1.381E-07	8.587E-08	6.033E-08	3.012E-08	1.130E-08	5.297E-09	3.176E-09	2.144E-09
NNW	2.047E-06	7.223E-07	3.495E-07	2.207E-07	1.566E-07	7.935E-08	3.035E-08	1.440E-08	8.697E-09	5.902E-09
N	3.798E-06	1.324E-06	6.497E-07	4.161E-07	2.981E-07	1.530E-07	5.935E-08	2.832E-08	1.711E-08	1.159E-08
NNE	3.942E-06	1.429E-06	6.924E-07	4.350E-07	3.075E-07	1.546E-07	5.847E-08	2.753E-08	1.655E-08	1.119E-08
NE	2.903E-06	1.061E-06	5.124E-07	3.198E-07	2.251E-07	1.125E-07	4.232E-08	1.991E-08	1.199E-08	8.126E-09
ENE	2.178E-06	7.758E-07	3.756E-07	2.365E-07	1.676E-07	8.464E-08	3.225E-08	1.528E-08	9.228E-09	6.264E-09

	1.462E-06	5.213E-07	2.506E-07	1.570E-07	1.108E-	5.559E-08	2.100E-08	9.896E-09	5.955E-09	4.031E-
ESE	1.938E-06	6.790E-07	3.314E-07	2.111E-07	1.506E-0	7.686E-08	2.962E-08	1.409E-08	8.502E-09	5.758E-
SE	2.585E-06	8.845E-07	4.372E-07	2.827E-07	2.038E-07	1.056E-07	4.146E-08	1.990E-08	1.203E-08	8.155E-09
SSE	5.200E-06	1.793E-06	8.900E-07	5.766E-07	4.164E-07	2.165E-07	8.558E-08	4.144E-08	2.527E-08	1.726E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS				WIND SPEED (METERS/SEC) 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		

EXIT ONE GROUND LEVEL RELEASE JUL-DEC 83
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	1.526E-05	4.483E-06	2.216E-06	1.399E-06	7.444E-07	4.905E-07	3.576E-07	2.758E-07	2.213E-07	1.827E-07	1.542E-07
SSW	1.251E-05	3.950E-06	2.034E-06	1.292E-06	6.829E-07	4.397E-07	3.134E-07	2.374E-07	1.876E-07	1.529E-07	1.276E-07
SW	6.025E-06	1.962E-06	1.032E-06	6.609E-07	3.507E-07	2.230E-07	1.567E-07	1.173E-07	9.175E-08	7.413E-08	6.139E-08
WSW	4.228E-06	1.351E-06	7.145E-07	4.548E-07	2.397E-07	1.527E-07	1.077E-07	8.091E-08	6.348E-08	5.142E-08	4.269E-08
W	3.629E-06	1.170E-06	6.172E-07	3.934E-07	2.076E-07	1.322E-07	9.320E-08	6.995E-08	5.484E-08	4.439E-08	3.683E-08
WNW	3.479E-06	1.064E-06	5.377E-07	3.384E-07	1.778E-07	1.150E-07	8.245E-08	6.277E-08	4.982E-08	4.076E-08	3.414E-08
NW	4.713E-06	1.436E-06	7.346E-07	4.622E-07	2.425E-07	1.570E-07	1.127E-07	8.587E-08	6.820E-08	5.585E-08	4.680E-08
NNW	1.168E-05	3.456E-06	1.740E-06	1.112E-06	5.990E-07	3.938E-07	2.856E-07	2.195E-07	1.755E-07	1.444E-07	1.216E-07
N	2.246E-05	6.509E-06	3.208E-06	2.038E-06	1.096E-06	7.276E-07	5.332E-07	4.129E-07	3.323E-07	2.750E-07	2.326E-07
NNE	2.193E-05	6.528E-06	3.371E-06	2.183E-06	1.191E-06	7.819E-07	5.652E-07	4.329E-07	3.452E-07	2.835E-07	2.382E-07
NE	1.604E-05	4.801E-06	2.477E-06	1.614E-06	8.861E-07	5.801E-07	4.175E-07	3.186E-07	2.533E-07	2.075E-07	1.739E-07
ENE	1.232E-05	3.660E-06	1.851E-06	1.190E-06	6.447E-07	4.236E-07	3.067E-07	2.353E-07	1.879E-07	1.545E-07	1.299E-07
E	8.183E-06	2.446E-06	1.246E-06	8.011E-07	4.333E-07	2.835E-07	2.045E-07	1.564E-07	1.246E-07	1.023E-07	8.585E-08
ESE	1.128E-05	3.301E-06	1.640E-06	1.045E-06	5.627E-07	3.722E-07	2.716E-07	2.097E-07	1.683E-07	1.390E-07	1.174E-07
SE	1.574E-05	4.501E-06	2.169E-06	1.366E-06	7.302E-07	4.877E-07	3.599E-07	2.802E-07	2.265E-07	1.882E-07	1.597E-07
SSE	3.170E-05	9.017E-06	4.368E-06	2.759E-06	1.480E-06	9.902E-07	7.314E-07	5.699E-07	4.610E-07	3.832E-07	3.253E-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	1.325E-07	7.383E-08	4.838E-08	2.643E-08	1.706E-08	1.207E-08	9.047E-09	7.057E-09	5.670E-09	4.659E-09	3.897E-09
SSW	1.085E-07	5.834E-08	3.732E-08	1.974E-08	1.248E-08	8.698E-09	6.445E-09	4.983E-09	3.974E-09	3.246E-09	2.702E-09
SW	5.187E-08	2.718E-08	1.708E-08	8.817E-09	5.491E-09	3.783E-09	2.779E-09	2.134E-09	1.693E-09	1.376E-09	1.141E-09
WSW	3.615E-08	1.912E-08	1.209E-08	6.304E-09	3.954E-09	2.740E-09	2.022E-09	1.558E-09	1.240E-09	1.011E-09	8.398E-10
W	3.117E-08	1.643E-08	1.036E-08	5.378E-09	3.359E-09	2.319E-09	1.705E-09	1.310E-09	1.039E-09	8.444E-10	6.997E-10
WNW	2.913E-08	1.587E-08	1.024E-08	5.486E-09	3.501E-09	2.455E-09	1.828E-09	1.419E-09	1.135E-09	9.292E-10	7.748E-10
NW	3.996E-08	2.180E-08	1.409E-08	7.561E-09	4.828E-09	3.388E-09	2.524E-09	1.959E-09	1.568E-09	1.284E-09	1.071E-09
NNW	1.042E-07	5.759E-08	3.752E-08	2.033E-08	1.305E-08	9.191E-09	6.866E-09	5.343E-09	4.284E-09	3.514E-09	2.936E-09
N	2.002E-07	1.122E-07	7.378E-08	4.043E-08	2.613E-08	1.849E-08	1.386E-08	1.082E-08	8.689E-09	7.138E-09	5.970E-09
NNE	2.037E-07	1.117E-07	7.235E-08	3.887E-08	2.481E-08	1.740E-08	1.295E-08	1.005E-08	8.039E-09	6.581E-09	5.488E-09
NE	1.485E-07	8.086E-08	5.214E-08	2.786E-08	1.772E-08	1.240E-08	9.215E-09	7.142E-09	5.708E-09	4.670E-09	3.893E-09
ENE	1.113E-07	6.128E-08	3.983E-08	2.151E-08	1.378E-08	9.691E-09	7.232E-09	5.623E-09	4.505E-09	3.694E-09	3.085E-09
E	7.340E-08	4.019E-08	2.602E-08	1.399E-08	8.938E-09	6.274E-09	4.675E-09	3.630E-09	2.905E-09	2.380E-09	1.985E-09
ESE	1.008E-07	5.617E-08	3.679E-08	2.007E-08	1.293E-08	9.137E-09	6.840E-09	5.331E-09	4.279E-09	3.513E-09	2.937E-09
SE	1.378E-07	7.805E-08	5.167E-08	2.856E-08	1.856E-08	1.319E-08	9.915E-09	7.753E-09	6.239E-09	5.134E-09	4.298E-09
SSE	2.808E-07	1.592E-07	1.055E-07	5.841E-08	3.802E-08	2.704E-08	2.036E-08	1.594E-08	1.284E-08	1.058E-08	8.867E-09

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

SEGMENT BOUNDARIES IN MILES

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.356E-06	7.770E-07	3.603E-07	2.222E-07	1.546E-07	7.555E-08	2.714E-08	1.219E-08	7.097E-09	4.676E-09
SSW	2.130E-06	7.101E-07	3.167E-07	1.886E-07	1.280E-07	6.015E-08	2.042E-08	8.806E-09	5.017E-09	3.260E-09
SW	1.074E-06	3.629E-07	1.586E-07	9.233E-08	6.164E-08	2.818E-08	9.174E-09	3.837E-09	2.150E-09	1.383E-09
WSW	7.405E-07	2.488E-07	1.090E-07	6.386E-08	4.286E-08	1.978E-08	6.545E-09	2.776E-09	1.569E-09	1.015E-09
W	6.405E-07	2.154E-07	9.431E-08	5.518E-08	3.697E-08	1.701E-08	5.588E-09	2.351E-09	1.319E-09	8.484E-10
WNW	5.662E-07	1.856E-07	8.325E-08	5.007E-08	3.425E-08	1.631E-08	5.660E-09	2.483E-09	1.428E-09	9.330E-10
NW	7.694E-07	2.533E-07	1.138E-07	6.854E-08	4.695E-08	2.241E-08	7.797E-09	3.426E-09	1.972E-09	1.290E-09
NNW	1.842E-06	6.217E-07	2.880E-07	1.762E-07	1.219E-07	5.903E-08	2.091E-08	9.290E-09	5.375E-09	3.528E-09
N	3.421E-06	1.142E-06	5.369E-07	3.335E-07	2.332E-07	1.147E-07	4.149E-08	1.868E-08	1.088E-08	7.165E-09
NNE	3.545E-06	1.230E-06	5.701E-07	3.468E-07	2.389E-07	1.147E-07	4.106E-08	1.760E-08	1.011E-08	6.608E-09
NE	2.610E-06	9.119E-07	4.213E-07	2.545E-07	1.745E-07	8.312E-08	2.875E-08	1.254E-08	7.188E-09	4.690E-09
ENE	1.959E-06	6.676E-07	3.093E-07	1.887E-07	1.303E-07	6.285E-08	2.214E-08	9.797E-09	5.657E-09	3.709E-09

	1.315E-06	4.485E-07	2.064E-07	1.252E-07	8.610E	4.127E-08	1.442E-08	6.345E-09	3.653E-09	2.390
ESE	1.745E-06	5.852E-07	2.737E-07	1.690E-07	1.177E-07	5.748E-08	2.061E-08	9.231E-09	5.361E-09	3.527E
SE	2.330E-06	7.636E-07	3.621E-07	2.273E-07	1.600E-07	7.961E-08	2.925E-08	1.331E-08	7.794E-09	5.152E-09
SSE	4.686E-06	1.547E-06	7.358E-07	4.625E-07	3.260E-07	1.624E-07	5.981E-08	2.729E-08	1.602E-08	1.061E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS				WIND SPEED (METERS/SEC) 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	

EXIT ONE GROUND LEVEL RELEASE JUL-DEC 83

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

DIRECTION FROM SITE	DISTANCES IN MILES 0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	4.255E-08	1.439E-08	7.388E-09	4.536E-09	2.262E-09	1.372E-09	9.274E-10	6.720E-10	5.110E-10	4.026E-10	3.259E-10
SSW	7.156E-08	2.420E-08	1.242E-08	7.629E-09	3.803E-09	2.307E-09	1.560E-09	1.130E-09	8.594E-10	6.770E-10	5.481E-10
SW	4.333E-08	1.465E-08	7.523E-09	4.620E-09	2.303E-09	1.397E-09	9.444E-10	6.843E-10	5.204E-10	4.100E-10	3.319E-10
WSW	2.307E-08	7.800E-09	4.005E-09	2.459E-09	1.226E-09	7.436E-10	5.028E-10	3.643E-10	2.770E-10	2.182E-10	1.767E-10
W	1.567E-08	5.299E-09	2.721E-09	1.671E-09	8.329E-10	5.051E-10	3.415E-10	2.475E-10	1.882E-10	1.483E-10	1.200E-10
WNW	1.239E-08	4.189E-09	2.151E-09	1.321E-09	6.584E-10	3.993E-10	2.700E-10	1.956E-10	1.488E-10	1.172E-10	9.488E-11
NW	1.652E-08	5.585E-09	2.868E-09	1.761E-09	8.779E-10	5.324E-10	3.600E-10	2.609E-10	1.984E-10	1.563E-10	1.265E-10
NNW	3.418E-08	1.156E-08	5.935E-09	3.645E-09	1.817E-09	1.102E-09	7.451E-10	5.399E-10	4.105E-10	3.234E-10	2.618E-10
N	4.694E-08	1.587E-08	8.150E-09	5.005E-09	2.495E-09	1.513E-09	1.023E-09	7.414E-10	5.637E-10	4.441E-10	3.596E-10
NNE	6.073E-08	2.054E-08	1.054E-08	6.475E-09	3.228E-09	1.958E-09	1.324E-09	9.592E-10	7.294E-10	5.746E-10	4.652E-10
NE	5.420E-08	1.833E-08	9.410E-09	5.778E-09	2.881E-09	1.747E-09	1.181E-09	8.559E-10	6.508E-10	5.128E-10	4.151E-10
ENE	3.485E-08	1.178E-08	6.050E-09	3.715E-09	1.852E-09	1.123E-09	7.595E-10	5.504E-10	4.185E-10	3.297E-10	2.669E-10
E	2.495E-08	8.436E-09	4.331E-09	2.660E-09	1.326E-09	8.042E-10	5.437E-10	3.940E-10	2.996E-10	2.360E-10	1.911E-10
ESE	2.284E-08	7.724E-09	3.966E-09	2.435E-09	1.214E-09	7.364E-10	4.979E-10	3.608E-10	2.743E-10	2.161E-10	1.750E-10
SE	2.349E-08	7.944E-09	4.079E-09	2.504E-09	1.249E-09	7.573E-10	5.120E-10	3.710E-10	2.821E-10	2.223E-10	1.799E-10
SSE	5.179E-08	1.751E-08	8.991E-09	5.521E-09	2.753E-09	1.669E-09	1.129E-09	8.179E-10	6.219E-10	4.900E-10	3.967E-10

DIRECTION FROM SITE	DISTANCES IN MILES 5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	2.696E-10	1.321E-10	8.289E-11	4.190E-11	2.536E-11	1.700E-11	1.218E-11	9.148E-12	7.113E-12	5.682E-12	4.638E-12
SSW	4.534E-10	2.222E-10	1.394E-10	7.046E-11	4.265E-11	2.859E-11	2.049E-11	1.539E-11	1.196E-11	9.556E-12	7.800E-12
SW	2.745E-10	1.345E-10	8.441E-11	4.267E-11	2.582E-11	1.731E-11	1.241E-11	9.316E-12	7.243E-12	5.785E-12	4.723E-12
WSW	1.462E-10	7.162E-11	4.494E-11	2.271E-11	1.375E-11	9.218E-12	6.605E-12	4.960E-12	3.856E-12	3.080E-12	2.514E-12
W	9.928E-11	4.865E-11	3.053E-11	1.543E-11	9.339E-12	6.261E-12	4.487E-12	3.369E-12	2.619E-12	2.092E-12	1.708E-12
WNW	7.848E-11	3.846E-11	2.413E-11	1.220E-11	7.383E-12	4.950E-12	3.547E-12	2.663E-12	2.071E-12	1.654E-12	1.350E-12
NW	1.046E-10	5.128E-11	3.218E-11	1.626E-11	9.844E-12	6.600E-12	4.729E-12	3.551E-12	2.761E-12	2.206E-12	1.800E-12
NNW	2.166E-10	1.061E-10	6.660E-11	3.366E-11	2.037E-11	1.366E-11	9.788E-12	7.350E-12	5.715E-12	4.565E-12	3.726E-12
N	2.974E-10	1.458E-10	9.145E-11	4.622E-11	2.798E-11	1.876E-11	1.344E-11	1.009E-11	7.847E-12	6.269E-12	5.117E-12
NNE	3.848E-10	1.886E-10	1.183E-10	5.980E-11	3.620E-11	2.427E-11	1.739E-11	1.306E-11	1.015E-11	8.110E-12	6.620E-12
NE	3.434E-10	1.683E-10	1.056E-10	5.337E-11	3.230E-11	2.166E-11	1.552E-11	1.165E-11	9.060E-12	7.237E-12	5.907E-12
ENE	2.208E-10	1.082E-10	6.789E-11	3.431E-11	2.077E-11	1.392E-11	9.978E-12	7.492E-12	5.825E-12	4.653E-12	3.798E-12
E	1.581E-10	7.746E-11	4.860E-11	2.456E-11	1.487E-11	9.969E-12	7.143E-12	5.364E-12	4.170E-12	3.331E-12	2.719E-12
ESE	1.447E-10	7.092E-11	4.450E-11	2.249E-11	1.361E-11	9.128E-12	6.541E-12	4.911E-12	3.819E-12	3.050E-12	2.490E-12
SE	1.488E-10	7.294E-11	4.576E-11	2.313E-11	1.400E-11	9.387E-12	6.726E-12	5.051E-12	3.927E-12	3.137E-12	2.560E-12
SSE	3.281E-10	1.608E-10	1.009E-10	5.099E-11	3.086E-11	2.069E-11	1.483E-11	1.113E-11	8.657E-12	6.915E-12	5.644E-12

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

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.676E-09	2.372E-09	9.437E-10	5.157E-10	3.278E-10	1.408E-10	4.366E-11	1.730E-11	9.240E-12	5.719E-12
SSW	1.291E-08	3.988E-09	1.587E-09	8.673E-10	5.512E-10	2.368E-10	7.342E-11	2.910E-11	1.554E-11	9.618E-12
SW	7.817E-09	2.415E-09	9.610E-10	5.251E-10	3.338E-10	1.434E-10	4.446E-11	1.762E-11	9.409E-12	5.824E-12
WSW	4.162E-09	1.286E-09	5.116E-10	2.796E-10	1.777E-10	7.633E-11	2.367E-11	9.381E-12	5.009E-12	3.101E-12
W	2.827E-09	8.734E-10	3.475E-10	1.899E-10	1.207E-10	5.185E-11	1.608E-11	6.372E-12	3.403E-12	2.106E-12
WNW	2.235E-09	6.904E-10	2.747E-10	1.501E-10	9.542E-11	4.099E-11	1.271E-11	5.037E-12	2.690E-12	1.665E-12
NW	2.980E-09	9.206E-10	3.663E-10	2.002E-10	1.272E-10	5.465E-11	1.695E-11	6.717E-12	3.587E-12	2.220E-12
NNW	6.167E-09	1.905E-09	7.582E-10	4.143E-10	2.633E-10	1.131E-10	3.507E-11	1.390E-11	7.424E-12	4.595E-12
N	8.469E-09	2.616E-09	1.041E-09	5.689E-10	3.616E-10	1.553E-10	4.816E-11	1.909E-11	1.019E-11	6.310E-12
NNE	1.096E-08	3.385E-09	1.347E-09	7.361E-10	4.678E-10	2.010E-10	6.231E-11	2.470E-11	1.319E-11	8.163E-12
NE	9.777E-09	3.021E-09	1.202E-09	6.568E-10	4.175E-10	1.793E-10	5.561E-11	2.204E-11	1.177E-11	7.285E-12
ENE	6.286E-09	1.942E-09	7.729E-10	4.223E-10	2.684E-10	1.153E-10	3.575E-11	1.417E-11	7.567E-12	4.684E-12
E	4.501E-09	1.390E-09	5.533E-10	3.024E-10	1.922E-10	8.254E-11	2.560E-11	1.014E-11	5.417E-12	3.353E-12
ESE	4.121E-09	1.273E-09	5.066E-10	2.768E-10	1.760E-10	7.558E-11	2.344E-11	9.289E-12	4.961E-12	3.070E-12
SE	4.238E-09	1.309E-09	5.210E-10	2.847E-10	1.810E-10	7.773E-11	2.410E-11	9.553E-12	5.101E-12	3.158E-12
SSE	9.343E-09	2.886E-09	1.149E-09	6.276E-10	3.989E-10	1.713E-10	5.313E-11	2.106E-11	1.125E-11	6.961E-12

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS				WIND SPEED (METERS/SEC) 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		

EXIT ONE GROUND LEVEL RELEASE JUL-DEC 83
SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	DISTANCE (METERS)	X/Q (SEC/CUB.METER) NO DECAY UNDEPLETED	X/Q (SEC/CUB.METER) 2.260 DAY DECAY UNDEPLETED	X/Q (SEC/CUB.METER) DEPLETED	D/Q (PER SQ.METER)
A	SITE BOUNDARY	S	0.28	451.	1.3E-05	1.3E-05	1.2E-05	3.6E-08
A	SITE BOUNDARY	SSW	0.29	467.	1.0E-05	1.0E-05	9.6E-06	5.7E-08
A	SITE BOUNDARY	SW	0.36	579.	3.5E-06	3.5E-06	3.3E-06	2.5E-08
A	SITE BOUNDARY	WSW	0.36	579.	2.5E-06	2.5E-06	2.3E-06	1.3E-08
A	SITE BOUNDARY	W	0.50	805.	1.3E-06	1.3E-06	1.2E-06	5.3E-09
A	SITE BOUNDARY	WNW	0.55	885.	1.0E-06	1.0E-06	9.1E-07	3.6E-09
A	SITE BOUNDARY	NW	1.23	1979.	3.9E-07	3.8E-07	3.3E-07	1.2E-09
A	SITE BOUNDARY	NNW	1.89	3042.	5.2E-07	5.1E-07	4.3E-07	1.2E-09
A	SITE BOUNDARY	N	1.94	3122.	9.2E-07	9.0E-07	7.6E-07	1.6E-09
A	SITE BOUNDARY	NNE	1.26	2028.	1.8E-06	1.8E-06	1.5E-06	4.4E-09
A	SITE BOUNDARY	NE	1.01	1625.	1.8E-06	1.8E-06	1.6E-06	5.7E-09
A	SITE BOUNDARY	ENE	0.86	1384.	1.7E-06	1.7E-06	1.5E-06	4.8E-09
A	SITE BOUNDARY	E	0.61	982.	2.0E-06	1.9E-06	1.8E-06	6.1E-09
A	SITE BOUNDARY	ESE	0.50	805.	3.6E-06	3.6E-06	3.3E-06	7.7E-09
A	SITE BOUNDARY	SE	0.29	467.	1.3E-05	1.3E-05	1.2E-05	1.9E-08
A	SITE BOUNDARY	SSE	0.26	418.	3.1E-05	3.1E-05	3.0E-05	4.9E-08
A	MILK COW	NE	1.30	2092.	1.3E-06	1.3E-06	1.1E-06	3.7E-09
A	MILK COW	E	4.20	6759.	1.3E-07	1.2E-07	9.5E-08	2.2E-10
A	MEAT ANIMAL	S	2.32	3734.	4.9E-07	4.8E-07	4.0E-07	1.1E-09
A	MEAT ANIMAL	SSW	2.08	3347.	5.0E-07	5.0E-07	4.1E-07	2.2E-09
A	MEAT ANIMAL	SW	2.27	3653.	2.2E-07	2.2E-07	1.8E-07	1.1E-09
A	MEAT ANIMAL	WSW	2.69	4329.	1.2E-07	1.2E-07	9.6E-08	4.4E-10
A	MEAT ANIMAL	W	3.97	6389.	5.9E-08	5.7E-08	4.5E-08	1.5E-10
A	MEAT ANIMAL	WNW	4.07	6550.	5.2E-08	5.1E-08	4.0E-08	1.1E-10
A	MEAT ANIMAL	NW	1.60	2575.	2.6E-07	2.6E-07	2.2E-07	7.9E-10
A	MEAT ANIMAL	NNW	2.84	4571.	3.0E-07	2.9E-07	2.4E-07	5.9E-10
A	MEAT ANIMAL	N	2.93	4715.	5.4E-07	5.2E-07	4.3E-07	7.7E-10
A	MEAT ANIMAL	NNE	1.65	2655.	1.2E-06	1.2E-06	1.0E-06	2.7E-09
A	MEAT ANIMAL	NE	1.16	1867.	1.5E-06	1.5E-06	1.3E-06	4.5E-09
A	MEAT ANIMAL	ENE	2.41	3879.	4.0E-07	3.9E-07	3.2E-07	8.1E-10
A	MEAT ANIMAL	E	3.12	5021.	1.9E-07	1.8E-07	1.5E-07	3.7E-10
A	MEAT ANIMAL	ESE	1.99	3203.	4.5E-07	4.5E-07	3.7E-07	7.4E-10
A	RESIDENT	S	0.30	483.	1.2E-05	1.2E-05	1.1E-05	3.2E-08
A	RESIDENT	SSW	0.30	483.	9.7E-06	9.7E-06	9.1E-06	5.4E-08
A	RESIDENT	SW	0.40	644.	3.0E-06	3.0E-06	2.8E-06	2.1E-08
A	RESIDENT	WSW	0.40	644.	2.1E-06	2.1E-06	1.9E-06	1.1E-08
A	RESIDENT	W	0.60	966.	9.7E-07	9.7E-07	8.8E-07	3.9E-09
A	RESIDENT	WNW	0.70	1127.	6.7E-07	6.7E-07	6.0E-07	2.4E-09
A	RESIDENT	NW	1.30	2092.	3.6E-07	3.5E-07	3.0E-07	1.1E-09
A	RESIDENT	NNW	2.90	4667.	2.9E-07	2.8E-07	2.3E-07	5.7E-10
A	RESIDENT	N	2.90	4667.	5.5E-07	5.3E-07	4.3E-07	7.9E-10
A	RESIDENT	NNE	1.30	2092.	1.7E-06	1.7E-06	1.5E-06	4.1E-09
A	RESIDENT	NE	1.20	1931.	1.4E-06	1.4E-06	1.2E-06	4.2E-09
A	RESIDENT	ENE	0.90	1448.	1.6E-06	1.6E-06	1.4E-06	4.4E-09
A	RESIDENT	E	0.80	1287.	1.3E-06	1.3E-06	1.1E-06	3.9E-09
A	RESIDENT	ESE	0.60	966.	2.7E-06	2.7E-06	2.4E-06	5.7E-09
A	RESIDENT	SE	0.30	483.	1.2E-05	1.2E-05	1.1E-05	1.8E-08
A	RESIDENT	SSE	0.30	483.	2.4E-05	2.4E-05	2.3E-05	3.9E-08
A	GARDEN	S	0.40	644.	7.1E-06	7.1E-06	6.6E-06	2.1E-08
A	GARDEN	SSW	0.50	805.	4.3E-06	4.3E-06	3.9E-06	2.4E-08
A	GARDEN	SW	0.50	805.	2.1E-06	2.1E-06	2.0E-06	1.5E-08
A	GARDEN	WSW	0.60	966.	1.1E-06	1.1E-06	1.0E-06	5.8E-09
A	GARDEN	W	0.60	966.	9.7E-07	9.7E-07	8.8E-07	3.9E-09

A	GARDEN	WNW	0.90	1448.	4.5E-0	4.5E-07	4.0E-07	1.6E-09
A	GARDEN	NW	1.30	2092.	3.6E-07	3.5E-07	3.0E-07	1.1E-09
A	GARDEN	NNW	3.00	4828.	2.8E-07	2.7E-07	2.2E-07	5.4E-10
A	GARDEN	N	2.90	4667.	5.5E-07	5.3E-07	4.3E-07	7.9E-10
A	GARDEN	NNE	1.40	2253.	1.6E-06	1.5E-06	1.3E-06	3.6E-09
A	GARDEN	NE	1.30	2092.	1.3E-06	1.3E-06	1.1E-06	3.7E-09
A	GARDEN	ENE	2.20	3541.	4.5E-07	4.4E-07	3.7E-07	9.5E-10
A	GARDEN	E	2.80	4506.	2.2E-07	2.1E-07	1.7E-07	4.5E-10
A	GARDEN	ESE	0.60	966.	2.7E-06	2.7E-06	2.4E-06	5.7E-09
A	GARDEN	SE	0.30	483.	1.2E-05	1.2E-05	1.1E-05	1.8E-08
A	GARDEN	SSE	0.30	483.	2.4E-05	2.4E-05	2.3E-05	3.9E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS				WIND SPEED (METERS/SEC) 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		

ENCLOSURE 4

METEOROLOGICAL DATA FOR
DIFFUSION ANALYSIS
JULY 1 - DECEMBER 31, 1983
H. B. ROBINSON STEAM ELECTRIC PLANT

The attached tables present the number and frequency of wind direction occurrences by wind speed class as recorded at the on-site meteorological system during the period July 1 through December 31, 1983.

The frequencies are presented as a percent of total occurrences for each stability class as well as a summary for all classes of each sensor elevation. 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 Stability categories based on lower level (10m) wind distribution.

A	B	C	D	E	F	G
6.2	5.1	5.5	36.1	26.6	10.7	9.6

2. Wind Speed

	10 Meter	60 Meter
Average Speed (mph)	5.1	8.9
Percent Calm	0.9	0.0
Percent Less than 3.5 mph	32.0	6.5

3. Wind Direction

	10 Meter	60 Meter
Prevailing Direction	NNE	NNE
Percent Occurrence	12.4	14.2

4. Data Recovery

	10 Meter	60 Meter
Percent Good Hours	99.1	99.1

(7530TDDpdc)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 1
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC SUMMARY OVER ALL STAB

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	20/ 0.46	67/ 1.53	146/ 3.34	87/ 1.99	17/ 0.39	/	337.0/ 7.70	10.40772
NNE	/	22/ 0.50	118/ 2.70	287/ 6.56	184/ 4.21	8/ 0.18	/	619.0/14.15	10.38680
NE	/	17/ 0.39	87/ 1.99	173/ 3.95	105/ 2.40	3/ 0.07	/	385.0/ 8.80	10.07967
ENE	/	11/ 0.25	83/ 1.90	82/ 1.87	26/ 0.59	/	/	202.0/ 4.62	8.18159
E	/	18/ 0.41	88/ 2.01	66/ 1.51	3/ 0.07	/	/	175.0/ 4.00	6.69115
ESE	/	27/ 0.62	68/ 1.55	24/ 0.55	4/ 0.09	4/ 0.09	/	127.0/ 2.90	6.14598
SE	/	19/ 0.43	75/ 1.71	48/ 1.10	2/ 0.05	1/ 0.02	1/ 0.02	146.0/ 3.34	6.81025
SSE	/	19/ 0.43	79/ 1.81	85/ 1.94	18/ 0.41	2/ 0.05	/	203.0/ 4.64	7.91416
S	/	7/ 0.16	73/ 1.67	125/ 2.86	34/ 0.78	1/ 0.02	/	240.0/ 5.49	9.02025
SSW	/	19/ 0.43	105/ 2.40	206/ 4.71	41/ 0.94	5/ 0.11	/	376.0/ 8.59	8.88764
SW	/	13/ 0.30	164/ 3.75	261/ 5.97	73/ 1.67	5/ 0.11	/	516.0/11.79	9.10086
WSW	/	17/ 0.39	149/ 3.41	158/ 3.61	39/ 0.89	1/ 0.02	/	364.0/ 8.32	8.36363
W	/	23/ 0.53	119/ 2.72	97/ 2.22	11/ 0.25	4/ 0.09	/	254.0/ 5.81	7.42372
WNW	/	20/ 0.46	59/ 1.35	53/ 1.21	25/ 0.57	2/ 0.05	/	159.0/ 3.63	7.88297
NW	/	16/ 0.37	56/ 1.28	49/ 1.12	19/ 0.43	2/ 0.05	2/ 0.05	144.0/ 3.29	8.32673
NNW	/	17/ 0.39	41/ 0.94	43/ 0.98	22/ 0.50	3/ 0.07	2/ 0.05	128.0/ 2.93	8.76271
TOTAL	/	285/ 6.51	1431/32.71	1903/43.50	693/15.84	58/ 1.33	5/ 0.11	4375/ 100	8.85240

NUMBER OF BAD RECORDS: 41

FORM 0113 (02/83)

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 3
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=A

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	5/ 0.11	8/ 0.18	3/ 0.07	3/ 0.07	/	19.0/ 0.43	11.02480
NNE	/	/	2/ 0.05	19/ 0.43	17/ 0.39	/	/	38.0/ 0.87	12.00644
NE	/	/	2/ 0.05	7/ 0.16	10/ 0.23	/	/	19.0/ 0.43	11.80765
ENE	/	/	4/ 0.09	14/ 0.32	6/ 0.14	/	/	24.0/ 0.55	10.43878
E	/	/	1/ 0.02	8/ 0.18	/	/	/	9.0/ 0.21	9.02303
ESE	/	/	5/ 0.11	6/ 0.14	1/ 0.02	/	/	12.0/ 0.27	7.88588
SE	/	/	12/ 0.27	3/ 0.07	/	/	/	15.0/ 0.34	6.61219
SSE	/	/	7/ 0.16	10/ 0.23	1/ 0.02	/	/	18.0/ 0.41	8.72658
S	/	/	4/ 0.09	15/ 0.34	1/ 0.02	/	/	20.0/ 0.46	9.58145
SSW	/	/	8/ 0.18	10/ 0.23	2/ 0.05	/	/	20.0/ 0.46	8.70518
SW	/	/	10/ 0.23	19/ 0.43	9/ 0.21	/	/	38.0/ 0.87	9.75092
WSW	/	/	4/ 0.09	7/ 0.16	2/ 0.05	/	/	13.0/ 0.30	9.66765
W	/	/	5/ 0.11	3/ 0.07	/	/	/	8.0/ 0.18	7.14732
WNW	/	/	3/ 0.07	5/ 0.11	/	/	/	8.0/ 0.18	7.94355
NW	/	/	1/ 0.02	2/ 0.05	3/ 0.07	/	/	6.0/ 0.14	10.78872
NNW	/	/	1/ 0.02	/	4/ 0.09	/	/	5.0/ 0.11	13.97364
TOTAL	/	/	74/ 1.69	136/ 3.11	59/ 1.35	3/ 0.07	/	272.0/ 6.22	9.88958

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 5
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=B

UPWNDDEG	UPWNDSPD							
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	6/ 0.14	6/ 0.14	6/ 0.14	/	/	18.0/ 0.41	10.18194
NNE	/	/	7/ 0.16	13/ 0.30	5/ 0.11	/	/	25.0/ 0.57	9.99699
NE	/	/	9/ 0.21	8/ 0.18	9/ 0.21	2/ 0.05	/	28.0/ 0.64	11.20738
ENE	/	/	8/ 0.18	10/ 0.23	1/ 0.02	/	/	19.0/ 0.43	7.85656
E	/	/	6/ 0.14	4/ 0.09	/	/	/	10.0/ 0.23	6.95347
ESE	/	1/ 0.02	9/ 0.21	1/ 0.02	/	/	/	11.0/ 0.25	4.97824
SE	/	3/ 0.07	4/ 0.09	1/ 0.02	1/ 0.02	/	/	9.0/ 0.21	5.93630
SSE	/	/	5/ 0.11	9/ 0.21	/	/	/	14.0/ 0.32	8.17710
S	/	/	2/ 0.05	5/ 0.11	1/ 0.02	/	/	8.0/ 0.18	9.13581
SSW	/	1/ 0.02	1/ 0.02	1/ 0.02	/	2/ 0.05	/	5.0/ 0.11	11.51909
SW	/	/	10/ 0.23	9/ 0.21	3/ 0.07	/	/	22.0/ 0.50	8.62476
WSW	/	/	12/ 0.27	10/ 0.23	/	/	/	22.0/ 0.50	7.39233
W	/	/	15/ 0.34	5/ 0.11	/	/	/	20.0/ 0.46	6.87093
WNW	/	/	1/ 0.02	/	/	/	/	1.0/ 0.02	6.78672
NW	/	/	3/ 0.07	4/ 0.09	1/ 0.02	/	/	8.0/ 0.18	8.60847
NNW	/	/	/	4/ 0.09	1/ 0.02	/	/	5.0/ 0.11	11.10888
TOTAL	/	5/ 0.11	98/ 2.24	90/ 2.06	28/ 0.64	4/ 0.09	/	225.0/ 5.14	8.62293

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 7
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=C

UPWNDDEG	UPWNDSPD							
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	8/ 0.18	14/ 0.32	5/ 0.11	1/ 0.02	/	28.0/ 0.64	9.60063
NNE	/	1/ 0.02	8/ 0.18	12/ 0.27	12/ 0.27	/	/	33.0/ 0.75	10.42592
NE	/	1/ 0.02	8/ 0.18	8/ 0.18	8/ 0.18	/	/	25.0/ 0.57	10.34828
ENE	/	/	9/ 0.21	7/ 0.16	2/ 0.05	/	/	18.0/ 0.41	8.24301
E	/	2/ 0.05	7/ 0.16	4/ 0.09	1/ 0.02	/	/	14.0/ 0.32	6.98444
ESE	/	2/ 0.05	7/ 0.16	/	/	/	/	9.0/ 0.21	4.36329
SE	/	/	5/ 0.11	1/ 0.02	/	/	/	6.0/ 0.14	5.67506
SSE	/	1/ 0.02	5/ 0.11	2/ 0.05	/	/	/	8.0/ 0.18	5.94672
S	/	/	5/ 0.11	2/ 0.05	1/ 0.02	/	/	8.0/ 0.18	8.44380
SSW	/	/	2/ 0.05	6/ 0.14	3/ 0.07	/	/	11.0/ 0.25	11.19347
SW	/	/	9/ 0.21	11/ 0.25	2/ 0.05	/	/	22.0/ 0.50	8.65660
WSW	/	/	10/ 0.23	4/ 0.09	/	/	/	14.0/ 0.32	6.88201
W	/	2/ 0.05	14/ 0.32	4/ 0.09	1/ 0.02	1/ 0.02	/	22.0/ 0.50	7.02699
WNW	/	/	4/ 0.09	2/ 0.05	1/ 0.02	/	/	7.0/ 0.16	8.10643
NW	/	/	2/ 0.05	2/ 0.05	4/ 0.09	/	1/ 0.02	9.0/ 0.21	13.32517
NNW	/	/	4/ 0.09	3/ 0.07	1/ 0.02	/	/	8.0/ 0.18	7.67884
TOTAL	/	9/ 0.21	107/ 2.45	82/ 1.87	41/ 0.94	2/ 0.05	1/ 0.02	242.0/ 5.53	8.71404

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 9
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=D

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	4/ 0.09	21/ 0.48	46/ 1.05	49/ 1.12	13/ 0.30	/	133.0/ 3.04	12.10329
NNE	/	3/ 0.07	26/ 0.59	146/ 3.34	139/ 3.18	8/ 0.18	/	322.0/ 7.36	11.93997
NE	/	4/ 0.09	35/ 0.80	106/ 2.42	68/ 1.55	/	/	213.0/ 4.87	10.69872
ENE	/	4/ 0.09	41/ 0.94	31/ 0.71	7/ 0.16	/	/	83.0/ 1.90	7.66286
E	/	7/ 0.16	34/ 0.78	25/ 0.57	1/ 0.02	/	/	67.0/ 1.53	6.48060
ESE	/	17/ 0.39	23/ 0.53	8/ 0.18	1/ 0.02	/	/	49.0/ 1.12	5.23357
SE	/	13/ 0.30	25/ 0.57	12/ 0.27	/	/	/	50.0/ 1.14	5.68584
SSE	/	9/ 0.21	30/ 0.69	22/ 0.50	7/ 0.16	1/ 0.02	/	69.0/ 1.58	7.54435
S	/	/	22/ 0.50	38/ 0.87	13/ 0.30	/	/	73.0/ 1.67	9.04828
SSW	/	2/ 0.05	33/ 0.75	71/ 1.62	16/ 0.37	1/ 0.02	/	123.0/ 2.81	9.39765
SW	/	3/ 0.07	47/ 1.07	44/ 1.01	10/ 0.23	1/ 0.02	/	105.0/ 2.40	8.35116
WSW	/	1/ 0.02	43/ 0.98	33/ 0.75	16/ 0.37	/	/	93.0/ 2.13	8.74152
W	/	2/ 0.05	29/ 0.66	35/ 0.80	2/ 0.05	2/ 0.05	/	70.0/ 1.60	8.13692
WNW	/	4/ 0.09	23/ 0.53	17/ 0.39	10/ 0.23	2/ 0.05	/	56.0/ 1.28	8.56499
NW	/	2/ 0.05	17/ 0.39	15/ 0.34	9/ 0.21	2/ 0.05	1/ 0.02	46.0/ 1.05	9.84296
NNW	/	4/ 0.09	7/ 0.16	7/ 0.16	6/ 0.14	3/ 0.07	2/ 0.05	29.0/ 0.66	10.99055
TOTAL	/	79/ 1.81	456/10.42	656/14.99	354/ 8.09	33/ 0.75	3/ 0.07	1581/36.14	9.60895

NUMBER OF BAD RECORDS: 1

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 11
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=E

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	8/ 0.18	10/ 0.23	53/ 1.21	21/ 0.48	/	/	92.0/ 2.10	9.74201
NNE	/	2/ 0.05	33/ 0.75	53/ 1.21	10/ 0.23	/	/	98.0/ 2.24	8.52246
NE	/	5/ 0.11	17/ 0.39	28/ 0.64	10/ 0.23	1/ 0.02	/	61.0/ 1.39	9.13407
ENE	/	2/ 0.05	10/ 0.23	16/ 0.37	8/ 0.18	/	/	36.0/ 0.82	9.36162
E	/	6/ 0.14	18/ 0.41	15/ 0.34	1/ 0.02	/	/	40.0/ 0.91	6.91971
ESE	/	2/ 0.05	12/ 0.27	6/ 0.14	2/ 0.05	4/ 0.09	/	26.0/ 0.59	9.11481
SE	/	1/ 0.02	20/ 0.46	22/ 0.50	1/ 0.02	1/ 0.02	1/ 0.02	46.0/ 1.05	8.31357
SSE	/	6/ 0.14	12/ 0.27	25/ 0.57	9/ 0.21	1/ 0.02	/	53.0/ 1.21	8.84845
S	/	4/ 0.09	23/ 0.53	43/ 0.98	16/ 0.37	1/ 0.02	/	87.0/ 1.99	9.51836
SSW	/	5/ 0.11	38/ 0.87	68/ 1.55	13/ 0.30	2/ 0.05	/	126.0/ 2.88	8.78614
SW	/	1/ 0.02	49/ 1.12	103/ 2.35	34/ 0.78	4/ 0.09	/	191.0/ 4.37	9.88923
WSW	/	3/ 0.07	41/ 0.94	60/ 1.37	15/ 0.34	1/ 0.02	/	120.0/ 2.74	9.06634
W	/	4/ 0.09	29/ 0.66	37/ 0.85	8/ 0.18	1/ 0.02	/	79.0/ 1.81	8.42108
WNW	/	3/ 0.07	12/ 0.27	14/ 0.32	11/ 0.25	/	/	40.0/ 0.91	8.97865
NW	/	2/ 0.05	20/ 0.46	9/ 0.21	/	/	/	31.0/ 0.71	6.58555
NNW	/	4/ 0.09	12/ 0.27	15/ 0.34	8/ 0.18	/	/	39.0/ 0.89	8.91044
TOTAL	/	58/ 1.33	356/ 8.14	567/12.96	167/ 3.82	16/ 0.37	1/ 0.02	1165/26.63	8.99472

NUMBER OF BAD RECORDS: 0

FORM 0113 (02/83)

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 13
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=F

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	5/ 0.11	9/ 0.21	16/ 0.37	3/ 0.07	/	/	33.0/ 0.75	8.03785
NNE	/	6/ 0.14	26/ 0.59	26/ 0.59	/	/	/	58.0/ 1.33	6.93277
NE	/	3/ 0.07	9/ 0.21	12/ 0.27	/	/	/	24.0/ 0.55	7.02782
ENE	/	3/ 0.07	/	3/ 0.07	2/ 0.05	/	/	8.0/ 0.18	8.02484
E	/	1/ 0.02	4/ 0.09	3/ 0.07	/	/	/	8.0/ 0.18	6.15933
ESE	/	3/ 0.07	5/ 0.11	2/ 0.05	/	/	/	10.0/ 0.23	5.09755
SE	/	/	5/ 0.11	9/ 0.21	/	/	/	14.0/ 0.32	8.01710
SSE	/	1/ 0.02	13/ 0.30	10/ 0.23	1/ 0.02	/	/	25.0/ 0.57	7.53910
S	/	1/ 0.02	9/ 0.21	13/ 0.30	1/ 0.02	/	/	24.0/ 0.55	8.19646
SSW	/	5/ 0.11	11/ 0.25	19/ 0.43	6/ 0.14	/	/	41.0/ 0.94	8.16709
SW	/	2/ 0.05	17/ 0.39	44/ 1.01	12/ 0.27	/	/	75.0/ 1.71	9.25218
WSW	/	2/ 0.05	15/ 0.34	25/ 0.57	2/ 0.05	/	/	44.0/ 1.01	8.28065
W	/	9/ 0.21	11/ 0.25	9/ 0.21	/	/	/	29.0/ 0.66	5.74827
WNW	/	8/ 0.18	7/ 0.16	14/ 0.32	3/ 0.07	/	/	32.0/ 0.73	7.05300
NW	/	3/ 0.07	6/ 0.14	14/ 0.32	2/ 0.05	/	/	25.0/ 0.57	8.01134
NNW	/	4/ 0.09	5/ 0.11	10/ 0.23	1/ 0.02	/	/	20.0/ 0.46	7.32616
TOTAL	/	56/ 1.28	152/ 3.47	229/ 5.23	33/ 0.75	/	/	470.0/10.74	7.72386

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 15
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=G

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	3/ 0.07	8/ 0.18	3/ 0.07	/	/	/	14.0/ 0.32	5.32766
NNE	/	10/ 0.23	16/ 0.37	18/ 0.41	1/ 0.02	/	/	45.0/ 1.03	6.60515
NE	/	4/ 0.09	7/ 0.16	4/ 0.09	/	/	/	15.0/ 0.34	5.27597
ENE	/	2/ 0.05	11/ 0.25	1/ 0.02	/	/	/	14.0/ 0.32	4.80478
E	/	2/ 0.05	18/ 0.41	7/ 0.16	/	/	/	27.0/ 0.62	6.00609
ESE	/	2/ 0.05	7/ 0.16	1/ 0.02	/	/	/	10.0/ 0.23	4.74737
SE	/	2/ 0.05	4/ 0.09	/	/	/	/	6.0/ 0.14	4.78017
SSE	/	2/ 0.05	7/ 0.16	7/ 0.16	/	/	/	16.0/ 0.37	6.83988
S	/	2/ 0.05	8/ 0.18	9/ 0.21	1/ 0.02	/	/	20.0/ 0.46	7.36285
SSW	/	6/ 0.14	12/ 0.27	31/ 0.71	1/ 0.02	/	/	50.0/ 1.14	7.78222
SW	/	7/ 0.16	22/ 0.50	31/ 0.71	3/ 0.07	/	/	63.0/ 1.44	7.70941
WSW	/	11/ 0.25	24/ 0.55	19/ 0.43	4/ 0.09	/	/	58.0/ 1.33	6.80052
W	/	6/ 0.14	16/ 0.37	4/ 0.09	/	/	/	26.0/ 0.59	5.18785
WNW	/	5/ 0.11	9/ 0.21	1/ 0.02	/	/	/	15.0/ 0.34	4.12206
NW	/	9/ 0.21	7/ 0.16	3/ 0.07	/	/	/	19.0/ 0.43	4.64794
NNW	/	5/ 0.11	12/ 0.27	4/ 0.09	1/ 0.02	/	/	22.0/ 0.50	5.54671
TOTAL	/	78/ 1.78	188/ 4.30	143/ 3.27	11/ 0.25	/	/	420.0/ 9.60	6.40364

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 1
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC SUMMARY OVER ALL STAB

LOWNDSPD

LOWNDDEG	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE LOWNDSPD
N	2.7/ 0.06	91/ 2.08	147/ 3.36	76/ 1.74	4/ 0.09	/	/	320.7/ 7.33	5.52521
NNE	1.6/ 0.04	53/ 1.21	276/ 6.31	209/ 4.78	1/ 0.02	/	/	540.6/12.36	6.78829
NE	1.0/ 0.02	33/ 0.75	156/ 3.57	137/ 3.13	1/ 0.02	/	/	328.0/ 7.50	6.90146
ENE	1.0/ 0.02	34/ 0.78	110/ 2.51	30/ 0.69	/	/	/	175.0/ 4.00	5.31400
E	1.2/ 0.03	41/ 0.94	70/ 1.60	7/ 0.16	/	/	/	119.2/ 2.72	4.40572
ESE	1.0/ 0.02	32/ 0.73	52/ 1.19	8/ 0.18	1/ 0.02	/	/	94.0/ 2.15	4.45896
SE	1.3/ 0.03	42/ 0.96	74/ 1.69	6/ 0.14	2/ 0.05	/	/	125.3/ 2.86	4.43486
SSE	2.3/ 0.05	77/ 1.76	146/ 3.34	31/ 0.71	2/ 0.05	/	/	258.3/ 5.90	4.80002
S	4.3/ 0.10	144/ 3.29	130/ 2.97	71/ 1.62	4/ 0.09	/	/	353.3/ 8.08	4.82803
SSW	5.4/ 0.12	179/ 4.09	209/ 4.78	59/ 1.35	8/ 0.18	/	/	460.4/10.52	4.75930
SW	3.9/ 0.09	128/ 2.93	204/ 4.66	73/ 1.67	2/ 0.05	/	/	410.9/ 9.39	5.07306
WSW	2.7/ 0.06	89/ 2.03	142/ 3.25	29/ 0.66	1/ 0.02	/	/	263.7/ 6.03	4.61904
W	1.9/ 0.04	62/ 1.42	104/ 2.38	20/ 0.46	1/ 0.02	/	/	188.9/ 4.32	4.60573
WNW	2.5/ 0.06	84/ 1.92	71/ 1.62	15/ 0.34	/	/	/	172.5/ 3.94	3.92782
NW	3.0/ 0.07	100/ 2.29	54/ 1.23	17/ 0.39	2/ 0.05	/	/	176.0/ 4.02	3.77109
NNW	5.1/ 0.12	170/ 3.89	179/ 4.09	31/ 0.71	3/ 0.07	/	/	388.1/ 8.87	4.17952
TOTAL	41.0/ 0.94	1359/31.06	2124/48.55	819/18.72	32/ 0.73	/	/	4375/ 100	5.12183

NUMBER OF BAD RECORDS: 41

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 3
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=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	/	/	6/ 0.14	12/ 0.27	/	/	/	18.0/ 0.41	8.22911
NNE	/	/	12/ 0.27	28/ 0.64	/	/	/	40.0/ 0.91	8.48674
NE	/	/	5/ 0.11	18/ 0.41	/	/	/	23.0/ 0.53	8.52817
ENE	/	/	6/ 0.14	13/ 0.30	/	/	/	19.0/ 0.43	7.98615
E	/	/	6/ 0.14	3/ 0.07	/	/	/	9.0/ 0.21	6.49954
ESE	/	/	11/ 0.25	2/ 0.05	/	/	/	13.0/ 0.30	6.16590
SE	/	/	17/ 0.39	1/ 0.02	/	/	/	18.0/ 0.41	6.09656
SSE	/	/	13/ 0.30	7/ 0.16	/	/	/	20.0/ 0.46	7.14190
S	/	/	5/ 0.11	15/ 0.34	/	/	/	20.0/ 0.46	8.25412
SSW	/	/	16/ 0.37	10/ 0.23	1/ 0.02	/	/	27.0/ 0.62	7.53175
SW	/	/	14/ 0.32	14/ 0.32	1/ 0.02	/	/	29.0/ 0.66	7.92062
WSW	/	/	5/ 0.11	6/ 0.14	/	/	/	11.0/ 0.25	7.98126
W	/	/	5/ 0.11	2/ 0.05	/	/	/	7.0/ 0.16	6.51040
WNW	/	/	5/ 0.11	1/ 0.02	/	/	/	6.0/ 0.14	6.69223
NW	/	/	3/ 0.07	3/ 0.07	/	/	/	6.0/ 0.14	7.12300
NNW	/	/	1/ 0.02	5/ 0.11	/	/	/	6.0/ 0.14	8.89611
TOTAL	/	/	130/ 2.97	140/ 3.20	2/ 0.05	/	/	272.0/ 6.22	7.70029

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 5
PROGRAM 1MDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=B

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	/	/	11/ 0.25	8/ 0.18	/	/	/	19.0/ 0.43	7.60117
NNE	/	/	15/ 0.34	11/ 0.25	/	/	/	26.0/ 0.59	7.13946
NE	/	1/ 0.02	11/ 0.25	15/ 0.34	1/ 0.02	/	/	28.0/ 0.64	8.16063
ENE	/	/	13/ 0.30	4/ 0.09	/	/	/	17.0/ 0.39	6.36494
E	/	1/ 0.02	9/ 0.21	1/ 0.02	/	/	/	11.0/ 0.25	5.29355
ESE	/	1/ 0.02	8/ 0.18	/	/	/	/	9.0/ 0.21	4.79499
SE	/	1/ 0.02	10/ 0.23	1/ 0.02	/	/	/	12.0/ 0.27	5.16786
SSE	/	1/ 0.02	8/ 0.18	6/ 0.14	/	/	/	15.0/ 0.34	6.89974
S	/	1/ 0.02	4/ 0.09	2/ 0.05	1/ 0.02	/	/	8.0/ 0.18	7.50166
SSW	/	/	4/ 0.09	2/ 0.05	1/ 0.02	/	/	7.0/ 0.16	8.11120
SW	/	/	19/ 0.43	8/ 0.18	/	/	/	27.0/ 0.62	6.73979
WSW	/	/	15/ 0.34	4/ 0.09	/	/	/	19.0/ 0.43	5.99744
W	/	/	9/ 0.21	3/ 0.07	/	/	/	12.0/ 0.27	6.40876
WNW	/	/	2/ 0.05	/	/	/	/	2.0/ 0.05	5.71952
NW	/	/	7/ 0.16	/	/	/	/	7.0/ 0.16	5.93868
NNW	/	/	2/ 0.05	4/ 0.09	/	/	/	6.0/ 0.14	8.06792
TOTAL	/	6/ 0.14	147/ 3.36	69/ 1.58	3/ 0.07	/	/	225.0/ 5.14	6.77637

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 7
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=C

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	/	/	26/ 0.59	9/ 0.21	/	/	/	35.0/ 0.80	6.48943
NNE	/	1/ 0.02	12/ 0.27	13/ 0.30	/	/	/	26.0/ 0.59	7.66858
NE	/	1/ 0.02	11/ 0.25	16/ 0.37	/	/	/	28.0/ 0.64	7.64291
ENE	/	/	15/ 0.34	5/ 0.11	/	/	/	20.0/ 0.46	6.20643
E	/	2/ 0.05	8/ 0.18	1/ 0.02	/	/	/	11.0/ 0.25	5.38602
ESE	/	1/ 0.02	8/ 0.18	/	/	/	/	9.0/ 0.21	4.06129
SE	/	2/ 0.05	5/ 0.11	1/ 0.02	/	/	/	8.0/ 0.18	4.63495
SSE	/	1/ 0.02	8/ 0.18	1/ 0.02	/	/	/	10.0/ 0.23	5.93963
S	/	/	2/ 0.05	4/ 0.09	1/ 0.02	/	/	7.0/ 0.16	8.41611
SSW	/	1/ 0.02	5/ 0.11	5/ 0.11	1/ 0.02	/	/	12.0/ 0.27	7.72608
SW	/	/	15/ 0.34	7/ 0.16	/	/	/	22.0/ 0.50	6.75337
WSW	/	/	11/ 0.25	1/ 0.02	/	/	/	12.0/ 0.27	5.96965
W	/	2/ 0.05	14/ 0.32	2/ 0.05	/	/	/	18.0/ 0.41	5.66301
WNW	/	/	8/ 0.18	2/ 0.05	/	/	/	10.0/ 0.23	6.10972
NW	/	/	1/ 0.02	4/ 0.09	1/ 0.02	/	/	6.0/ 0.14	10.25234
NNW	/	/	7/ 0.16	1/ 0.02	/	/	/	8.0/ 0.18	6.19476
TOTAL	/	11/ 0.25	156/ 3.57	72/ 1.65	3/ 0.07	/	/	242.0/ 5.53	6.62337

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY 8
PROGRAM IWDO1#25 (WDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 9
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=D

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	/	10/ 0.23	63/ 1.44	46/ 1.05	4/ 0.09	/	/	123.0/ 2.81	7.03698
NNE	/	9/ 0.21	190/ 4.34	152/ 3.47	1/ 0.02	/	/	352.0/ 8.05	7.31057
NE	/	13/ 0.30	98/ 2.24	82/ 1.87	/	/	/	193.0/ 4.41	7.06910
ENE	/	16/ 0.37	53/ 1.21	8/ 0.18	/	/	/	77.0/ 1.76	5.17553
E	/	20/ 0.46	41/ 0.94	1/ 0.02	/	/	/	62.0/ 1.42	4.35191
ESE	/	16/ 0.37	20/ 0.46	1/ 0.02	/	/	/	37.0/ 0.85	3.83164
SE	/	16/ 0.37	31/ 0.71	1/ 0.02	/	/	/	48.0/ 1.10	4.05480
SSE	/	10/ 0.23	60/ 1.37	10/ 0.23	1/ 0.02	/	/	81.0/ 1.85	5.48340
S	/	9/ 0.21	63/ 1.44	29/ 0.66	1/ 0.02	/	/	102.0/ 2.33	6.29263
SSW	/	8/ 0.18	83/ 1.90	30/ 0.69	2/ 0.05	/	/	123.0/ 2.81	6.33772
SW	/	14/ 0.32	61/ 1.39	29/ 0.66	/	/	/	104.0/ 2.38	5.99033
WSW	/	15/ 0.34	49/ 1.12	11/ 0.25	/	/	/	75.0/ 1.71	5.37343
W	/	8/ 0.18	39/ 0.89	10/ 0.23	/	/	/	57.0/ 1.30	5.45984
WNW	/	12/ 0.27	30/ 0.69	10/ 0.23	/	/	/	52.0/ 1.19	5.63583
NW	/	10/ 0.23	25/ 0.57	10/ 0.23	1/ 0.02	/	/	46.0/ 1.05	5.73765
NNW	/	1/ 0.02	25/ 0.57	20/ 0.46	3/ 0.07	/	/	49.0/ 1.12	7.80492
TOTAL	/	187/ 4.27	931/21.28	450/10.29	13/ 0.30	/	/	1581/36.14	6.29357

NUMBER OF BAD RECORDS: 1

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 11
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT.

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=E

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	0.1/ 0.00	24/ 0.55	36/ 0.82	1/ 0.02	/	/	/	61.1/ 1.40	4.15913
NNE	0.1/ 0.00	16/ 0.37	45/ 1.03	5/ 0.11	/	/	/	66.1/ 1.51	4.78044
NE	0.0/ 0.00	9/ 0.21	30/ 0.69	6/ 0.14	/	/	/	45.0/ 1.03	5.29005
ENE	0.1/ 0.00	14/ 0.32	22/ 0.50	/	/	/	/	36.1/ 0.83	3.75880
E	0.1/ 0.00	14/ 0.32	6/ 0.14	1/ 0.02	/	/	/	21.1/ 0.48	3.42963
ESE	0.0/ 0.00	6/ 0.14	4/ 0.09	5/ 0.11	1/ 0.02	/	/	16.0/ 0.37	6.30732
SE	0.1/ 0.00	14/ 0.32	11/ 0.25	2/ 0.05	2/ 0.05	/	/	29.1/ 0.67	4.71770
SSE	0.1/ 0.00	25/ 0.57	46/ 1.05	7/ 0.16	1/ 0.02	/	/	79.1/ 1.81	4.58931
S	0.2/ 0.00	39/ 0.89	49/ 1.12	20/ 0.46	1/ 0.02	/	/	109.2/ 2.50	5.00143
SSW	0.4/ 0.01	98/ 2.24	88/ 2.01	12/ 0.27	3/ 0.07	/	/	201.4/ 4.60	4.15542
SW	0.3/ 0.01	58/ 1.33	77/ 1.76	15/ 0.34	1/ 0.02	/	/	151.3/ 3.46	4.57532
WSW	0.1/ 0.00	29/ 0.66	52/ 1.19	6/ 0.14	1/ 0.02	/	/	88.1/ 2.01	4.44831
W	0.1/ 0.00	24/ 0.55	33/ 0.75	3/ 0.07	1/ 0.02	/	/	61.1/ 1.40	4.23916
WNW	0.1/ 0.00	27/ 0.62	19/ 0.43	2/ 0.05	/	/	/	48.1/ 1.10	3.37443
NW	0.1/ 0.00	16/ 0.37	13/ 0.30	/	/	/	/	29.1/ 0.67	3.30721
NNW	0.2/ 0.00	37/ 0.85	85/ 1.94	1/ 0.02	/	/	/	123.2/ 2.82	4.38673
TOTAL	2.0/ 0.05	450/10.29	616/14.08	86/ 1.97	11/ 0.25	/	/	1165/26.63	4.41429

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 13
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=F

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	0.7/ 0.02	22/ 0.50	2/ 0.05	/	/	/	/	24.7/ 0.56	2.34023
NNE	0.3/ 0.01	11/ 0.25	2/ 0.05	/	/	/	/	13.3/ 0.30	2.20473
NE	0.3/ 0.01	8/ 0.18	1/ 0.02	/	/	/	/	9.3/ 0.21	2.17043
ENE	0.0/ 0.00	1/ 0.02	1/ 0.02	/	/	/	/	2.0/ 0.05	3.55177
E	0.1/ 0.00	2/ 0.05	/	/	/	/	/	2.1/ 0.05	1.92357
ESE	0.1/ 0.00	2/ 0.05	1/ 0.02	/	/	/	/	3.1/ 0.07	2.57923
SE	/	/	/	/	/	/	/	/	
SSE	0.6/ 0.01	20/ 0.46	11/ 0.25	/	/	/	/	31.6/ 0.72	2.96614
S	1.3/ 0.03	42/ 0.96	7/ 0.16	1/ 0.02	/	/	/	51.3/ 1.17	2.66140
SSW	1.5/ 0.03	47/ 1.07	13/ 0.30	/	/	/	/	61.5/ 1.41	2.79800
SW	1.5/ 0.03	47/ 1.07	17/ 0.39	/	/	/	/	65.5/ 1.50	2.82596
WSW	0.9/ 0.02	29/ 0.66	5/ 0.11	1/ 0.02	/	/	/	35.9/ 0.82	2.61817
W	0.6/ 0.01	18/ 0.41	4/ 0.09	/	/	/	/	22.6/ 0.52	2.55215
WNW	0.7/ 0.02	22/ 0.50	4/ 0.09	/	/	/	/	26.7/ 0.61	2.22801
NW	0.9/ 0.02	29/ 0.66	4/ 0.09	/	/	/	/	33.9/ 0.77	2.24669
NNW	1.5/ 0.03	48/ 1.10	37/ 0.85	/	/	/	/	86.5/ 1.98	3.08525
TOTAL	11.0/ 0.25	348/ 7.95	109/ 2.49	2/ 0.05	/	/	/	470.0/10.74	2.69805

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 15
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=G

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	2.7/ 0.06	35/ 0.80	3/ 0.07	/	/	/	/	40.7/ 0.93	1.80329
NNE	1.3/ 0.03	16/ 0.37	/	/	/	/	/	17.3/ 0.40	1.44893
NE	0.1/ 0.00	1/ 0.02	/	/	/	/	/	1.1/ 0.03	1.11039
ENE	0.2/ 0.00	3/ 0.07	/	/	/	/	/	3.2/ 0.07	1.12295
E	0.2/ 0.00	2/ 0.05	/	/	/	/	/	2.2/ 0.05	0.83752
ESE	0.5/ 0.01	6/ 0.14	/	/	/	/	/	6.5/ 0.15	1.13196
SE	0.7/ 0.02	9/ 0.21	/	/	/	/	/	9.7/ 0.22	1.38169
SSE	1.6/ 0.04	20/ 0.46	/	/	/	/	/	21.6/ 0.49	1.43357
S	4.2/ 0.10	53/ 1.21	/	/	/	/	/	57.2/ 1.31	1.64489
SSW	2.0/ 0.05	25/ 0.57	/	/	/	/	/	27.0/ 0.62	1.63661
SW	0.7/ 0.02	9/ 0.21	1/ 0.02	/	/	/	/	10.7/ 0.24	1.88643
WSW	1.3/ 0.03	16/ 0.37	5/ 0.11	/	/	/	/	22.3/ 0.51	2.41486
W	0.8/ 0.02	10/ 0.23	/	/	/	/	/	10.8/ 0.25	1.45905
WNW	1.8/ 0.04	23/ 0.53	3/ 0.07	/	/	/	/	27.8/ 0.64	1.76884
NW	3.5/ 0.08	45/ 1.03	1/ 0.02	/	/	/	/	49.5/ 1.13	1.62486
NNW	6.6/ 0.15	84/ 1.92	22/ 0.50	/	/	/	/	112.6/ 2.57	2.48331
TOTAL	28.0/ 0.64	357/ 8.16	35/ 0.80	/	/	/	/	420.0/ 9.60	1.89081

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENC[illegible] FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 5
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=B

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	6/ 0.28	5/ 0.23	4/ 0.18	/	/	15.0/ 0.69	9.33911
NNE	/	/	7/ 0.32	8/ 0.37	3/ 0.14	/	/	18.0/ 0.83	9.61592
NE	/	/	6/ 0.28	6/ 0.28	5/ 0.23	2/ 0.09	/	19.0/ 0.87	11.16610
ENE	/	/	4/ 0.18	8/ 0.37	1/ 0.05	/	/	13.0/ 0.60	8.27465
E	/	/	4/ 0.18	4/ 0.18	/	/	/	8.0/ 0.37	7.23278
ESE	/	1/ 0.05	9/ 0.41	1/ 0.05	/	/	/	11.0/ 0.51	4.97824
SE	/	3/ 0.14	4/ 0.18	1/ 0.05	1/ 0.05	/	/	9.0/ 0.41	5.93630
SSE	/	/	5/ 0.23	9/ 0.41	/	/	/	14.0/ 0.64	8.17710
S	/	/	1/ 0.05	4/ 0.18	1/ 0.05	/	/	6.0/ 0.28	10.07726
SSW	/	1/ 0.05	1/ 0.05	1/ 0.05	/	1/ 0.05	/	4.0/ 0.18	9.71318
SW	/	/	7/ 0.32	6/ 0.28	1/ 0.05	/	/	14.0/ 0.64	7.88727
WSW	/	/	10/ 0.46	7/ 0.32	/	/	/	17.0/ 0.78	7.09178
W	/	/	11/ 0.51	3/ 0.14	/	/	/	14.0/ 0.64	6.68072
WNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.78672
NW	/	/	3/ 0.14	4/ 0.18	/	/	/	7.0/ 0.32	7.62047
NNW	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	9.24629
TOTAL	/	5/ 0.23	79/ 3.63	69/ 3.17	16/ 0.74	3/ 0.14	/	172.0/ 7.90	8.23186

NUMBER OF BAD RECORDS: 0

FORM ( )2/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 7
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=C

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	7/ 0.32	5/ 0.23	/	/	/	12.0/ 0.55	7.52181
NNE	/	/	6/ 0.28	5/ 0.23	8/ 0.37	/	/	19.0/ 0.87	10.76766
NE	/	/	7/ 0.32	1/ 0.05	2/ 0.09	/	/	10.0/ 0.46	7.76554
ENE	/	/	7/ 0.32	5/ 0.23	2/ 0.09	/	/	14.0/ 0.64	8.51735
E	/	1/ 0.05	6/ 0.28	4/ 0.18	1/ 0.05	/	/	12.0/ 0.55	7.29114
ESE	/	1/ 0.05	7/ 0.32	/	/	/	/	8.0/ 0.37	4.55019
SE	/	/	5/ 0.23	1/ 0.05	/	/	/	6.0/ 0.28	5.67506
SSE	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	/	5.0/ 0.23	5.94297
S	/	/	3/ 0.14	2/ 0.09	1/ 0.05	/	/	6.0/ 0.28	8.94892
SSW	/	/	/	6/ 0.28	2/ 0.09	/	/	8.0/ 0.37	11.69959
SW	/	/	6/ 0.28	10/ 0.46	1/ 0.05	/	/	17.0/ 0.78	8.62294
WSW	/	/	7/ 0.32	2/ 0.09	/	/	/	9.0/ 0.41	6.58107
W	/	1/ 0.05	10/ 0.46	1/ 0.05	/	/	/	12.0/ 0.55	5.44717
WNW	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	6.53660
NW	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	6.64777
NNW	/	/	4/ 0.18	1/ 0.05	1/ 0.05	/	/	6.0/ 0.28	7.27308
TOTAL	/	4/ 0.18	84/ 3.86	46/ 2.11	18/ 0.83	/	/	152.0/ 6.99	7.85623

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 9
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=D

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	1/ 0.05	10/ 0.46	17/ 0.78	15/ 0.69	3/ 0.14	/	46.0/ 2.11	11.53293
NNE	/	1/ 0.05	11/ 0.51	56/ 2.57	52/ 2.39	8/ 0.37	/	128.0/ 5.88	12.20193
NE	/	2/ 0.09	16/ 0.74	37/ 1.70	25/ 1.15	/	/	80.0/ 3.68	10.47093
ENE	/	1/ 0.05	25/ 1.15	18/ 0.83	3/ 0.14	/	/	47.0/ 2.16	7.45301
E	/	4/ 0.18	21/ 0.97	20/ 0.92	/	/	/	45.0/ 2.07	6.41802
ESE	/	4/ 0.18	12/ 0.55	4/ 0.18	1/ 0.05	/	/	21.0/ 0.97	5.94424
SE	/	7/ 0.32	18/ 0.83	6/ 0.28	/	/	/	31.0/ 1.42	5.45864
SSE	/	4/ 0.18	20/ 0.92	15/ 0.69	2/ 0.09	/	/	41.0/ 1.88	7.19831
S	/	/	14/ 0.64	28/ 1.29	6/ 0.28	/	/	48.0/ 2.21	8.79502
SSW	/	1/ 0.05	14/ 0.64	45/ 2.07	11/ 0.51	/	/	71.0/ 3.26	9.96061
SW	/	2/ 0.09	32/ 1.47	25/ 1.15	3/ 0.14	/	/	62.0/ 2.85	7.55727
WSW	/	/	27/ 1.24	8/ 0.37	/	/	/	35.0/ 1.61	6.38652
W	/	1/ 0.05	20/ 0.92	2/ 0.09	/	/	/	23.0/ 1.06	5.43242
WNW	/	2/ 0.09	12/ 0.55	1/ 0.05	/	1/ 0.05	/	16.0/ 0.74	5.79039
NW	/	1/ 0.05	10/ 0.46	7/ 0.32	1/ 0.05	/	/	19.0/ 0.87	7.13251
NNW	/	3/ 0.14	3/ 0.14	2/ 0.09	1/ 0.05	/	/	9.0/ 0.41	6.48287
TOTAL	/	34/ 1.56	265/12.18	291/13.37	120/ 5.51	12/ 0.55	/	722.0/33.18	8.85210

NUMBER OF BAD RECORDS: 1

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 10
PROGRAM IMDO1#25 (WDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 11
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=E

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	3/ 0.14	4/ 0.18	28/ 1.29	5/ 0.23	/	/	40.0/ 1.84	9.40845
NNE	/	/	14/ 0.64	22/ 1.01	2/ 0.09	/	/	38.0/ 1.75	8.22736
NE	/	5/ 0.23	7/ 0.32	8/ 0.37	1/ 0.05	1/ 0.05	/	22.0/ 1.01	7.35898
ENE	/	2/ 0.09	1/ 0.05	10/ 0.46	6/ 0.28	/	/	19.0/ 0.87	10.40695
E	/	4/ 0.18	8/ 0.37	8/ 0.37	/	/	/	20.0/ 0.92	6.26063
ESE	/	2/ 0.09	4/ 0.18	5/ 0.23	/	/	/	11.0/ 0.51	6.71396
SE	/	1/ 0.05	14/ 0.64	7/ 0.32	/	/	/	22.0/ 1.01	6.41457
SSE	/	3/ 0.14	7/ 0.32	12/ 0.55	/	/	/	22.0/ 1.01	7.11037
S	/	2/ 0.09	16/ 0.74	25/ 1.15	3/ 0.14	/	/	46.0/ 2.11	8.47779
SSW	/	3/ 0.14	27/ 1.24	42/ 1.93	3/ 0.14	/	/	75.0/ 3.45	8.13673
SW	/	1/ 0.05	35/ 1.61	77/ 3.54	4/ 0.18	/	/	117.0/ 5.38	8.54772
WSW	/	1/ 0.05	23/ 1.06	25/ 1.15	1/ 0.05	/	/	50.0/ 2.30	7.85492
W	/	2/ 0.09	16/ 0.74	5/ 0.23	1/ 0.05	/	/	24.0/ 1.10	6.24340
WNW	/	1/ 0.05	10/ 0.46	7/ 0.32	/	/	/	18.0/ 0.83	6.62368
NW	/	/	8/ 0.37	2/ 0.09	/	/	/	10.0/ 0.46	6.39653
NNW	/	2/ 0.09	8/ 0.37	2/ 0.09	1/ 0.05	/	/	13.0/ 0.60	6.73029
TOTAL	/	32/ 1.47	202/ 9.28	285/13.10	27/ 1.24	1/ 0.05	/	547.0/25.14	7.96858

NUMBER OF BAD RECORDS: 0

FORM 02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

16:50 THURSDAY, JANUARY 26, 1984

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 13
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=F

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	5/ 0.23	6/ 0.28	11/ 0.51	3/ 0.14	/	/	25.0/ 1.15	8.02468
NNE	/	2/ 0.09	15/ 0.69	10/ 0.46	/	/	/	27.0/ 1.24	6.90839
NE	/	1/ 0.05	4/ 0.18	5/ 0.23	/	/	/	10.0/ 0.46	7.70051
ENE	/	3/ 0.14	/	2/ 0.09	1/ 0.05	/	/	6.0/ 0.28	6.80896
E	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.21194
ESE	/	2/ 0.09	2/ 0.09	1/ 0.05	/	/	/	5.0/ 0.23	4.51559
SE	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	5.30598
SSE	/	1/ 0.05	13/ 0.60	3/ 0.14	1/ 0.05	/	/	18.0/ 0.83	6.57643
S	/	1/ 0.05	9/ 0.41	10/ 0.46	/	/	/	20.0/ 0.92	7.57128
SSW	/	4/ 0.18	9/ 0.41	8/ 0.37	/	/	/	21.0/ 0.97	6.02920
SW	/	2/ 0.09	14/ 0.64	22/ 1.01	4/ 0.18	/	/	42.0/ 1.93	8.31010
WSW	/	/	11/ 0.51	13/ 0.60	1/ 0.05	/	/	25.0/ 1.15	8.07003
W	/	7/ 0.32	3/ 0.14	5/ 0.23	/	/	/	15.0/ 0.69	5.34712
WNW	/	4/ 0.18	6/ 0.28	7/ 0.32	/	/	/	17.0/ 0.78	5.92747
NW	/	1/ 0.05	3/ 0.14	6/ 0.28	1/ 0.05	/	/	11.0/ 0.51	7.41583
NNW	/	3/ 0.14	5/ 0.23	6/ 0.28	/	/	/	14.0/ 0.64	6.46156
TOTAL	/	36/ 1.65	105/ 4.83	111/ 5.10	11/ 0.51	/	/	263.0/12.09	7.10545

NUMBER OF BAD RECORDS: 0

FORM 2/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 15
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=G

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	1/ 0.05	/	1/ 0.05	/	/	/	2.0/ 0.09	7.22861
NNE	/	4/ 0.18	3/ 0.14	5/ 0.23	/	/	/	12.0/ 0.55	5.98910
NE	/	/	/	/	/	/	/	/	
ENE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	4.65232
E	/	/	/	/	/	/	/	/	
ESE	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.53510
SE	/	2/ 0.09	3/ 0.14	/	/	/	/	5.0/ 0.23	4.85909
SSE	/	2/ 0.09	5/ 0.23	2/ 0.09	/	/	/	9.0/ 0.41	5.53980
S	/	/	1/ 0.05	2/ 0.09	/	/	/	3.0/ 0.14	7.83169
SSW	/	1/ 0.05	1/ 0.05	3/ 0.14	/	/	/	5.0/ 0.23	6.98349
SW	/	2/ 0.09	2/ 0.09	4/ 0.18	/	/	/	8.0/ 0.37	6.67625
WSW	/	2/ 0.09	6/ 0.28	3/ 0.14	/	/	/	11.0/ 0.51	6.21523
W	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.01184
WNW	/	1/ 0.05	2/ 0.09	1/ 0.05	/	/	/	4.0/ 0.18	4.91079
NW	/	1/ 0.05	3/ 0.14	2/ 0.09	/	/	/	6.0/ 0.28	6.03357
NNW	/	2/ 0.09	4/ 0.18	3/ 0.14	/	/	/	9.0/ 0.41	5.57871
TOTAL	/	19/ 0.87	33/ 1.52	27/ 1.24	/	/	/	79.0/ 3.63	5.98063

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 1
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR SUMMARY OVER ALL STAB

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	0.8/ 0.04	37/ 1.70	73/ 3.35	28/ 1.29	2/ 0.09	/	/	140.8/ 6.47	5.54905
NNE	0.4/ 0.02	17/ 0.78	122/ 5.61	95/ 4.37	1/ 0.05	/	/	235.4/10.82	7.04161
NE	0.3/ 0.01	13/ 0.60	69/ 3.17	59/ 2.71	1/ 0.05	/	/	142.3/ 6.54	6.95409
ENE	0.4/ 0.02	16/ 0.74	69/ 3.17	16/ 0.74	/	/	/	101.4/ 4.66	5.42573
E	0.5/ 0.02	20/ 0.92	54/ 2.48	5/ 0.23	/	/	/	79.5/ 3.65	4.77004
ESE	0.2/ 0.01	9/ 0.41	43/ 1.98	3/ 0.14	/	/	/	55.2/ 2.54	4.69573
SE	0.4/ 0.02	18/ 0.83	53/ 2.44	4/ 0.18	/	/	/	75.4/ 3.47	4.67320
SSE	0.8/ 0.04	34/ 1.56	85/ 3.91	18/ 0.83	/	/	/	137.8/ 6.33	5.02291
S	1.5/ 0.07	64/ 2.94	81/ 3.72	35/ 1.61	/	/	/	181.5/ 8.34	4.97101
SSW	2.9/ 0.13	126/ 5.79	131/ 6.02	41/ 1.88	4/ 0.18	/	/	304.9/14.01	4.66097
SW	2.1/ 0.10	91/ 4.18	125/ 5.74	23/ 1.06	1/ 0.05	/	/	242.1/11.13	4.51981
WSW	1.0/ 0.05	44/ 2.02	53/ 2.44	8/ 0.37	/	/	/	106.0/ 4.87	4.21476
W	0.6/ 0.03	27/ 1.24	40/ 1.84	5/ 0.23	/	/	/	72.6/ 3.34	4.12706
WNW	0.9/ 0.04	41/ 1.88	31/ 1.42	2/ 0.09	/	/	/	74.9/ 3.44	3.44202
NW	0.9/ 0.04	39/ 1.79	29/ 1.33	4/ 0.18	/	/	/	72.9/ 3.35	3.63824
NNW	1.4/ 0.06	61/ 2.80	81/ 3.72	10/ 0.46	/	/	/	153.4/ 7.05	4.10358
TOTAL	15.0/ 0.69	657/30.19	1139/52.34	356/16.36	9/ 0.41	/	/	2176/ 100	5.04508

NUMBER OF BAD RECORDS: 32

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=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	/	/	6/ 0.28	10/ 0.46	/	/	/	16.0/ 0.74	7.92062
NNE	/	/	10/ 0.46	26/ 1.19	/	/	/	36.0/ 1.65	8.54316
NE	/	/	2/ 0.09	18/ 0.83	/	/	/	20.0/ 0.92	8.97115
ENE	/	/	5/ 0.23	7/ 0.32	/	/	/	12.0/ 0.55	7.61167
E	/	/	6/ 0.28	3/ 0.14	/	/	/	9.0/ 0.41	6.49954
ESE	/	/	11/ 0.51	2/ 0.09	/	/	/	13.0/ 0.60	6.16590
SE	/	/	17/ 0.78	1/ 0.05	/	/	/	18.0/ 0.83	6.09656
SSE	/	/	13/ 0.60	7/ 0.32	/	/	/	20.0/ 0.92	7.14190
S	/	/	5/ 0.23	15/ 0.69	/	/	/	20.0/ 0.92	8.25412
SSW	/	/	16/ 0.74	10/ 0.46	1/ 0.05	/	/	27.0/ 1.24	7.53175
SW	/	/	14/ 0.64	9/ 0.41	1/ 0.05	/	/	24.0/ 1.10	7.59755
WSW	/	/	4/ 0.18	5/ 0.23	/	/	/	9.0/ 0.41	8.10961
W	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	6.58329
WNW	/	/	5/ 0.23	1/ 0.05	/	/	/	6.0/ 0.28	6.69223
NW	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	6.74670
NNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	4.58562
TOTAL	/	/	121/ 5.56	118/ 5.42	2/ 0.09	/	/	241.0/11.08	7.59930

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=B

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	/	/	9/ 0.41	5/ 0.23	/	/	/	14.0/ 0.64	7.21789
NNE	/	/	13/ 0.60	8/ 0.37	/	/	/	21.0/ 0.97	7.02811
NE	/	/	7/ 0.32	10/ 0.46	1/ 0.05	/	/	18.0/ 0.83	8.50518
ENE	/	/	9/ 0.41	3/ 0.14	/	/	/	12.0/ 0.55	6.60886
E	/	1/ 0.05	7/ 0.32	1/ 0.05	/	/	/	9.0/ 0.41	5.40640
ESE	/	1/ 0.05	8/ 0.37	/	/	/	/	9.0/ 0.41	4.79499
SE	/	1/ 0.05	10/ 0.46	1/ 0.05	/	/	/	12.0/ 0.55	5.16786
SSE	/	1/ 0.05	7/ 0.32	6/ 0.28	/	/	/	14.0/ 0.64	7.12340
S	/	1/ 0.05	3/ 0.14	2/ 0.09	/	/	/	6.0/ 0.28	6.56717
SSW	/	/	3/ 0.14	1/ 0.05	1/ 0.05	/	/	5.0/ 0.23	8.06069
SW	/	/	16/ 0.74	5/ 0.23	/	/	/	21.0/ 0.97	6.55327
WSW	/	/	10/ 0.46	2/ 0.09	/	/	/	12.0/ 0.55	5.60558
W	/	/	7/ 0.32	1/ 0.05	/	/	/	8.0/ 0.37	6.04677
WNW	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	5.71952
NW	/	/	7/ 0.32	/	/	/	/	7.0/ 0.32	5.93868
NNW	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.77839
TOTAL	/	5/ 0.23	120/ 5.51	45/ 2.07	2/ 0.09	/	/	172.0/ 7.90	6.59377

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 7
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=C

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	/	/	15/ 0.69	1/ 0.05	/	/	/	16.0/ 0.74	5.39332
NNE	/	/	7/ 0.32	8/ 0.37	/	/	/	15.0/ 0.69	7.89839
NE	/	/	9/ 0.41	4/ 0.18	/	/	/	13.0/ 0.60	6.67385
ENE	/	/	11/ 0.51	5/ 0.23	/	/	/	16.0/ 0.74	6.40112
E	/	/	7/ 0.32	1/ 0.05	/	/	/	8.0/ 0.37	5.97799
ESE	/	1/ 0.05	8/ 0.37	/	/	/	/	9.0/ 0.41	4.06129
SE	/	1/ 0.05	4/ 0.18	1/ 0.05	/	/	/	6.0/ 0.28	4.85242
SSE	/	1/ 0.05	6/ 0.28	1/ 0.05	/	/	/	8.0/ 0.37	5.81332
S	/	/	1/ 0.05	4/ 0.18	/	/	/	5.0/ 0.23	7.84392
SSW	/	/	3/ 0.14	5/ 0.23	1/ 0.05	/	/	9.0/ 0.41	8.67656
SW	/	/	12/ 0.55	5/ 0.23	/	/	/	17.0/ 0.78	6.62782
WSW	/	/	7/ 0.32	/	/	/	/	7.0/ 0.32	5.80766
W	/	2/ 0.09	7/ 0.32	1/ 0.05	/	/	/	10.0/ 0.46	4.91912
WNW	/	/	7/ 0.32	/	/	/	/	7.0/ 0.32	4.91912
NW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	5.86960
NNW	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	6.00967
TOTAL	/	5/ 0.23	109/ 5.01	37/ 1.70	1/ 0.05	/	/	152.0/ 6.99	6.21133

NUMBER OF BAD RECORDS: 0

FORM (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 9
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=D

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	/	5/ 0.23	27/ 1.24	11/ 0.51	2/ 0.09	/	/	45.0/ 2.07	6.81415
NNE	/	5/ 0.23	83/ 3.81	51/ 2.34	1/ 0.05	/	/	140.0/ 6.43	7.11177
NE	/	6/ 0.28	37/ 1.70	26/ 1.19	/	/	/	69.0/ 3.17	6.89096
ENE	/	10/ 0.46	32/ 1.47	1/ 0.05	/	/	/	43.0/ 1.98	4.83187
E	/	11/ 0.51	29/ 1.33	/	/	/	/	40.0/ 1.84	4.52893
ESE	/	3/ 0.14	13/ 0.60	1/ 0.05	/	/	/	17.0/ 0.78	4.56306
SE	/	9/ 0.41	17/ 0.78	1/ 0.05	/	/	/	27.0/ 1.24	4.12861
SSE	/	6/ 0.28	41/ 1.88	4/ 0.18	/	/	/	51.0/ 2.34	5.12609
S	/	5/ 0.23	43/ 1.98	12/ 0.55	/	/	/	60.0/ 2.76	5.91156
SSW	/	5/ 0.23	43/ 1.98	23/ 1.06	1/ 0.05	/	/	72.0/ 3.31	6.50464
SW	/	11/ 0.51	40/ 1.84	3/ 0.14	/	/	/	54.0/ 2.48	4.83976
WSW	/	12/ 0.55	19/ 0.87	/	/	/	/	31.0/ 1.42	4.02459
W	/	5/ 0.23	15/ 0.69	/	/	/	/	20.0/ 0.92	4.14707
WNW	/	9/ 0.41	7/ 0.32	1/ 0.05	/	/	/	17.0/ 0.78	4.08341
NW	/	5/ 0.23	8/ 0.37	2/ 0.09	/	/	/	15.0/ 0.69	4.76349
NNW	/	1/ 0.05	12/ 0.55	8/ 0.37	/	/	/	21.0/ 0.97	6.72002
TOTAL	/	108/ 4.96	466/21.42	144/ 6.62	4/ 0.18	/	/	722.0/33.18	5.80503

NUMBER OF BAD RECORDS: 1

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

11
16:48 THURSDAY, JANUARY 26, 1984

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=E

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	/	14/ 0.64	15/ 0.69	1/ 0.05	/	/	/	30.0/ 1.38	3.93641
NNE	/	5/ 0.23	8/ 0.37	2/ 0.09	/	/	/	15.0/ 0.69	4.65788
NE	/	2/ 0.09	13/ 0.60	1/ 0.05	/	/	/	16.0/ 0.74	5.09838
ENE	/	6/ 0.28	12/ 0.55	/	/	/	/	18.0/ 0.83	3.82691
E	/	6/ 0.28	5/ 0.23	/	/	/	/	11.0/ 0.51	3.51691
ESE	/	2/ 0.09	3/ 0.14	/	/	/	/	5.0/ 0.23	3.66183
SE	/	6/ 0.28	5/ 0.23	/	/	/	/	11.0/ 0.51	3.38957
SSE	/	15/ 0.69	13/ 0.60	/	/	/	/	28.0/ 1.29	3.43207
S	/	28/ 1.29	26/ 1.19	2/ 0.09	/	/	/	56.0/ 2.57	3.93709
SSW	/	81/ 3.72	62/ 2.85	2/ 0.09	/	/	/	145.0/ 6.66	3.60444
SW	/	43/ 1.98	37/ 1.70	1/ 0.05	/	/	/	81.0/ 3.72	3.58121
WSW	/	13/ 0.60	8/ 0.37	/	/	/	/	21.0/ 0.97	3.19366
W	/	9/ 0.41	5/ 0.23	1/ 0.05	/	/	/	15.0/ 0.69	3.23940
WNW	/	19/ 0.87	5/ 0.23	/	/	/	/	24.0/ 1.10	2.51167
NW	/	10/ 0.46	8/ 0.37	/	/	/	/	18.0/ 0.83	3.20067
NNW	/	17/ 0.78	35/ 1.61	1/ 0.05	/	/	/	53.0/ 2.44	4.33707
TOTAL	/	276/12.68	260/11.95	11/ 0.51	/	/	/	547.0/25.14	3.70276

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2- (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUAR -6, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 13
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=F

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	0.6/ 0.03	11/ 0.51	1/ 0.05	/	/	/	/	12.6/ 0.58	2.21140
NNE	0.3/ 0.01	6/ 0.28	1/ 0.05	/	/	/	/	7.3/ 0.34	2.35390
NE	0.3/ 0.01	5/ 0.23	1/ 0.05	/	/	/	/	6.3/ 0.29	2.06583
ENE	/	/	/	/	/	/	/	/	
E	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	2.77789
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	0.5/ 0.02	9/ 0.41	5/ 0.23	/	/	/	/	14.5/ 0.67	2.87556
S	1.2/ 0.06	23/ 1.06	3/ 0.14	/	/	/	/	27.2/ 1.25	2.49694
SSW	1.8/ 0.08	35/ 1.61	4/ 0.18	/	/	/	/	40.8/ 1.87	2.37535
SW	1.7/ 0.08	34/ 1.56	5/ 0.23	/	/	/	/	40.7/ 1.87	2.41376
WSW	0.7/ 0.03	14/ 0.64	3/ 0.14	1/ 0.05	/	/	/	18.7/ 0.86	2.85992
W	0.5/ 0.02	10/ 0.46	3/ 0.14	/	/	/	/	13.5/ 0.62	2.67725
WNW	0.5/ 0.02	9/ 0.41	2/ 0.09	/	/	/	/	11.5/ 0.53	2.12206
NW	0.7/ 0.03	13/ 0.60	2/ 0.09	/	/	/	/	15.7/ 0.72	2.25642
NNW	1.5/ 0.07	30/ 1.38	22/ 1.01	/	/	/	/	53.5/ 2.46	3.00476
TOTAL	10.0/ 0.46	200/ 9.19	52/ 2.39	1/ 0.05	/	/	/	263.0/12.09	2.57069

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2. (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUAR. 6, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 15
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=G

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	0.6/ 0.03	7/ 0.32	/	/	/	/	/	7.6/ 0.35	1.85727
NNE	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	0.85268
NE	/	/	/	/	/	/	/	/	
ENE	/	/	/	/	/	/	/	/	
E	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	0.77689
ESE	0.2/ 0.01	2/ 0.09	/	/	/	/	/	2.2/ 0.10	1.50452
SE	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	2.11089
SSE	0.2/ 0.01	2/ 0.09	/	/	/	/	/	2.2/ 0.10	1.55000
S	0.6/ 0.03	7/ 0.32	/	/	/	/	/	7.6/ 0.35	1.95820
SSW	0.4/ 0.02	5/ 0.23	/	/	/	/	/	5.4/ 0.25	1.59955
SW	0.2/ 0.01	3/ 0.14	1/ 0.05	/	/	/	/	4.2/ 0.19	2.43374
WSW	0.4/ 0.02	5/ 0.23	2/ 0.09	/	/	/	/	7.4/ 0.34	2.77163
W	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	1.09523
WNW	0.3/ 0.01	4/ 0.18	3/ 0.14	/	/	/	/	7.3/ 0.34	2.36532
NW	0.9/ 0.04	11/ 0.51	/	/	/	/	/	11.9/ 0.55	1.63140
NNW	1.0/ 0.05	13/ 0.60	5/ 0.23	/	/	/	/	19.0/ 0.87	2.62410
TOTAL	5.0/ 0.23	63/ 2.90	11/ 0.51	/	/	/	/	79.0/ 3.63	2.11322

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYST CAROLINA POWER & LIGHT COMPANY 16
PROGRAM IMDO1#25 ,ADFREQ) - FEB 1983 16:48 THURSDAY, JANUARY .., 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENCLOSURE 2

JOINT FREQUENCY OF WIND DIRECTION AND SPEED
FOURTH QUARTER 1983
H. B. ROBINSON STEAM ELECTRIC PLANT

The attached tables present the number and 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, 1983.

The frequencies are presented as a percent of total occurrences for each stability class as well as a summary for all classes of each sensor elevation. 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 Stability categories based on lower level (10m) wind distribution:

A	B	C	D	E	F	G
1.4	2.4	4.0	39.1	28.1	9.4	15.5

2. Wind Speed

	10 Meter	60 Meter
Average Speed (mph)	5.2	9.4
Percent Calm	1.2	0.0
Percent Less than 3.5 mph	33.1	7.1

3. Wind Direction

	10 Meter	60 Meter
Prevailing Direction	NNE	NNE
Percent Occurrence	13.9	15.6

4. Data Recovery

	10 Meter	60 Meter
Percent Good Hours	99.6	99.6

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 17
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR SUMMARY OVER ALL STAB

UPWNDDEG		UPWNDSPD							
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	10/ 0.46	29/ 1.32	72/ 3.27	58/ 2.64	12/ 0.55	/	181.0/ 8.23	10.99352
NNE	/	15/ 0.68	60/ 2.73	164/ 7.46	103/ 4.68	/	/	342.0/15.55	10.23416
NE	/	9/ 0.41	46/ 2.09	109/ 4.96	62/ 2.82	/	/	226.0/10.28	10.15977
ENE	/	5/ 0.23	43/ 1.96	27/ 1.23	12/ 0.55	/	/	87.0/ 3.96	7.83878
E	/	9/ 0.41	47/ 2.14	21/ 0.95	2/ 0.09	/	/	79.0/ 3.59	6.53090
ESE	/	16/ 0.73	28/ 1.27	7/ 0.32	2/ 0.09	4/ 0.18	/	57.0/ 2.59	6.42836
SE	/	6/ 0.27	15/ 0.68	29/ 1.32	1/ 0.05	1/ 0.05	1/ 0.05	53.0/ 2.41	8.42402
SSE	/	8/ 0.36	19/ 0.86	33/ 1.50	14/ 0.64	2/ 0.09	/	76.0/ 3.46	9.01986
S	/	4/ 0.18	25/ 1.14	39/ 1.77	22/ 1.00	1/ 0.05	/	91.0/ 4.14	9.58257
SSW	/	9/ 0.41	45/ 2.05	91/ 4.14	23/ 1.05	4/ 0.18	/	172.0/ 7.82	9.04774
SW	/	6/ 0.27	58/ 2.64	98/ 4.50	54/ 2.46	5/ 0.23	/	222.0/10.10	10.13284
WSW	/	14/ 0.64	61/ 2.77	95/ 4.32	35/ 1.59	1/ 0.05	/	206.0/ 9.37	9.10441
W	/	12/ 0.55	55/ 2.50	77/ 3.50	10/ 0.45	4/ 0.18	/	158.0/ 7.19	8.31006
WNW	/	12/ 0.55	22/ 1.00	31/ 1.41	25/ 1.14	1/ 0.05	/	91.0/ 4.14	9.06515
NW	/	13/ 0.59	26/ 1.18	25/ 1.14	16/ 0.73	2/ 0.09	2/ 0.09	84.0/ 3.82	9.16212
NNW	/	7/ 0.32	16/ 0.73	27/ 1.23	19/ 0.86	3/ 0.14	2/ 0.09	74.0/ 3.37	10.35382
TOTAL	/	155/ 7.05	595/27.06	946/43.02	458/20.83	40/ 1.82	5/ 0.23	2199/ 100	9.41759

NUMBER OF BAD RECORDS: 9

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

19
16:50 THURSDAY, JANUARY 26, 1984

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=A

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	/	1/ 0.05	1/ 0.05	1/ 0.05	/	3.0/ 0.14	14.72402
NNE	/	/	/	2/ 0.09	1/ 0.05	/	/	3.0/ 0.14	12.48401
NE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.16975
ENE	/	/	2/ 0.09	2/ 0.09	5/ 0.23	/	/	9.0/ 0.41	11.12964
E	/	/	/	/	/	/	/	/	
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	/	/	/	/	/	/	
S	/	/	/	/	/	/	/	/	
SSW	/	/	/	/	/	/	/	/	
SW	/	/	/	1/ 0.05	3/ 0.14	/	/	4.0/ 0.18	13.01484
WSW	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	11.50575
W	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.22811
WNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.83675
NW	/	/	/	/	2/ 0.09	/	/	2.0/ 0.09	12.92312
NNW	/	/	/	/	4/ 0.18	/	/	4.0/ 0.18	15.76620
TOTAL	/	/	6/ 0.27	8/ 0.36	16/ 0.73	1/ 0.05	/	31.0/ 1.41	11.97534

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 21
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=B

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	/	1/ 0.05	2/ 0.09	/	/	3.0/ 0.14	14.39607
NNE	/	/	/	5/ 0.23	2/ 0.09	/	/	7.0/ 0.32	10.97691
NE	/	/	3/ 0.14	2/ 0.09	4/ 0.18	/	/	9.0/ 0.41	11.29453
ENE	/	/	4/ 0.18	2/ 0.09	/	/	/	6.0/ 0.27	6.95070
E	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	5.83625
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	/	/	/	/	/	/	
S	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	6.31149
SSW	/	/	/	/	/	1/ 0.05	/	1.0/ 0.05	18.74269
SW	/	/	3/ 0.14	3/ 0.14	2/ 0.09	/	/	8.0/ 0.36	9.91537
WSW	/	/	2/ 0.09	3/ 0.14	/	/	/	5.0/ 0.23	8.41420
W	/	/	4/ 0.18	2/ 0.09	/	/	/	6.0/ 0.27	7.31477
WNW	/	/	/	/	/	/	/	/	
NW	/	/	/	/	1/ 0.05	/	/	1.0/ 0.05	15.52442
NNW	/	/	/	2/ 0.09	1/ 0.05	/	/	3.0/ 0.14	12.35062
TOTAL	/	/	19/ 0.86	21/ 0.95	12/ 0.55	1/ 0.05	/	53.0/ 2.41	9.89205

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2_ (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUAR. .6, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=C

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	1/ 0.05	8/ 0.41	5/ 0.23	1/ 0.05	/	16.0/ 0.73	11.15974
NNE	/	1/ 0.05	2/ 0.09	7/ 0.32	4/ 0.18	/	/	14.0/ 0.64	9.96212
NE	/	1/ 0.05	1/ 0.05	7/ 0.32	6/ 0.27	/	/	15.0/ 0.68	12.07010
ENE	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.28281
E	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	5.14424
ESE	/	1/ 0.05	/	/	/	/	/	1.0/ 0.05	2.86810
SE	/	/	/	/	/	/	/	/	
SSE	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	5.95297
S	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.92846
SSW	/	/	2/ 0.09	/	1/ 0.05	/	/	3.0/ 0.14	9.84380
SW	/	/	3/ 0.14	1/ 0.05	1/ 0.05	/	/	5.0/ 0.23	8.77105
WSW	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	7.42371
W	/	1/ 0.05	4/ 0.18	3/ 0.14	1/ 0.05	1/ 0.05	/	10.0/ 0.45	8.92279
WNW	/	/	/	1/ 0.05	1/ 0.05	/	/	2.0/ 0.09	12.03101
NW	/	/	/	1/ 0.05	4/ 0.18	/	1/ 0.05	6.0/ 0.27	16.66388
NNW	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	8.89611
TOTAL	/	5/ 0.23	23/ 1.05	36/ 1.64	23/ 1.05	2/ 0.09	1/ 0.05	90.0/ 4.09	10.16279

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 25
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=D

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	3/ 0.14	11/ 0.50	29/ 1.32	34/ 1.55	10/ 0.45	/	87.0/ 3.96	12.40486
NNE	/	2/ 0.09	15/ 0.68	90/ 4.09	87/ 3.96	/	/	194.0/ 8.82	11.76713
NE	/	2/ 0.09	19/ 0.86	69/ 3.14	43/ 1.96	/	/	133.0/ 6.05	10.83574
ENE	/	3/ 0.14	16/ 0.73	13/ 0.59	4/ 0.18	/	/	36.0/ 1.64	7.93684
E	/	3/ 0.14	13/ 0.59	5/ 0.23	1/ 0.05	/	/	22.0/ 1.00	6.60860
ESE	/	13/ 0.59	11/ 0.50	4/ 0.18	/	/	/	28.0/ 1.27	4.70056
SE	/	6/ 0.27	7/ 0.32	6/ 0.27	/	/	/	19.0/ 0.86	6.05653
SSE	/	5/ 0.23	10/ 0.45	7/ 0.32	5/ 0.23	1/ 0.05	/	28.0/ 1.27	8.05105
S	/	/	8/ 0.36	10/ 0.45	7/ 0.32	/	/	25.0/ 1.14	9.53454
SSW	/	1/ 0.05	19/ 0.86	26/ 1.18	5/ 0.23	1/ 0.05	/	52.0/ 2.36	8.62899
SW	/	1/ 0.05	15/ 0.68	19/ 0.86	7/ 0.32	1/ 0.05	/	43.0/ 1.96	9.49583
WSW	/	1/ 0.05	16/ 0.73	25/ 1.14	16/ 0.73	/	/	58.0/ 2.64	10.16264
W	/	1/ 0.05	9/ 0.41	33/ 1.50	2/ 0.09	2/ 0.09	/	47.0/ 2.14	9.46040
WNW	/	2/ 0.09	11/ 0.50	16/ 0.73	10/ 0.45	1/ 0.05	/	40.0/ 1.82	9.67483
NW	/	1/ 0.05	7/ 0.32	8/ 0.36	8/ 0.36	2/ 0.09	1/ 0.05	27.0/ 1.23	11.75031
NNW	/	1/ 0.05	4/ 0.18	5/ 0.23	5/ 0.23	3/ 0.14	2/ 0.09	20.0/ 0.91	13.01900
TOTAL	/	45/ 2.05	191/ 8.69	365/16.60	234/10.64	21/ 0.95	3/ 0.14	859.0/39.06	10.24509

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYST(CAROLINA POWER & LIGHT COMPANY 16:50 THURSDAY, JANUARY , 1984

PROGRAM IMDO1#25 (..DFREQ) - FEB 1983

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD

RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 27
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=E

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	5/ 0.23	6/ 0.27	25/ 1.14	16/ 0.73	/	/	52.0/ 2.36	9.99859
NNE	/	2/ 0.09	19/ 0.86	31/ 1.41	8/ 0.36	/	/	60.0/ 2.73	8.70935
NE	/	/	10/ 0.45	20/ 0.91	9/ 0.41	/	/	39.0/ 1.77	10.13541
ENE	/	/	9/ 0.41	6/ 0.27	2/ 0.09	/	/	17.0/ 0.77	8.19331
E	/	2/ 0.09	10/ 0.45	7/ 0.32	1/ 0.05	/	/	20.0/ 0.91	7.57879
ESE	/	/	8/ 0.36	1/ 0.05	2/ 0.09	4/ 0.18	/	15.0/ 0.68	10.87543
SE	/	/	6/ 0.27	15/ 0.68	1/ 0.05	1/ 0.05	1/ 0.05	24.0/ 1.09	10.05433
SSE	/	3/ 0.14	5/ 0.23	13/ 0.59	9/ 0.41	1/ 0.05	/	31.0/ 1.41	10.08192
S	/	2/ 0.09	7/ 0.32	18/ 0.82	13/ 0.59	1/ 0.05	/	41.0/ 1.86	10.68583
SSW	/	2/ 0.09	11/ 0.50	26/ 1.18	10/ 0.45	2/ 0.09	/	51.0/ 2.32	9.74114
SW	/	/	14/ 0.64	26/ 1.18	30/ 1.36	4/ 0.18	/	74.0/ 3.37	12.01028
WSW	/	2/ 0.09	18/ 0.82	35/ 1.59	14/ 0.64	1/ 0.05	/	70.0/ 3.18	9.93163
W	/	2/ 0.09	13/ 0.59	32/ 1.46	7/ 0.32	1/ 0.05	/	55.0/ 2.50	9.37135
WNW	/	2/ 0.09	2/ 0.09	7/ 0.32	11/ 0.50	/	/	22.0/ 1.00	10.90545
NW	/	2/ 0.09	12/ 0.55	7/ 0.32	/	/	/	21.0/ 0.95	6.67556
NNW	/	2/ 0.09	4/ 0.18	13/ 0.59	7/ 0.32	/	/	26.0/ 1.18	10.00051
TOTAL	/	26/ 1.18	154/ 7.00	282/12.82	140/ 6.37	15/ 0.68	1/ 0.05	618.0/28.10	9.90298

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYSTI CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 .OFREQ) - FEB 1983 16:50 THURSDAY, JANUARY , 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 29
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=F

UPWNDDEG	UPWNDSPD								
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	3/ 0.14	5/ 0.23	/	/	/	8.0/ 0.36	8.07904
NNE	/	4/ 0.18	11/ 0.50	16/ 0.73	/	/	/	31.0/ 1.41	6.95401
NE	/	2/ 0.09	5/ 0.23	7/ 0.32	/	/	/	14.0/ 0.64	6.54732
ENE	/	/	/	1/ 0.05	1/ 0.05	/	/	2.0/ 0.09	11.67250
E	/	1/ 0.05	3/ 0.14	2/ 0.09	/	/	/	6.0/ 0.27	5.80846
ESE	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	/	5.0/ 0.23	5.67950
SE	/	/	1/ 0.05	8/ 0.36	/	/	/	9.0/ 0.41	9.52328
SSE	/	/	/	7/ 0.32	/	/	/	7.0/ 0.32	10.01453
S	/	/	/	3/ 0.14	1/ 0.05	/	/	4.0/ 0.18	11.32232
SSW	/	1/ 0.05	2/ 0.09	11/ 0.50	6/ 0.27	/	/	20.0/ 0.91	10.41187
SW	/	/	3/ 0.14	22/ 1.00	8/ 0.36	/	/	33.0/ 1.50	10.45118
WSW	/	2/ 0.09	4/ 0.18	12/ 0.55	1/ 0.05	/	/	19.0/ 0.86	8.55778
W	/	2/ 0.09	8/ 0.36	4/ 0.18	/	/	/	14.0/ 0.64	6.17809
WNW	/	4/ 0.18	1/ 0.05	7/ 0.32	3/ 0.14	/	/	15.0/ 0.68	8.32861
NW	/	2/ 0.09	3/ 0.14	8/ 0.36	1/ 0.05	/	/	14.0/ 0.64	8.47924
NNW	/	1/ 0.05	/	4/ 0.18	1/ 0.05	/	/	6.0/ 0.27	9.34356
TOTAL	/	20/ 0.91	47/ 2.14	118/ 5.37	22/ 1.00	/	/	207.0/ 9.41	8.50957

NUMBER OF BAD RECORDS: 0

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 31
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=G

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	2/ 0.09	8/ 0.36	2/ 0.09	/	/	/	12.0/ 0.55	5.01084
NNE	/	6/ 0.27	13/ 0.59	13/ 0.59	1/ 0.05	/	/	33.0/ 1.50	6.82917
NE	/	4/ 0.18	7/ 0.32	4/ 0.18	/	/	/	15.0/ 0.68	5.27597
ENE	/	2/ 0.09	10/ 0.45	1/ 0.05	/	/	/	13.0/ 0.59	4.81651
E	/	2/ 0.09	18/ 0.82	7/ 0.32	/	/	/	27.0/ 1.23	6.00609
ESE	/	1/ 0.05	6/ 0.27	1/ 0.05	/	/	/	8.0/ 0.36	5.05044
SE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	4.38552
SSE	/	/	2/ 0.09	5/ 0.23	/	/	/	7.0/ 0.32	8.51140
S	/	2/ 0.09	7/ 0.32	7/ 0.32	1/ 0.05	/	/	17.0/ 0.77	7.28011
SSW	/	5/ 0.23	11/ 0.50	28/ 1.27	1/ 0.05	/	/	45.0/ 2.05	7.87097
SW	/	5/ 0.23	20/ 0.91	27/ 1.23	3/ 0.14	/	/	55.0/ 2.50	7.85968
WSW	/	9/ 0.41	18/ 0.82	16/ 0.73	4/ 0.18	/	/	47.0/ 2.14	6.93751
W	/	6/ 0.27	15/ 0.68	3/ 0.14	/	/	/	24.0/ 1.09	5.03585
WNW	/	4/ 0.18	7/ 0.32	/	/	/	/	11.0/ 0.50	3.83525
NW	/	8/ 0.36	4/ 0.18	1/ 0.05	/	/	/	13.0/ 0.59	4.00841
NNW	/	3/ 0.14	8/ 0.36	1/ 0.05	1/ 0.05	/	/	13.0/ 0.59	5.52455
TOTAL	/	59/ 2.68	155/ 7.05	116/ 5.28	11/ 0.50	/	/	341.0/15.51	6.50164

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUAR , 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 17
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR SUMMARY OVER ALL STAB

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	2.0/ 0.09	54/ 2.46	74/ 3.37	48/ 2.18	2/ 0.09	/	/	180.0/ 8.19	5.50432
NNE	1.3/ 0.06	36/ 1.64	154/ 7.00	114/ 5.18	/	/	/	305.3/13.88	6.58964
NE	0.7/ 0.03	20/ 0.91	87/ 3.96	78/ 3.55	/	/	/	185.7/ 8.44	6.85973
ENE	0.7/ 0.03	18/ 0.82	41/ 1.86	14/ 0.64	/	/	/	73.7/ 3.35	5.15459
E	0.8/ 0.04	21/ 0.95	16/ 0.73	2/ 0.09	/	/	/	39.8/ 1.81	3.66974
ESE	0.9/ 0.04	23/ 1.05	9/ 0.41	5/ 0.23	1/ 0.05	/	/	38.9/ 1.77	4.11343
SE	0.9/ 0.04	24/ 1.09	21/ 0.95	2/ 0.09	2/ 0.09	/	/	49.9/ 2.27	4.07172
SSE	1.6/ 0.07	43/ 1.96	61/ 2.77	13/ 0.59	2/ 0.09	/	/	120.6/ 5.48	4.54012
S	3.0/ 0.14	80/ 3.64	49/ 2.23	36/ 1.64	4/ 0.18	/	/	172.0/ 7.82	4.67002
SSW	2.0/ 0.09	53/ 2.41	78/ 3.55	18/ 0.82	4/ 0.18	/	/	155.0/ 7.05	4.96322
SW	1.4/ 0.06	37/ 1.68	78/ 3.59	50/ 2.27	1/ 0.05	/	/	168.4/ 7.66	5.87694
WSW	1.7/ 0.08	45/ 2.05	89/ 4.05	21/ 0.95	1/ 0.05	/	/	157.7/ 7.17	4.88840
W	1.3/ 0.06	35/ 1.59	64/ 2.91	15/ 0.68	1/ 0.05	/	/	116.3/ 5.29	4.90260
WNW	1.6/ 0.07	43/ 1.96	40/ 1.82	13/ 0.59	/	/	/	97.6/ 4.44	4.30064
NW	2.3/ 0.10	61/ 2.77	25/ 1.14	13/ 0.59	2/ 0.09	/	/	103.3/ 4.70	3.85719
NNW	4.0/ 0.18	109/ 4.96	98/ 4.46	21/ 0.95	3/ 0.14	/	/	235.0/10.69	4.22344
TOTAL	26.0/ 1.18	702/31.92	985/44.79	463/21.06	23/ 1.05	/	/	2199/ 100	5.19651

NUMBER OF BAD RECORDS: 9

ENVIRONMENTAL MONITORING SYST CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 19
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=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	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	10.69701
NNE	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.97899
NE	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14	5.57501
ENE	/	/	1/ 0.05	6/ 0.27	/	/	/	7.0/ 0.32	8.62812
E	/	/	/	/	/	/	/	/	
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	/	/	/	/	/	/	
S	/	/	/	/	/	/	/	/	
SSW	/	/	/	/	/	/	/	/	
SW	/	/	/	5/ 0.23	/	/	/	5.0/ 0.23	9.47140
WSW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.40370
W	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.32816
WNW	/	/	/	/	/	/	/	/	
NW	/	/	/	1/ 0.05	/	/	/	1.0/ 0.05	9.00450
NNW	/	/	/	5/ 0.23	/	/	/	5.0/ 0.23	9.75821
TOTAL	/	/	9/ 0.41	22/ 1.00	/	/	/	31.0/ 1.41	8.48542

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUAR 6, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 21
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=B

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	/	/	2/ 0.09	3/ 0.14	/	/	/	5.0/ 0.23	8.67433
NNE	/	/	2/ 0.09	3/ 0.14	/	/	/	5.0/ 0.23	7.60713
NE	/	1/ 0.05	4/ 0.18	5/ 0.23	/	/	/	10.0/ 0.45	7.54043
ENE	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	5.77955
E	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	4.78572
ESE	/	/	/	/	/	/	/	/	
SE	/	/	/	/	/	/	/	/	
SSE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	3.76855
S	/	/	1/ 0.05	/	1/ 0.05	/	/	2.0/ 0.09	10.30515
SSW	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	8.23745
SW	/	/	3/ 0.14	3/ 0.14	/	/	/	6.0/ 0.27	7.39258
WSW	/	/	5/ 0.23	2/ 0.09	/	/	/	7.0/ 0.32	6.66921
W	/	/	2/ 0.09	2/ 0.09	/	/	/	4.0/ 0.18	7.13273
WNW	/	/	/	/	/	/	/	/	
NW	/	/	/	/	/	/	/	/	
NNW	/	/	/	4/ 0.18	/	/	/	4.0/ 0.18	8.71269
TOTAL	/	1/ 0.05	27/ 1.23	24/ 1.09	1/ 0.05	/	/	53.0/ 2.41	7.36899

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2 ,MDFREQ) - FEB 1983 16:48 THURSDAY, JANUAR 3, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

16:48 THURSDAY, JANUARY 26, 1984

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=C

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	/	/	11/ 0.50	8/ 0.36	/	/	/	19.0/ 0.86	7.41248
NNE	/	1/ 0.05	5/ 0.23	5/ 0.23	/	/	/	11.0/ 0.50	7.35519
NE	/	1/ 0.05	2/ 0.09	12/ 0.55	/	/	/	15.0/ 0.68	8.48276
ENE	/	/	4/ 0.18	/	/	/	/	4.0/ 0.18	5.42771
E	/	2/ 0.09	1/ 0.05	/	/	/	/	3.0/ 0.14	3.80746
ESE	/	/	/	/	/	/	/	/	
SE	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.98254
SSE	/	/	2/ 0.09	/	/	/	/	2.0/ 0.09	6.44489
S	/	/	1/ 0.05	/	1/ 0.05	/	/	2.0/ 0.09	9.84659
SSW	/	1/ 0.05	2/ 0.09	/	/	/	/	3.0/ 0.14	4.87466
SW	/	/	3/ 0.14	2/ 0.09	/	/	/	5.0/ 0.23	7.18025
WSW	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	6.19643
W	/	/	7/ 0.32	1/ 0.05	/	/	/	8.0/ 0.36	6.59288
WNW	/	/	1/ 0.05	2/ 0.09	/	/	/	3.0/ 0.14	8.88777
NW	/	/	/	4/ 0.18	1/ 0.05	/	/	5.0/ 0.23	11.12889
NNW	/	/	3/ 0.14	/	/	/	/	3.0/ 0.14	6.50325
TOTAL	/	6/ 0.27	47/ 2.14	35/ 1.59	2/ 0.09	/	/	90.0/ 4.09	7.31927

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY 16:48 THURSDAY, JANUAR 6, 1984
PROGRAM IMDO1#2. (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 25
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=D

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	/	5/ 0.23	36/ 1.64	35/ 1.59	2/ 0.09	/	/	78.0/ 3.55	7.16555
NNE	/	4/ 0.18	107/ 4.87	101/ 4.59	/	/	/	212.0/ 9.64	7.44185
NE	/	7/ 0.32	61/ 2.77	56/ 2.55	/	/	/	124.0/ 5.64	7.16823
ENE	/	6/ 0.27	21/ 0.95	7/ 0.32	/	/	/	34.0/ 1.55	5.61016
E	/	9/ 0.41	12/ 0.55	1/ 0.05	/	/	/	22.0/ 1.00	4.03004
ESE	/	13/ 0.59	7/ 0.32	/	/	/	/	20.0/ 0.91	3.20994
SE	/	7/ 0.32	14/ 0.64	/	/	/	/	21.0/ 0.95	3.95991
SSE	/	4/ 0.18	19/ 0.86	6/ 0.27	1/ 0.05	/	/	30.0/ 1.36	6.09082
S	/	4/ 0.18	20/ 0.91	17/ 0.77	1/ 0.05	/	/	42.0/ 1.91	6.83701
SSW	/	3/ 0.14	40/ 1.82	7/ 0.32	1/ 0.05	/	/	51.0/ 2.32	6.10207
SW	/	3/ 0.14	21/ 0.95	26/ 1.18	/	/	/	50.0/ 2.27	7.23295
WSW	/	3/ 0.14	30/ 1.36	11/ 0.50	/	/	/	44.0/ 2.00	6.32374
W	/	3/ 0.14	24/ 1.09	10/ 0.45	/	/	/	37.0/ 1.68	6.16945
WNW	/	3/ 0.14	23/ 1.05	9/ 0.41	/	/	/	35.0/ 1.59	6.38986
NW	/	5/ 0.23	17/ 0.77	8/ 0.36	1/ 0.05	/	/	31.0/ 1.41	6.20902
NNW	/	/	13/ 0.59	12/ 0.55	3/ 0.14	/	/	28.0/ 1.27	8.61859
TOTAL	/	79/ 3.59	465/21.15	306/13.92	9/ 0.41	/	/	859.0/39.06	6.70419

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SY[illegible] - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2[illegible] (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUAR[illegible] 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 27
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=E

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	0.1/ 0.00	10/ 0.45	21/ 0.95	/	/	/	/	31.1/ 1.41	4.37276
NNE	0.1/ 0.00	11/ 0.50	37/ 1.68	3/ 0.14	/	/	/	51.1/ 2.32	4.81641
NE	0.1/ 0.00	7/ 0.32	17/ 0.77	5/ 0.23	/	/	/	29.1/ 1.32	5.38112
ENE	0.1/ 0.00	8/ 0.36	10/ 0.45	/	/	/	/	18.1/ 0.82	3.69107
E	0.1/ 0.00	8/ 0.36	1/ 0.05	1/ 0.05	/	/	/	10.1/ 0.46	3.33458
ESE	0.0/ 0.00	4/ 0.18	1/ 0.05	6/ 0.23	1/ 0.05	/	/	11.0/ 0.50	7.50981
SE	0.1/ 0.00	8/ 0.36	6/ 0.27	2/ 0.09	2/ 0.09	/	/	18.1/ 0.82	5.52485
SSE	0.1/ 0.00	10/ 0.45	33/ 1.50	7/ 0.32	1/ 0.05	/	/	51.1/ 2.32	5.22342
S	0.1/ 0.00	11/ 0.50	23/ 1.05	18/ 0.82	1/ 0.05	/	/	53.1/ 2.41	6.13049
SSW	0.2/ 0.01	17/ 0.77	26/ 1.18	10/ 0.45	3/ 0.14	/	/	56.2/ 2.56	5.58642
SW	0.2/ 0.01	15/ 0.68	40/ 1.82	14/ 0.64	1/ 0.05	/	/	70.2/ 3.19	5.72674
WSW	0.2/ 0.01	16/ 0.73	44/ 2.00	6/ 0.27	1/ 0.05	/	/	67.2/ 3.06	4.83600
W	0.2/ 0.01	15/ 0.68	28/ 1.27	2/ 0.09	1/ 0.05	/	/	46.2/ 2.10	4.55783
WNW	0.1/ 0.00	8/ 0.36	14/ 0.64	2/ 0.09	/	/	/	24.1/ 1.10	4.23361
NW	0.1/ 0.00	6/ 0.27	5/ 0.23	/	/	/	/	11.1/ 0.50	3.47996
NNW	0.2/ 0.01	20/ 0.91	50/ 2.27	/	/	/	/	70.2/ 3.19	4.42315
TOTAL	2.0/ 0.09	174/ 7.91	356/16.19	75/ 3.41	11/ 0.50	/	/	618.0/28.10	5.04358

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 29
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=F

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	0.1/ 0.00	11/ 0.50	1/ 0.05	/	/	/	/	12.1/ 0.55	2.47437
NNE	0.0/ 0.00	5/ 0.23	1/ 0.05	/	/	/	/	6.0/ 0.27	2.02323
NE	0.0/ 0.00	3/ 0.14	/	/	/	/	/	3.0/ 0.14	2.39008
ENE	0.0/ 0.00	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.55177
E	0.0/ 0.00	1/ 0.05	/	/	/	/	/	1.0/ 0.05	0.98382
ESE	0.0/ 0.00	2/ 0.09	1/ 0.05	/	/	/	/	3.0/ 0.14	2.64021
SE	/	/	/	/	/	/	/	/	
SSE	0.1/ 0.00	11/ 0.50	6/ 0.27	/	/	/	/	17.1/ 0.78	3.04294
S	0.1/ 0.00	19/ 0.86	4/ 0.18	1/ 0.05	/	/	/	24.1/ 1.10	2.92835
SSW	0.1/ 0.00	12/ 0.55	9/ 0.41	/	/	/	/	21.1/ 0.96	3.57643
SW	0.1/ 0.00	13/ 0.59	12/ 0.55	/	/	/	/	25.1/ 1.14	3.46953
WSW	0.1/ 0.00	15/ 0.68	2/ 0.09	/	/	/	/	17.1/ 0.78	2.36034
W	0.1/ 0.00	8/ 0.36	1/ 0.05	/	/	/	/	9.1/ 0.41	2.36656
WNW	0.1/ 0.00	13/ 0.59	2/ 0.09	/	/	/	/	15.1/ 0.69	2.31848
NW	0.1/ 0.00	16/ 0.73	2/ 0.09	/	/	/	/	18.1/ 0.82	2.24652
NNW	0.1/ 0.00	18/ 0.82	15/ 0.68	/	/	/	/	33.1/ 1.51	3.20830
TOTAL	1.0/ 0.05	148/ 6.73	57/ 2.59	1/ 0.05	/	/	/	207.0/ 9.41	2.85877

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYST - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2 MDFREQ) - FEB 1983 16:48 THURSDAY, JANUAR ., 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 31
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=4TH QTR STAB=G

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	2.2/ 0.10	28/ 1.27	3/ 0.14	/	/	/	/	33.2/ 1.51	1.78099
NNE	1.2/ 0.05	15/ 0.68	/	/	/	/	/	16.2/ 0.74	1.48941
NE	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	1.11039
ENE	0.2/ 0.01	3/ 0.14	/	/	/	/	/	3.2/ 0.15	1.12295
E	0.1/ 0.00	1/ 0.05	/	/	/	/	/	1.1/ 0.05	0.89816
ESE	0.3/ 0.01	4/ 0.18	/	/	/	/	/	4.3/ 0.20	0.94135
SE	0.6/ 0.03	8/ 0.36	/	/	/	/	/	8.6/ 0.39	1.28842
SSE	1.4/ 0.06	18/ 0.82	/	/	/	/	/	19.4/ 0.88	1.42037
S	3.6/ 0.16	46/ 2.09	/	/	/	/	/	49.6/ 2.26	1.59689
SSW	1.6/ 0.07	20/ 0.91	/	/	/	/	/	21.6/ 0.98	1.64587
SW	0.5/ 0.02	6/ 0.27	/	/	/	/	/	6.5/ 0.30	1.50394
WSW	0.9/ 0.04	11/ 0.50	3/ 0.14	/	/	/	/	14.9/ 0.68	2.23767
W	0.7/ 0.03	9/ 0.41	/	/	/	/	/	9.7/ 0.44	1.50031
WNW	1.5/ 0.07	19/ 0.86	/	/	/	/	/	20.5/ 0.93	1.52900
NW	2.7/ 0.12	34/ 1.55	1/ 0.05	/	/	/	/	37.7/ 1.71	1.61152
NNW	5.6/ 0.25	71/ 3.23	17/ 0.77	/	/	/	/	93.6/ 4.26	2.45473
TOTAL	23.0/ 1.05	294/13.37	24/ 1.09	/	/	/	/	341.0/15.51	1.83587

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY

PROGRAM IMDO1#2[illegible] (MDFREQ) - FEB 1983 16:48 THURSDAY, JANUAR[illegible]6, 1984

JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD

RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENCLOSURE 3

DIFFUSION ANALYSIS
GROUND LEVEL RELEASE
JULY 1 - DECEMBER 31,1983
H. B. ROBINSON STEAM ELECTRIC PLANT

Description of Attachment

The attached tables provide estimate of relative ground-level concentration (X/Q) and deposition (D/Q) for the period July 1 through December 31, 1983 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 buildings. The computer code used (XOQDOQ) was received from the U. S. Nuclear Regulatory Commission (NRC), Hydrology Meteorology Branch.(1)

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 1000 meters.
5. Calm winds included with joint frequency are 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).

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(1) Program for the Meteorological Evaluation of Routine Effluent Release at Nuclear Power Stations, J. F. Sagendorf and J. T. Goll, August 29, 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 3.1E-05 in the SSE sector. Site boundary maximums for previous six-month periods are as follows:

JAN - JUN 1982	2.2E-05	SSE SECTOR
JUL - DEC 1982	4.4E-05	SSE SECTOR
JAN - JUN 1983	4.9E-05	SSE SECTOR

PRINTOUT OF INPUT CARDS

3	1	1000000000000000000000000000000000000000110100000000000110100000000000000000000000																
4	2	XOQDOQ - ROBINSON GROUND AND MIXED MODE RELEASES JUL-DEC 83																
5	3	7	7	10	4375	5	5	2										
6	4	11.03	101.00	2.26	-8.00													
7	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
8	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	0.0
9	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	0.0
10	6	6.000	12.000	5.000	6.000	6.000	11.000	17.000	13.000	5.000	16.000	14.000	5.000	5.000	5.000	3.000	1.000	
11	6	12.000	28.000	18.000	13.000	3.000	2.000	1.000	7.000	15.000	10.000	14.000	6.000	2.000	1.000	3.000	5.000	
12	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	1.000	0.0	0.0	0.0	0.0	0.0	
13	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	
14	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	
15	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	
16	6	0.0	0.0	1.000	0.0	1.000	1.000	1.000	1.000	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17	6	11.000	15.000	11.000	13.000	9.000	8.000	10.000	8.000	4.000	4.000	19.000	15.000	9.000	2.000	7.000	2.000	
18	6	8.000	11.000	15.000	4.000	1.000	0.0	1.000	6.000	2.000	2.000	8.000	4.000	3.000	0.0	0.0	4.000	
19	6	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	1.000	1.000	0.0	0.0	0.0	0.0	0.0	0.0	
20	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	
21	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	
22	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	
23	6	0.0	1.000	1.000	0.0	2.000	1.000	2.000	1.000	0.0	1.000	0.0	0.0	2.000	0.0	0.0	0.0	
24	6	26.000	12.000	11.000	15.000	8.000	8.000	5.000	8.000	2.000	5.000	15.000	11.000	14.000	8.000	1.000	7.000	
25	6	9.000	13.000	16.000	5.000	1.000	0.0	1.000	1.000	4.000	5.000	7.000	1.000	2.000	2.000	4.000	1.000	
26	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	1.000	0.0	0.0	0.0	0.0	1.000	0.0	
27	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	
28	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	
29	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	
30	6	10.000	9.000	13.000	16.000	20.000	16.000	16.000	10.000	9.000	8.000	14.000	15.000	8.000	12.000	10.000	1.000	
31	6	63.000	190.000	98.000	53.000	41.000	20.000	31.000	60.000	63.000	83.000	61.000	49.000	39.000	30.000	25.000	25.000	
32	6	46.000	152.000	82.000	8.000	1.000	1.000	1.000	10.000	29.000	30.000	29.000	11.000	10.000	10.000	10.000	20.000	
33	6	4.000	1.000	0.0	0.0	0.0	0.0	0.0	1.000	1.000	2.000	0.0	0.0	0.0	0.0	1.000	3.000	
34	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	
35	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	
36	6	0.100	0.100	0.0	0.100	0.100	0.0	0.100	0.100	0.200	0.400	0.300	0.100	0.100	0.100	0.100	0.200	
37	6	24.000	16.000	9.000	14.000	14.000	6.000	14.000	25.000	39.000	98.000	58.000	29.000	24.000	27.000	16.000	37.000	
38	6	36.000	45.000	30.000	22.000	6.000	4.000	11.000	46.000	49.000	88.000	77.000	52.000	33.000	19.000	13.000	85.000	
39	6	1.000	5.000	6.000	0.0	1.000	5.000	2.000	7.000	20.000	12.000	15.000	6.000	3.000	2.000	0.0	1.000	
40	6	0.0	0.0	0.0	0.0	0.0	1.000	2.000	1.000	1.000	3.000	1.000	1.000	1.000	0.0	0.0	0.0	
41	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	
42	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	
43	6	0.700	0.300	0.300	0.0	0.100	0.100	0.0	0.600	1.300	1.500	1.500	0.900	0.600	0.700	0.900	1.500	
44	6	22.000	11.000	8.000	1.000	2.000	2.000	0.0	20.000	42.000	47.000	47.000	29.000	18.000	22.000	29.000	48.000	
45	6	2.000	2.000	1.000	1.000	0.0	1.000	0.0	11.000	7.000	13.000	17.000	5.000	4.000	4.000	4.000	37.000	
46	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	1.000	0.0	0.0	0.0	0.0	
47	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	
48	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	
49	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	
50	6	2.700	1.300	0.100	0.200	0.200	0.500	0.700	1.600	4.200	2.000	0.700	1.300	0.800	1.800	3.500	6.600	
51	6	35.000	16.000	1.000	3.000	2.000	6.000	9.000	20.000	53.000	25.000	9.000	16.000	10.000	23.000	45.000	84.000	
52	6	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	5.000	0.0	3.000	1.000	22.000	
53	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	
54	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	
55	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	
56	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	
57	7	200.	0.750	3.500	7.500	12.500	18.500	25.000	26.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
58	10	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	402.	
59	11	69.	71.	68.	68.	71.	73.	73.	70.	69.	71.	69.	73.	74.	72.	69.	69.	
60	12	451.	805.	579.	579.	805.	885.	418.	418	418.	207.	207.	207.	418.	805.	418.	418.	

FORM 3113 (02/83)

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 11      70.   73.   69.   69.   73.   78.   73.   71    70.   76.   72.   84.   74.   76.   69.   69.
 10    1207. 1207.  805.  966.  966. 1207. 1207. 1207. 1207. 2012. 1625. 1448. 1207.  966.  483.  483.
 11      72.   76.   70.   71.   74.   81.   82.   75.   79.   82.   73.   87.   86.   78.   69.   69.
 10    2012. 2012. 1207. 1207. 1207. 1448. 2012. 2012. 2012. 2253. 2012. 2012. 1448. 1207. 1207. 1207.
 11      74.   81.   72.   73.   75.   84.   91.   79.   74.   83.   74.  104.   89.   80.   69.   69.
 10    2816. 2816. 2012. 2012. 2012. 2012. 2816. 2816. 2816. 2655. 2816. 2816. 2012. 2012. 2012. 2012.
 11      76.   87.   77.   77.   80.   88.   92.   83.   77.   86.   76.  114.   98.   88.   69.   69.
 10    3621. 3347. 2816. 2816. 2816. 2816. 3621. 3042. 3122. 2816. 3621. 3541. 2816. 2816. 2816. 2816.
 11      79.   90.   81.   82.   85.   89.  102.   84.   78.   87.   78.  115.  109.   91.   69.   69.
 10    4426. 3621. 3621. 3621. 3621. 3621. 4426. 3621. 3621. 3621. 4426. 3621. 3621. 3621. 3621. 3621.
 11      81.   92.   86.   87.   88.   90.  111.   87.   79.   92.   81.  122.  120.   91.   69.   69.
 10    5230. 4426. 4426. 4426. 4426. 4426. 5230. 4426. 4426. 4426. 5230. 4426. 4426. 4426. 4426. 4426.
 11      83.   95.   91.   91.   88.   90.  121.   91.   82.   99.   83.  122.  120.   91.   69.   69.
 10    6035. 5230. 5230. 5230. 5230. 5230. 6035. 5230. 5230. 5230. 6035. 5230. 5230. 5230. 5230. 5230.
 11      85.   95.   95.   91.   88.   91.  127.   96.   84.  109.   85.  122.  120.   91.   69.   69.
 10    7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644. 7644.
 11      87.   95.   95.   91.   88.  122.  133.   96.   91.  118.  101.  122.  120.   91.   69.   69.
 12      16    2   14   16   16
 13    SITE BOUNDARY
 14        1 0.28    2 0.29    3 0.36    4 0.36    5 0.50    6 0.55    7 1.23    8 1.89
 9 1.94   10 1.26   11 1.01   12 0.86   13 0.61   14 0.50   15 0.29   16 0.26
 13    MILK COW
 14       11 1.30   13 4.20
 13    MEAT ANIMAL
 14        1 2.32    2 2.08    3 2.27    4 2.69    5 3.97    6 4.07    7 1.60    8 2.84
 9 2.93   10 1.65   11 1.16   12 2.41   13 3.12   14 1.99
 13    RESIDENT
 14        1 0.30    2 0.30    3 0.40    4 0.40    5 0.60    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
 13    GARDEN
 14        1 0.40    2 0.50    3 0.50    4 0.60    5 0.60    6 0.90    7 1.30    8 3.00
 9 2.90   10 1.40   11 1.30   12 2.20   13 2.80   14 0.60   15 0.30   16 0.30
 15    EXIT ONE GROUND LEVEL RELEASE JUL-DEC 83
 16      0.0    0.0    0.0   59.000 1370.0   11.0  0.0
 17    A   0    0    0
 15    EXIT TWO MIXED-MODE RELEASE    JUL-DEC 83
 16     20.100  1.400 60.700 59.000 1370.0   11.0  0.0
 17    B   0    0    0
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XOQDOQ - ROBINSON GROUND AND MIXED MODE RELEASES JUL-DEC 83

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	0.0	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= 3,J= 1	0.14	0.27	0.11	0.14	0.14	0.25	0.39	0.30	0.11	0.37	0.32	0.11	0.11	0.11	0.07	0.02
I= 4,J= 1	0.27	0.64	0.41	0.30	0.07	0.05	0.02	0.16	0.34	0.23	0.32	0.14	0.05	0.02	0.07	0.11
I= 5,J= 1	0.0	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
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	0.0	0.02	0.0	0.02	0.02	0.02	0.02	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I= 3,J= 2	0.25	0.34	0.25	0.30	0.21	0.18	0.23	0.18	0.09	0.09	0.43	0.34	0.21	0.05	0.16	0.05
I= 4,J= 2	0.18	0.25	0.34	0.09	0.02	0.0	0.02	0.14	0.05	0.05	0.18	0.09	0.07	0.0	0.0	0.09
I= 5,J= 2	0.0	0.0	0.02	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= 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	0.0	0.02	0.02	0.0	0.05	0.02	0.05	0.02	0.0	0.02	0.0	0.0	0.05	0.0	0.0	0.0
I= 3,J= 3	0.59	0.27	0.25	0.34	0.18	0.18	0.11	0.18	0.05	0.11	0.34	0.25	0.32	0.18	0.02	0.16
I= 4,J= 3	0.21	0.30	0.37	0.11	0.02	0.0	0.02	0.02	0.09	0.11	0.16	0.02	0.05	0.05	0.09	0.02
I= 5,J= 3	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	0.02	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	0.23	0.21	0.30	0.37	0.46	0.37	0.37	0.23	0.21	0.18	0.32	0.34	0.18	0.27	0.23	0.02
I= 3,J= 4	1.44	4.34	2.24	1.21	0.94	0.46	0.71	1.37	1.44	1.90	1.39	1.12	0.89	0.69	0.57	0.57
I= 4,J= 4	1.05	3.47	1.87	0.18	0.02	0.02	0.02	0.23	0.66	0.69	0.66	0.25	0.23	0.23	0.23	0.46
I= 5,J= 4	0.09	0.02	0.0	0.0	0.0	0.0	0.0	0.02	0.02	0.05	0.0	0.0	0.0	0.0	0.02	0.07
I= 6,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= 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	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
I= 2,J= 5	0.55	0.37	0.21	0.32	0.32	0.14	0.32	0.57	0.89	2.24	1.33	0.66	0.55	0.62	0.37	0.85
I= 3,J= 5	0.82	1.03	0.69	0.50	0.14	0.09	0.25	1.05	1.12	2.01	1.76	1.19	0.75	0.43	0.30	1.94
I= 4,J= 5	0.02	0.11	0.14	0.0	0.02	0.11	0.05	0.16	0.46	0.27	0.34	0.14	0.07	0.05	0.0	0.02
I= 5,J= 5	0.0	0.0	0.0	0.0	0.0	0.02	0.05	0.02	0.02	0.07	0.02	0.02	0.02	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	0.01	0.0	0.00	0.00	0.0	0.01	0.03	0.03	0.03	0.02	0.01	0.02	0.02	0.03
I= 2,J= 6	0.50	0.25	0.18	0.02	0.05	0.05	0.0	0.46	0.96	1.07	1.07	0.66	0.41	0.50	0.66	1.10
I= 3,J= 6	0.05	0.05	0.02	0.02	0.0	0.02	0.0	0.25	0.16	0.30	0.39	0.11	0.09	0.09	0.09	0.85
I= 4,J= 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.02	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	0.06	0.03	0.00	0.00	0.00	0.01	0.02	0.04	0.10	0.05	0.02	0.03	0.02	0.04	0.08	0.15
I= 2,J= 7	0.80	0.37	0.02	0.07	0.05	0.14	0.21	0.46	1.21	0.57	0.21	0.37	0.23	0.53	1.03	1.92
I= 3,J= 7	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.11	0.0	0.07	0.02	0.50
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	7.35	12.36	7.48	3.98	2.71	2.14	2.85	5.90	8.11	10.49	9.36	6.02	4.31	3.95	4.06	8.94

TOTAL HOURS CONSIDERED ARE 4375

WIND MEASURED AT 11.0 METERS.

THE MAXIMUM WIND SPEED (METERS/SEC) IN EACH CLASS IS: 0.335 1.565 3.353 5.588 8.270 11.176 11.623

THE 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.	68.	68.	71.	73.	73.	70.	69.	71.	69.	73.	74.	72.	69.	69.
DISTANCE	451.	805.	579.	579.	805.	885.	418.	418.	418.	207.	207.	207.	418.	805.	418.	418.
ELEVATION	70.	73.	69.	69.	73.	78.	73.	71.	70.	76.	72.	84.	74.	76.	69.	69.
DISTANCE	1207.	1207.	805.	966.	966.	1207.	1207.	1207.	1207.	2012.	1625.	1448.	1207.	966.	483.	483.
ELEVATION	72.	76.	70.	71.	74.	81.	82.	75.	79.	82.	73.	87.	86.	78.	69.	69.
DISTANCE	2012.	2012.	1207.	1207.	1207.	1448.	2012.	2012.	2012.	2253.	2012.	2012.	1448.	1207.	1207.	1207.
ELEVATION	74.	81.	72.	73.	75.	84.	91.	79.	74.	83.	74.	104.	89.	80.	69.	69.
DISTANCE	2816.	2816.	2012.	2012.	2012.	2012.	2816.	2816.	2816.	2655.	2816.	2816.	2012.	2012.	2012.	2012.
ELEVATION	76.	87.	77.	77.	80.	88.	92.	83.	77.	86.	76.	114.	98.	88.	69.	69.
DISTANCE	3621.	3347.	2816.	2816.	2816.	2816.	3621.	3042.	3122.	2816.	3621.	3541.	2816.	2816.	2816.	2816.
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.	88.	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.	96.	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 ONE GROUND LEVEL RELEASE JUL-DEC 83
NO DECAY, UNDEPLETED

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	1.614E-05	4.916E-06	2.492E-06	1.602E-06	8.801E-07	5.956E-07	4.445E-07	3.502E-07	2.864E-07	2.407E-07	2.066E-07
SSW	1.323E-05	4.330E-06	2.286E-06	1.478E-06	8.062E-07	5.329E-07	3.886E-07	3.005E-07	2.420E-07	2.007E-07	1.703E-07
SW	6.368E-06	2.150E-06	1.159E-06	7.560E-07	4.137E-07	2.700E-07	1.941E-07	1.483E-07	1.181E-07	9.709E-08	8.170E-08
WSW	4.469E-06	1.481E-06	8.027E-07	5.203E-07	2.829E-07	1.850E-07	1.335E-07	1.023E-07	8.181E-08	6.742E-08	5.688E-08
W	3.837E-06	1.282E-06	6.936E-07	4.502E-07	2.452E-07	1.603E-07	1.156E-07	8.857E-08	7.076E-08	5.829E-08	4.915E-08
WNW	3.679E-06	1.167E-06	6.045E-07	3.875E-07	2.101E-07	1.395E-07	1.024E-07	7.962E-08	6.441E-08	5.364E-08	4.568E-08
NW	4.983E-06	1.574E-06	8.258E-07	5.292E-07	2.866E-07	1.905E-07	1.399E-07	1.089E-07	8.817E-08	7.348E-08	6.260E-08
NNW	1.235E-05	3.790E-06	1.956E-06	1.273E-06	7.078E-07	4.778E-07	3.548E-07	2.784E-07	2.268E-07	1.901E-07	1.627E-07
N	2.375E-05	7.139E-06	3.608E-06	2.335E-06	1.296E-06	8.838E-07	6.631E-07	5.245E-07	4.303E-07	3.626E-07	3.119E-07
NNE	2.319E-05	7.157E-06	3.789E-06	2.500E-06	1.407E-06	9.486E-07	7.018E-07	5.489E-07	4.461E-07	3.729E-07	3.185E-07
NE	1.696E-05	5.262E-06	2.783E-06	1.848E-06	1.047E-06	7.035E-07	5.181E-07	4.037E-07	3.270E-07	2.726E-07	2.323E-07
ENE	1.303E-05	4.013E-06	2.081E-06	1.362E-06	7.618E-07	5.140E-07	3.809E-07	2.984E-07	2.428E-07	2.032E-07	1.738E-07
E	8.652E-06	2.682E-06	1.401E-06	9.173E-07	5.120E-07	3.440E-07	2.540E-07	1.984E-07	1.610E-07	1.345E-07	1.148E-07
ESE	1.192E-05	3.620E-06	1.844E-06	1.197E-06	6.653E-07	4.519E-07	3.377E-07	2.662E-07	2.179E-07	1.832E-07	1.573E-07
SE	1.665E-05	4.937E-06	2.439E-06	1.565E-06	8.640E-07	5.928E-07	4.479E-07	3.563E-07	2.937E-07	2.485E-07	2.144E-07
SSE	3.352E-05	9.890E-06	4.913E-06	3.161E-06	1.751E-06	1.203E-06	9.097E-07	7.241E-07	5.971E-07	5.053E-07	4.363E-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	1.803E-07	1.071E-07	7.419E-08	4.446E-08	3.104E-08	2.352E-08	1.878E-08	1.553E-08	1.318E-08	1.141E-08	1.003E-08
SSW	1.471E-07	8.405E-08	5.673E-08	3.280E-08	2.234E-08	1.663E-08	1.308E-08	1.069E-08	8.980E-09	7.706E-09	6.723E-09
SW	7.007E-08	3.897E-08	2.579E-08	1.450E-08	9.689E-09	7.102E-09	5.517E-09	4.460E-09	3.712E-09	3.159E-09	2.736E-09
WSW	4.890E-08	2.746E-08	1.831E-08	1.041E-08	7.014E-09	5.177E-09	4.044E-09	3.286E-09	2.747E-09	2.346E-09	2.039E-09
W	4.223E-08	2.367E-08	1.575E-08	8.930E-09	6.006E-09	4.424E-09	3.452E-09	2.801E-09	2.339E-09	1.996E-09	1.733E-09
WNW	3.959E-08	2.296E-08	1.566E-08	9.198E-09	6.339E-09	4.760E-09	3.772E-09	3.101E-09	2.620E-09	2.258E-09	1.978E-09
NW	5.429E-08	3.154E-08	2.154E-08	1.266E-08	8.731E-09	6.557E-09	5.197E-09	4.274E-09	3.610E-09	3.113E-09	2.727E-09
NNW	1.416E-07	8.331E-08	5.735E-08	3.403E-08	2.358E-08	1.777E-08	1.412E-08	1.164E-08	9.843E-09	8.497E-09	7.451E-09
N	2.726E-07	1.629E-07	1.133E-07	6.813E-08	4.763E-08	3.613E-08	2.886E-08	2.388E-08	2.028E-08	1.756E-08	1.544E-08
NNE	2.766E-07	1.613E-07	1.104E-07	6.489E-08	4.465E-08	3.347E-08	2.647E-08	2.173E-08	1.832E-08	1.576E-08	1.379E-08
NE	2.014E-07	1.166E-07	7.933E-08	4.631E-08	3.172E-08	2.368E-08	1.867E-08	1.529E-08	1.286E-08	1.104E-08	9.641E-09
ENE	1.511E-07	8.857E-08	6.080E-08	3.594E-08	2.484E-08	1.868E-08	1.481E-08	1.219E-08	1.029E-08	8.876E-09	7.775E-09
E	9.967E-08	5.809E-08	3.972E-08	2.337E-08	1.611E-08	1.209E-08	9.576E-09	7.867E-09	6.639E-09	5.719E-09	5.006E-09
ESE	1.372E-07	8.145E-08	5.641E-08	3.374E-08	2.351E-08	1.779E-08	1.418E-08	1.171E-08	9.932E-09	8.590E-09	7.546E-09
SE	1.880E-07	1.136E-07	7.956E-08	4.834E-08	3.402E-08	2.594E-08	2.080E-08	1.727E-08	1.470E-08	1.276E-08	1.125E-08
SSE	3.826E-07	2.312E-07	1.620E-07	9.845E-08	6.929E-08	5.283E-08	4.236E-08	3.517E-08	2.994E-08	2.599E-08	2.291E-08

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

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.635E-06	9.142E-07	4.471E-07	2.872E-07	2.069E-07	1.087E-07	4.510E-08	2.363E-08	1.556E-08	1.143E-08
SSW	2.381E-06	8.340E-07	3.919E-07	2.430E-07	1.707E-07	8.591E-08	3.347E-08	1.673E-08	1.072E-08	7.719E-09
SW	1.200E-06	4.259E-07	1.960E-07	1.187E-07	8.195E-08	4.002E-08	1.487E-08	7.158E-09	4.477E-09	3.166E-09
WSW	8.279E-07	2.921E-07	1.348E-07	8.220E-08	5.705E-08	2.816E-08	1.065E-08	5.214E-09	3.297E-09	2.351E-09
W	7.162E-07	2.530E-07	1.167E-07	7.110E-08	4.930E-08	2.427E-08	9.146E-09	4.457E-09	2.811E-09	2.000E-09
WNW	6.330E-07	2.182E-07	1.032E-07	6.465E-08	4.578E-08	2.341E-08	9.364E-09	4.786E-09	3.109E-09	2.262E-09
NW	8.604E-07	2.978E-07	1.410E-07	8.850E-08	6.275E-08	3.215E-08	1.289E-08	6.593E-09	4.285E-09	3.117E-09
NNW	2.060E-06	7.313E-07	3.570E-07	2.276E-07	1.630E-07	8.473E-08	3.457E-08	1.786E-08	1.166E-08	8.508E-09
N	3.827E-06	1.344E-06	6.665E-07	4.314E-07	3.124E-07	1.652E-07	6.905E-08	3.629E-08	2.393E-08	1.758E-08
NNE	3.965E-06	1.446E-06	7.064E-07	4.476E-07	3.191E-07	1.643E-07	6.600E-08	3.365E-08	2.178E-08	1.579E-08
NE	2.918E-06	1.072E-06	5.218E-07	3.282E-07	2.328E-07	1.189E-07	4.716E-08	2.382E-08	1.533E-08	1.106E-08
ENE	2.191E-06	7.851E-07	3.834E-07	2.436E-07	1.741E-07	9.013E-08	3.653E-08	1.877E-08	1.222E-08	8.889E-09

	1.471E-06	5.274E-07	2.557E-07	1.616E-07	1.150E-	5.917E-08	2.378E-08	1.216E-08	7.888E-09	5.12E
ES	1.951E-06	6.886E-07	3.396E-07	2.185E-07	1.575E-	8.271E-08	3.423E-08	1.787E-08	1.174E-08	8.601E
SE	2.606E-06	8.993E-07	4.499E-07	2.944E-07	2.147E-07	1.150E-07	4.891E-08	2.604E-08	1.730E-08	1.278E-08
SSE	5.240E-06	1.821E-06	9.137E-07	5.984E-07	4.368E-07	2.341E-07	9.962E-08	5.304E-08	3.523E-08	2.602E-08

VENT AND BUILDING PARAMETERS:

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

REP. WIND HEIGHT	(METERS)	11.0
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)			
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) STABLE CONDITIONS			
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 JUL-DEC 83
2.260 DAY DECAY, UNDEPLETED

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	1.609E-05	4.891E-06	2.474E-06	1.587E-06	8.678E-07	5.844E-07	4.339E-07	3.400E-07	2.767E-07	2.314E-07	1.975E-07
SSW	1.320E-05	4.316E-06	2.275E-06	1.469E-06	7.989E-07	5.263E-07	3.825E-07	2.947E-07	2.365E-07	1.954E-07	1.652E-07
SW	6.360E-06	2.145E-06	1.156E-06	7.527E-07	4.110E-07	2.675E-07	1.918E-07	1.462E-07	1.162E-07	9.526E-08	7.995E-08
WSW	4.462E-06	1.477E-06	7.995E-07	5.175E-07	2.806E-07	1.830E-07	1.317E-07	1.006E-07	8.021E-08	6.591E-08	5.543E-08
W	3.830E-06	1.278E-06	6.902E-07	4.473E-07	2.428E-07	1.582E-07	1.137E-07	8.679E-08	6.908E-08	5.670E-08	4.764E-08
WNW	3.671E-06	1.162E-06	6.007E-07	3.843E-07	2.075E-07	1.372E-07	1.002E-07	7.756E-08	6.245E-08	5.176E-08	4.387E-08
NW	4.971E-06	1.568E-06	8.207E-07	5.249E-07	2.831E-07	1.873E-07	1.370E-07	1.061E-07	8.554E-08	7.096E-08	6.018E-08
NNW	1.232E-05	3.773E-06	1.943E-06	1.263E-06	6.989E-07	4.698E-07	3.472E-07	2.712E-07	2.200E-07	1.835E-07	1.562E-07
N	2.368E-05	7.101E-06	3.580E-06	2.311E-06	1.277E-06	8.660E-07	6.463E-07	5.085E-07	4.149E-07	3.478E-07	2.975E-07
NNE	2.314E-05	7.127E-06	3.767E-06	2.480E-06	1.390E-06	9.335E-07	6.877E-07	5.356E-07	4.335E-07	3.609E-07	3.068E-07
NE	1.692E-05	5.243E-06	2.768E-06	1.834E-06	1.035E-06	6.934E-07	5.087E-07	3.948E-07	3.187E-07	2.646E-07	2.246E-07
ENE	1.300E-05	3.996E-06	2.068E-06	1.351E-06	7.526E-07	5.056E-07	3.731E-07	2.910E-07	2.357E-07	1.964E-07	1.672E-07
E	8.633E-06	2.671E-06	1.392E-06	9.100E-07	5.059E-07	3.385E-07	2.488E-07	1.935E-07	1.564E-07	1.301E-07	1.105E-07
ESE	1.189E-05	3.602E-06	1.831E-06	1.186E-06	6.558E-07	4.432E-07	3.295E-07	2.585E-07	2.104E-07	1.760E-07	1.503E-07
SE	1.660E-05	4.908E-06	2.418E-06	1.547E-06	8.494E-07	5.794E-07	4.352E-07	3.442E-07	2.820E-07	2.372E-07	2.035E-07
SSE	3.343E-05	9.836E-06	4.874E-06	3.128E-06	1.724E-06	1.178E-06	8.860E-07	7.014E-07	5.753E-07	4.842E-07	4.158E-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	1.715E-07	9.926E-08	6.707E-08	3.826E-08	2.549E-08	1.847E-08	1.412E-08	1.120E-08	9.140E-09	7.615E-09	6.453E-09
SSW	1.421E-07	7.973E-08	5.282E-08	2.943E-08	1.934E-08	1.390E-08	1.057E-08	8.359E-09	6.804E-09	5.662E-09	4.795E-09
SW	6.839E-08	3.756E-08	2.453E-08	1.344E-08	8.762E-09	6.266E-09	4.752E-09	3.753E-09	3.053E-09	2.540E-09	2.152E-09
WSW	4.751E-08	2.628E-08	1.726E-08	9.519E-09	6.230E-09	4.467E-09	3.393E-09	2.682E-09	2.182E-09	1.815E-09	1.537E-09
W	4.078E-08	2.244E-08	1.466E-08	8.014E-09	5.201E-09	3.701E-09	2.791E-09	2.191E-09	1.771E-09	1.465E-09	1.233E-09
WNW	3.784E-08	2.143E-08	1.428E-08	8.004E-09	5.276E-09	3.795E-09	2.886E-09	2.280E-09	1.853E-09	1.540E-09	1.301E-09
NW	5.195E-08	2.949E-08	1.968E-08	1.106E-08	7.297E-09	5.255E-09	3.999E-09	3.162E-09	2.572E-09	2.138E-09	1.808E-09
NNW	1.355E-07	7.788E-08	5.241E-08	2.975E-08	1.976E-08	1.429E-08	1.092E-08	8.661E-09	7.064E-09	5.885E-09	4.988E-09
N	2.587E-07	1.505E-07	1.020E-07	5.831E-08	3.883E-08	2.812E-08	2.149E-08	1.704E-08	1.388E-08	1.156E-08	9.783E-09
NNE	2.654E-07	1.515E-07	1.015E-07	5.727E-08	3.787E-08	2.731E-08	2.081E-08	1.647E-08	1.341E-08	1.115E-08	9.437E-09
NE	1.940E-07	1.102E-07	7.359E-08	4.141E-08	2.737E-08	1.975E-08	1.506E-08	1.194E-08	9.729E-09	8.103E-09	6.865E-09
ENE	1.448E-07	8.302E-08	5.578E-08	3.161E-08	2.097E-08	1.517E-08	1.158E-08	9.189E-09	7.496E-09	6.246E-09	5.294E-09
E	9.553E-08	5.447E-08	3.645E-08	2.056E-08	1.361E-08	9.819E-09	7.486E-09	5.929E-09	4.829E-09	4.019E-09	3.402E-09
ESE	1.305E-07	7.554E-08	5.102E-08	2.907E-08	1.933E-08	1.399E-08	1.068E-08	8.467E-09	6.899E-09	5.742E-09	4.860E-09
SE	1.774E-07	1.041E-07	7.090E-08	4.078E-08	2.724E-08	1.976E-08	1.511E-08	1.199E-08	9.770E-09	8.132E-09	6.883E-09
SSE	3.627E-07	2.134E-07	1.457E-07	8.423E-08	5.651E-08	4.117E-08	3.161E-08	2.518E-08	2.060E-08	1.721E-08	1.462E-08

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

SEGMENT BOUNDARIES IN MILES

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.617E-06	9.017E-07	4.365E-07	2.775E-07	1.979E-07	1.010E-07	3.899E-08	1.860E-08	1.125E-08	7.636E-09
SSW	2.371E-06	8.267E-07	3.857E-07	2.375E-07	1.656E-07	8.163E-08	3.014E-08	1.402E-08	8.398E-09	5.680E-09
SW	1.196E-06	4.232E-07	1.938E-07	1.168E-07	8.020E-08	3.862E-08	1.383E-08	6.326E-09	3.772E-09	2.548E-09
WSW	8.247E-07	2.899E-07	1.329E-07	8.060E-08	5.560E-08	2.699E-08	9.776E-09	4.507E-09	2.694E-09	1.821E-09
W	7.129E-07	2.506E-07	1.148E-07	6.942E-08	4.778E-08	2.306E-08	8.240E-09	3.737E-09	2.202E-09	1.470E-09
WNW	6.292E-07	2.156E-07	1.010E-07	6.269E-08	4.398E-08	2.190E-08	8.186E-09	3.826E-09	2.291E-09	1.544E-09
NW	8.552E-07	2.943E-07	1.381E-07	8.587E-08	6.033E-08	3.012E-08	1.130E-08	5.297E-09	3.176E-09	2.144E-09
NNW	2.047E-06	7.223E-07	3.495E-07	2.207E-07	1.566E-07	7.935E-08	3.035E-08	1.440E-08	8.697E-09	5.902E-09
N	3.798E-06	1.324E-06	6.497E-07	4.161E-07	2.981E-07	1.530E-07	5.935E-08	2.832E-08	1.711E-08	1.159E-08
NNE	3.942E-06	1.429E-06	6.924E-07	4.350E-07	3.075E-07	1.546E-07	5.847E-08	2.753E-08	1.655E-08	1.119E-08
NE	2.903E-06	1.061E-06	5.124E-07	3.198E-07	2.251E-07	1.125E-07	4.232E-08	1.991E-08	1.199E-08	8.126E-09
ENE	2.178E-06	7.758E-07	3.756E-07	2.365E-07	1.676E-07	8.464E-08	3.225E-08	1.528E-08	9.228E-09	6.264E-09

	1.462E-06	5.213E-07	2.506E-07	1.570E-07	1.108E-	5.559E-08	2.100E-08	9.896E-09	5.955E-09	4.031E
ESE	1.938E-06	6.790E-07	3.314E-07	2.111E-07	1.506E-0.	7.686E-08	2.962E-08	1.409E-08	8.502E-09	5.758E-
SE	2.585E-06	9.845E-07	4.372E-07	2.827E-07	2.038E-07	1.056E-07	4.146E-08	1.990E-08	1.203E-08	8.155E-09
SSE	5.200E-06	1.793E-06	8.900E-07	5.766E-07	4.164E-07	2.165E-07	8.558E-08	4.144E-08	2.527E-08	1.726E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS			
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 JUL-DEC 83
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	1.526E-05	4.483E-06	2.216E-06	1.399E-06	7.444E-07	4.905E-07	3.576E-07	2.758E-07	2.213E-07	1.827E-07	1.542E-07
SSW	1.251E-05	3.950E-06	2.034E-06	1.292E-06	6.829E-07	4.397E-07	3.134E-07	2.374E-07	1.876E-07	1.529E-07	1.276E-07
SW	6.025E-06	1.962E-06	1.032E-06	6.609E-07	3.507E-07	2.230E-07	1.567E-07	1.173E-07	9.175E-08	7.413E-08	6.139E-08
WSW	4.228E-06	1.351E-06	7.145E-07	4.548E-07	2.397E-07	1.527E-07	1.077E-07	8.091E-08	6.318E-08	5.142E-08	4.269E-08
W	3.629E-06	1.170E-06	6.172E-07	3.934E-07	2.076E-07	1.322E-07	9.320E-08	6.995E-08	5.484E-08	4.439E-08	3.683E-08
WNW	3.479E-06	1.064E-06	5.377E-07	3.384E-07	1.778E-07	1.150E-07	8.245E-08	6.277E-08	4.982E-08	4.076E-08	3.414E-08
NW	4.713E-06	1.436E-06	7.346E-07	4.622E-07	2.425E-07	1.570E-07	1.127E-07	8.587E-08	6.820E-08	5.585E-08	4.680E-08
NNW	1.168E-05	3.456E-06	1.740E-06	1.112E-06	5.990E-07	3.938E-07	2.856E-07	2.195E-07	1.755E-07	1.444E-07	1.216E-07
N	2.246E-05	6.509E-06	3.208E-06	2.038E-06	1.096E-06	7.276E-07	5.332E-07	4.129E-07	3.323E-07	2.750E-07	2.326E-07
NNE	2.193E-05	6.528E-06	3.371E-06	2.183E-06	1.191E-06	7.819E-07	5.652E-07	4.329E-07	3.452E-07	2.835E-07	2.382E-07
NE	1.604E-05	4.801E-06	2.477E-06	1.614E-06	8.861E-07	5.801E-07	4.175E-07	3.186E-07	2.533E-07	2.075E-07	1.739E-07
ENE	1.232E-05	3.660E-06	1.851E-06	1.190E-06	6.447E-07	4.236E-07	3.067E-07	2.353E-07	1.879E-07	1.545E-07	1.299E-07
E	8.183E-06	2.446E-06	1.246E-06	8.011E-07	4.333E-07	2.835E-07	2.045E-07	1.564E-07	1.246E-07	1.023E-07	8.585E-08
ESE	1.128E-05	3.301E-06	1.640E-06	1.045E-06	5.627E-07	3.722E-07	2.716E-07	2.097E-07	1.683E-07	1.390E-07	1.174E-07
SE	1.574E-05	4.501E-06	2.169E-06	1.366E-06	7.302E-07	4.877E-07	3.599E-07	2.802E-07	2.265E-07	1.882E-07	1.597E-07
SSE	3.170E-05	9.017E-06	4.368E-06	2.759E-06	1.480E-06	9.902E-07	7.314E-07	5.699E-07	4.610E-07	3.832E-07	3.253E-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	1.325E-07	7.383E-08	4.838E-08	2.643E-08	1.706E-08	1.207E-08	9.047E-09	7.057E-09	5.670E-09	4.659E-09	3.897E-09
SSW	1.085E-07	5.834E-08	3.732E-08	1.974E-08	1.248E-08	8.698E-09	6.445E-09	4.983E-09	3.974E-09	3.246E-09	2.702E-09
SW	5.187E-08	2.718E-08	1.708E-08	8.817E-09	5.491E-09	3.783E-09	2.779E-09	2.134E-09	1.693E-09	1.376E-09	1.141E-09
WSW	3.615E-08	1.912E-08	1.209E-08	6.304E-09	3.954E-09	2.740E-09	2.022E-09	1.558E-09	1.240E-09	1.011E-09	8.398E-10
W	3.117E-08	1.643E-08	1.036E-08	5.378E-09	3.359E-09	2.319E-09	1.705E-09	1.310E-09	1.039E-09	8.444E-10	6.997E-10
WNW	2.913E-08	1.587E-08	1.024E-08	5.486E-09	3.501E-09	2.455E-09	1.828E-09	1.419E-09	1.135E-09	9.292E-10	7.748E-10
NW	3.996E-08	2.180E-08	1.409E-08	7.561E-09	4.828E-09	3.388E-09	2.524E-09	1.959E-09	1.568E-09	1.284E-09	1.071E-09
NNW	1.042E-07	5.759E-08	3.752E-08	2.033E-08	1.305E-08	9.191E-09	6.866E-09	5.343E-09	4.284E-09	3.514E-09	2.936E-09
N	2.002E-07	1.122E-07	7.378E-08	4.043E-08	2.613E-08	1.849E-08	1.386E-08	1.082E-08	8.689E-09	7.138E-09	5.970E-09
NNE	2.037E-07	1.117E-07	7.235E-08	3.887E-08	2.481E-08	1.740E-08	1.295E-08	1.005E-08	8.039E-09	6.581E-09	5.488E-09
NE	1.485E-07	8.086E-08	5.214E-08	2.786E-08	1.772E-08	1.240E-08	9.215E-09	7.142E-09	5.708E-09	4.670E-09	3.893E-09
ENE	1.113E-07	6.128E-08	3.983E-08	2.151E-08	1.378E-08	9.691E-09	7.232E-09	5.623E-09	4.505E-09	3.694E-09	3.085E-09
E	7.340E-08	4.019E-08	2.602E-08	1.399E-08	8.938E-09	6.274E-09	4.675E-09	3.630E-09	2.905E-09	2.380E-09	1.985E-09
ESE	1.008E-07	5.617E-08	3.679E-08	2.007E-08	1.293E-08	9.137E-09	6.840E-09	5.331E-09	4.279E-09	3.513E-09	2.937E-09
SE	1.378E-07	7.805E-08	5.167E-08	2.856E-08	1.856E-08	1.319E-08	9.915E-09	7.753E-09	6.239E-09	5.134E-09	4.298E-09
SSE	2.808E-07	1.592E-07	1.055E-07	5.841E-08	3.802E-08	2.704E-08	2.036E-08	1.594E-08	1.284E-08	1.058E-08	8.867E-09

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

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.356E-06	7.770E-07	3.603E-07	2.222E-07	1.546E-07	7.555E-08	2.714E-08	1.219E-08	7.097E-09	4.676E-09
SSW	2.130E-06	7.101E-07	3.167E-07	1.886E-07	1.280E-07	6.015E-08	2.042E-08	8.806E-09	5.017E-09	3.260E-09
SW	1.074E-06	3.629E-07	1.586E-07	9.233E-08	6.164E-08	2.818E-08	9.174E-09	3.837E-09	2.150E-09	1.383E-09
WSW	7.405E-07	2.488E-07	1.090E-07	6.386E-08	4.286E-08	1.978E-08	6.545E-09	2.776E-09	1.569E-09	1.015E-09
W	6.405E-07	2.154E-07	9.431E-08	5.518E-08	3.697E-08	1.701E-08	5.588E-09	2.351E-09	1.319E-09	8.484E-10
WNW	5.662E-07	1.856E-07	8.325E-08	5.007E-08	3.425E-08	1.631E-08	5.660E-09	2.483E-09	1.428E-09	9.330E-10
NW	7.694E-07	2.533E-07	1.138E-07	6.854E-08	4.695E-08	2.241E-08	7.797E-09	3.426E-09	1.972E-09	1.290E-09
NNW	1.842E-06	6.217E-07	2.880E-07	1.762E-07	1.219E-07	5.903E-08	2.091E-08	9.290E-09	5.375E-09	3.528E-09
N	3.421E-06	1.142E-06	5.369E-07	3.335E-07	2.332E-07	1.147E-07	4.149E-08	1.868E-08	1.088E-08	7.165E-09
NNE	3.545E-06	1.230E-06	5.701E-07	3.468E-07	2.389E-07	1.147E-07	4.106E-08	1.760E-08	1.011E-08	6.608E-09
NE	2.610E-06	9.119E-07	4.213E-07	2.545E-07	1.745E-07	8.312E-08	2.875E-08	1.254E-08	7.188E-09	4.690E-09
ENE	1.959E-06	6.676E-07	3.093E-07	1.887E-07	1.303E-07	6.285E-08	2.214E-08	9.797E-09	5.657E-09	3.709E-09

	1.315E-06	4.485E-07	2.064E-07	1.252E-07	8.610E	4.127E-08	1.442E-08	6.345E-09	3.653E-09	2.390
ESE	1.745E-06	5.852E-07	2.737E-07	1.690E-07	1.177E-07	5.748E-08	2.061E-08	9.231E-09	5.361E-09	3.527E-09
SE	2.330E-06	7.636E-07	3.621E-07	2.273E-07	1.600E-07	7.961E-08	2.925E-08	1.331E-08	7.794E-09	5.152E-09
SSE	4.686E-06	1.547E-06	7.358E-07	4.625E-07	3.260E-07	1.624E-07	5.981E-08	2.729E-08	1.602E-08	1.061E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS			
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 JUL-DEC 83

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

DIRECTION FROM SITE	DISTANCES IN MILES 0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	4.255E-08	1.439E-08	7.388E-09	4.536E-09	2.262E-09	1.372E-09	9.274E-10	6.720E-10	5.110E-10	4.026E-10	3.259E-10
SSW	7.156E-08	2.420E-08	1.242E-08	7.629E-09	3.803E-09	2.307E-09	1.560E-09	1.130E-09	8.594E-10	6.770E-10	5.481E-10
SW	4.333E-08	1.465E-08	7.523E-09	4.620E-09	2.303E-09	1.397E-09	9.444E-10	6.843E-10	5.204E-10	4.100E-10	3.319E-10
WSW	2.307E-08	7.800E-09	4.005E-09	2.459E-09	1.226E-09	7.436E-10	5.028E-10	3.643E-10	2.770E-10	2.182E-10	1.767E-10
W	1.567E-08	5.299E-09	2.721E-09	1.671E-09	8.329E-10	5.051E-10	3.415E-10	2.475E-10	1.882E-10	1.483E-10	1.200E-10
WNW	1.239E-08	4.189E-09	2.151E-09	1.321E-09	6.584E-10	3.993E-10	2.700E-10	1.956E-10	1.488E-10	1.172E-10	9.488E-11
NW	1.652E-08	5.585E-09	2.868E-09	1.761E-09	8.779E-10	5.324E-10	3.600E-10	2.609E-10	1.984E-10	1.563E-10	1.265E-10
NNW	3.418E-08	1.156E-08	5.935E-09	3.645E-09	1.817E-09	1.102E-09	7.451E-10	5.399E-10	4.105E-10	3.234E-10	2.618E-10
N	4.694E-08	1.587E-08	8.150E-09	5.005E-09	2.495E-09	1.513E-09	1.023E-09	7.414E-10	5.637E-10	4.441E-10	3.596E-10
NNE	6.073E-08	2.054E-08	1.054E-08	6.475E-09	3.228E-09	1.958E-09	1.324E-09	9.592E-10	7.294E-10	5.746E-10	4.652E-10
NE	5.420E-08	1.833E-08	9.410E-09	5.778E-09	2.881E-09	1.747E-09	1.181E-09	8.559E-10	6.508E-10	5.128E-10	4.151E-10
ENE	3.485E-08	1.178E-08	6.050E-09	3.715E-09	1.852E-09	1.123E-09	7.595E-10	5.504E-10	4.185E-10	3.297E-10	2.669E-10
E	2.495E-08	8.436E-09	4.331E-09	2.660E-09	1.326E-09	8.042E-10	5.437E-10	3.940E-10	2.996E-10	2.360E-10	1.911E-10
ESE	2.284E-08	7.724E-09	3.966E-09	2.435E-09	1.214E-09	7.364E-10	4.979E-10	3.608E-10	2.743E-10	2.161E-10	1.750E-10
SE	2.349E-08	7.944E-09	4.079E-09	2.504E-09	1.249E-09	7.573E-10	5.120E-10	3.710E-10	2.821E-10	2.223E-10	1.799E-10
SSE	5.179E-08	1.751E-08	8.991E-09	5.521E-09	2.753E-09	1.669E-09	1.129E-09	8.179E-10	6.219E-10	4.900E-10	3.967E-10

DIRECTION FROM SITE	DISTANCES IN MILES 5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	2.696E-10	1.321E-10	8.289E-11	4.190E-11	2.536E-11	1.700E-11	1.218E-11	9.148E-12	7.113E-12	5.682E-12	4.638E-12
SSW	4.534E-10	2.222E-10	1.394E-10	7.046E-11	4.265E-11	2.859E-11	2.049E-11	1.539E-11	1.196E-11	9.556E-12	7.800E-12
SW	2.745E-10	1.345E-10	8.441E-11	4.267E-11	2.582E-11	1.731E-11	1.241E-11	9.316E-12	7.243E-12	5.785E-12	4.723E-12
WSW	1.462E-10	7.162E-11	4.494E-11	2.271E-11	1.375E-11	9.218E-12	6.605E-12	4.960E-12	3.856E-12	3.080E-12	2.514E-12
W	9.928E-11	4.865E-11	3.053E-11	1.543E-11	9.339E-12	6.261E-12	4.487E-12	3.369E-12	2.619E-12	2.092E-12	1.708E-12
WNW	7.848E-11	3.846E-11	2.413E-11	1.220E-11	7.383E-12	4.950E-12	3.547E-12	2.663E-12	2.071E-12	1.654E-12	1.350E-12
NW	1.046E-10	5.128E-11	3.218E-11	1.626E-11	9.844E-12	6.600E-12	4.729E-12	3.551E-12	2.761E-12	2.206E-12	1.800E-12
NNW	2.166E-10	1.061E-10	6.660E-11	3.366E-11	2.037E-11	1.366E-11	9.788E-12	7.350E-12	5.715E-12	4.565E-12	3.726E-12
N	2.974E-10	1.458E-10	9.145E-11	4.622E-11	2.798E-11	1.876E-11	1.344E-11	1.009E-11	7.847E-12	6.269E-12	5.117E-12
NNE	3.848E-10	1.886E-10	1.183E-10	5.980E-11	3.620E-11	2.427E-11	1.739E-11	1.306E-11	1.015E-11	8.110E-12	6.620E-12
NE	3.434E-10	1.683E-10	1.056E-10	5.337E-11	3.230E-11	2.166E-11	1.552E-11	1.165E-11	9.060E-12	7.237E-12	5.907E-12
ENE	2.208E-10	1.082E-10	6.789E-11	3.431E-11	2.077E-11	1.392E-11	9.978E-12	7.492E-12	5.825E-12	4.653E-12	3.798E-12
E	1.581E-10	7.746E-11	4.860E-11	2.456E-11	1.487E-11	9.969E-12	7.143E-12	5.364E-12	4.170E-12	3.331E-12	2.719E-12
ESE	1.447E-10	7.092E-11	4.450E-11	2.249E-11	1.361E-11	9.128E-12	6.541E-12	4.911E-12	3.819E-12	3.050E-12	2.490E-12
SE	1.488E-10	7.294E-11	4.576E-11	2.313E-11	1.400E-11	9.387E-12	6.726E-12	5.051E-12	3.927E-12	3.137E-12	2.560E-12
SSE	3.281E-10	1.608E-10	1.009E-10	5.099E-11	3.086E-11	2.069E-11	1.483E-11	1.113E-11	8.657E-12	6.915E-12	5.644E-12

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

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.676E-09	2.372E-09	9.437E-10	5.157E-10	3.278E-10	1.408E-10	4.366E-11	1.730E-11	9.240E-12	5.719E-12
SSW	1.291E-08	3.988E-09	1.587E-09	8.673E-10	5.512E-10	2.368E-10	7.342E-11	2.910E-11	1.554E-11	9.618E-12
SW	7.817E-09	2.415E-09	9.610E-10	5.251E-10	3.338E-10	1.434E-10	4.446E-11	1.762E-11	9.409E-12	5.824E-12
WSW	4.162E-09	1.286E-09	5.116E-10	2.796E-10	1.777E-10	7.633E-11	2.367E-11	9.381E-12	5.009E-12	3.101E-12
W	2.827E-09	8.734E-10	3.475E-10	1.899E-10	1.207E-10	5.185E-11	1.608E-11	6.372E-12	3.403E-12	2.106E-12
WNW	2.235E-09	6.904E-10	2.747E-10	1.501E-10	9.542E-11	4.099E-11	1.271E-11	5.037E-12	2.690E-12	1.665E-12
NW	2.980E-09	9.206E-10	3.663E-10	2.002E-10	1.272E-10	5.465E-11	1.695E-11	6.717E-12	3.587E-12	2.220E-12
NNW	6.167E-09	1.905E-09	7.582E-10	4.143E-10	2.633E-10	1.131E-10	3.507E-11	1.390E-11	7.424E-12	4.595E-12
N	8.469E-09	2.616E-09	1.041E-09	5.689E-10	3.616E-10	1.553E-10	4.816E-11	1.909E-11	1.019E-11	6.310E-12
NNE	1.096E-08	3.385E-09	1.347E-09	7.361E-10	4.678E-10	2.010E-10	6.231E-11	2.470E-11	1.319E-11	8.163E-12
NE	9.777E-09	3.021E-09	1.202E-09	6.568E-10	4.175E-10	1.793E-10	5.561E-11	2.204E-11	1.177E-11	7.285E-12
ENE	6.286E-09	1.942E-09	7.729E-10	4.223E-10	2.684E-10	1.153E-10	3.575E-11	1.417E-11	7.567E-12	4.684E-12
E	4.501E-09	1.390E-09	5.533E-10	3.024E-10	1.922E-10	8.254E-11	2.560E-11	1.014E-11	5.417E-12	3.353E-12
ESE	4.121E-09	1.273E-09	5.066E-10	2.768E-10	1.760E-10	7.558E-11	2.344E-11	9.289E-12	4.961E-12	3.070E-12
SE	4.238E-09	1.309E-09	5.210E-10	2.847E-10	1.810E-10	7.773E-11	2.410E-11	9.553E-12	5.101E-12	3.158E-12
SSE	9.343E-09	2.886E-09	1.149E-09	6.276E-10	3.989E-10	1.713E-10	5.313E-11	2.106E-11	1.125E-11	6.961E-12

VENT AND BUILDING PARAMETERS:

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

REP. WIND HEIGHT	(METERS)	11.0
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)			
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) STABLE CONDITIONS				WIND SPEED (METERS/SEC) 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		

EXIT ONE GROUND LEVEL RELEASE JUL-DEC 83
SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION	DISTANCE (MILES)	DISTANCE (METERS)	X/Q (SEC/CUB.METER) NO DECAY UNDEPLETED	X/Q (SEC/CUB.METER) 2.260 DAY DECAY UNDEPLETED	X/Q (SEC/CUB.METER) 2.260 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	SITE BOUNDARY	S	0.28	451.	1.3E-05	1.3E-05	1.2E-05	3.6E-08
A	SITE BOUNDARY	SSW	0.29	467.	1.0E-05	1.0E-05	9.6E-06	5.7E-08
A	SITE BOUNDARY	SW	0.36	579.	3.5E-06	3.5E-06	3.3E-06	2.5E-08
A	SITE BOUNDARY	WSW	0.36	579.	2.5E-06	2.5E-06	2.3E-06	1.3E-08
A	SITE BOUNDARY	W	0.50	805.	1.3E-06	1.3E-06	1.2E-06	5.3E-09
A	SITE BOUNDARY	WNW	0.65	885.	1.0E-06	1.0E-06	9.1E-07	3.6E-09
A	SITE BOUNDARY	NW	1.23	1979.	3.9E-07	3.8E-07	3.3E-07	1.2E-09
A	SITE BOUNDARY	NNW	1.89	3042.	5.2E-07	5.1E-07	4.3E-07	1.2E-09
A	SITE BOUNDARY	N	1.94	3122.	9.2E-07	9.0E-07	7.6E-07	1.6E-09
A	SITE BOUNDARY	NNE	1.26	2028.	1.8E-06	1.8E-06	1.5E-06	4.4E-09
A	SITE BOUNDARY	NE	1.01	1625.	1.8E-06	1.8E-06	1.6E-06	5.7E-09
A	SITE BOUNDARY	ENE	0.86	1384.	1.7E-06	1.7E-06	1.5E-06	4.8E-09
A	SITE BOUNDARY	E	0.61	982.	2.0E-06	1.9E-06	1.8E-06	6.1E-09
A	SITE BOUNDARY	ESE	0.50	805.	3.6E-06	3.6E-06	3.3E-06	7.7E-09
A	SITE BOUNDARY	SE	0.29	467.	1.3E-05	1.3E-05	1.2E-05	1.9E-08
A	SITE BOUNDARY	SSE	0.26	418.	3.1E-05	3.1E-05	3.0E-05	4.9E-08
A	MILK COW	NE	1.30	2092.	1.3E-06	1.3E-06	1.1E-06	3.7E-09
A	MILK COW	E	4.20	6759.	1.3E-07	1.2E-07	9.5E-08	2.2E-10
A	MEAT ANIMAL	S	2.32	3734.	4.9E-07	4.8E-07	4.0E-07	1.1E-09
A	MEAT ANIMAL	SSW	2.08	3347.	5.0E-07	5.0E-07	4.1E-07	2.2E-09
A	MEAT ANIMAL	SW	2.27	3653.	2.2E-07	2.2E-07	1.8E-07	1.1E-09
A	MEAT ANIMAL	WSW	2.69	4329.	1.2E-07	1.2E-07	9.6E-08	4.4E-10
A	MEAT ANIMAL	W	3.97	6389.	5.9E-08	5.7E-08	4.5E-08	1.5E-10
A	MEAT ANIMAL	WNW	4.07	6550.	5.2E-08	5.1E-08	4.0E-08	1.1E-10
A	MEAT ANIMAL	NW	1.60	2575.	2.6E-07	2.6E-07	2.2E-07	7.9E-10
A	MEAT ANIMAL	NNW	2.84	4571.	3.0E-07	2.9E-07	2.4E-07	5.9E-10
A	MEAT ANIMAL	N	2.93	4715.	5.4E-07	5.2E-07	4.3E-07	7.7E-10
A	MEAT ANIMAL	NNE	1.65	2655.	1.2E-06	1.2E-06	1.0E-06	2.7E-09
A	MEAT ANIMAL	NE	1.16	1867.	1.5E-06	1.5E-06	1.3E-06	4.9E-09
A	MEAT ANIMAL	ENE	2.41	3879.	4.0E-07	3.9E-07	3.2E-07	8.1E-10
A	MEAT ANIMAL	E	3.12	5021.	1.9E-07	1.8E-07	1.5E-07	3.7E-10
A	MEAT ANIMAL	ESE	1.99	3203.	4.5E-07	4.5E-07	3.7E-07	7.4E-10
A	RESIDENT	S	0.30	483.	1.2E-05	1.2E-05	1.1E-05	3.2E-08
A	RESIDENT	SSW	0.30	483.	9.7E-06	9.7E-06	9.1E-06	5.4E-08
A	RESIDENT	SW	0.40	644.	3.0E-06	3.0E-06	2.8E-06	2.1E-08
A	RESIDENT	WSW	0.40	644.	2.1E-06	2.1E-06	1.9E-06	1.1E-08
A	RESIDENT	W	0.60	966.	9.7E-07	9.7E-07	8.8E-07	3.9E-09
A	RESIDENT	WNW	0.70	1127.	6.7E-07	6.7E-07	6.0E-07	2.4E-09
A	RESIDENT	NW	1.30	2092.	3.6E-07	3.5E-07	3.0E-07	1.1E-09
A	RESIDENT	NNW	2.90	4667.	2.9E-07	2.8E-07	2.3E-07	5.7E-10
A	RESIDENT	N	2.90	4667.	5.5E-07	5.3E-07	4.3E-07	7.9E-10
A	RESIDENT	NNE	1.30	2092.	1.7E-06	1.7E-06	1.5E-06	4.1E-09
A	RESIDENT	NE	1.20	1931.	1.4E-06	1.4E-06	1.2E-06	4.2E-09
A	RESIDENT	ENE	0.90	1448.	1.6E-06	1.6E-06	1.4E-06	4.4E-09
A	RESIDENT	E	0.80	1287.	1.3E-06	1.3E-06	1.1E-06	3.9E-09
A	RESIDENT	ESE	0.60	966.	2.7E-06	2.7E-06	2.4E-06	5.7E-09
A	RESIDENT	SE	0.30	483.	1.2E-05	1.2E-05	1.1E-05	1.8E-08
A	RESIDENT	SSE	0.30	483.	2.4E-05	2.4E-05	2.3E-05	3.9E-08
A	GARDEN	S	0.40	644.	7.1E-06	7.1E-06	6.6E-06	2.1E-08
A	GARDEN	SSW	0.50	805.	4.3E-06	4.3E-06	3.9E-06	2.4E-08
A	GARDEN	SW	0.50	805.	2.1E-06	2.1E-06	2.0E-06	1.5E-08
A	GARDEN	WSW	0.60	966.	1.1E-06	1.1E-06	1.0E-06	5.8E-09
A	GARDEN	W	0.60	966.	9.7E-07	9.7E-07	8.8E-07	3.9E-09

A	GARDEN	WNW	0.90	1448.	4.5E-C	4.5E-07	4.0E-07	1.6E-09
A	GARDEN	NW	1.30	2092.	3.6E-07	3.5E 07	3.0E-07	1.1E 09
A	GARDEN	NNW	3.00	4828.	2.8E-07	2.7E-07	2.2E-07	5.4E-10
A	GARDEN	N	2.90	4667.	5.5E-07	5.3E-07	4.3E-07	7.9E-10
A	GARDEN	NNE	1.40	2253.	1.6E-06	1.5E-06	1.3E-06	3.6E 09
A	GARDEN	NE	1.30	2092.	1.3E-06	1.3E-06	1.1E-06	3.7E 09
A	GARDEN	ENE	2.20	3541.	4.5E-07	4.4E-07	3.7E-07	9.5E-10
A	GARDEN	E	2.80	4506.	2.2E-07	2.1E-07	1.7E-07	4.5E-10
A	GARDEN	ESE	0.60	966.	2.7E-06	2.7E-06	2.4E-06	5.7E-09
A	GARDEN	SE	0.30	483.	1.2E-05	1.2E-05	1.1E-05	1.8E-08
A	GARDEN	SSE	0.30	483.	2.4E-05	2.4E-05	2.3E-05	3.9E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT	(METERS)	0.0	REP. WIND HEIGHT	(METERS)	11.0
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) STABLE CONDITIONS				WIND SPEED (METERS/SEC) 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		

ENCLOSURE 4

METEOROLOGICAL DATA FOR
DIFFUSION ANALYSIS
JULY 1 - DECEMBER 31, 1983
H. B. ROBINSON STEAM ELECTRIC PLANT

The attached tables present the number and frequency of wind direction occurrences by wind speed class as recorded at the on-site meteorological system during the period July 1 through December 31, 1983.

The frequencies are presented as a percent of total occurrences for each stability class as well as a summary for all classes of each sensor elevation. 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 Stability categories based on lower level (10m) wind distribution.

A	B	C	D	E	F	G
6.2	5.1	5.5	36.1	26.6	10.7	9.6

2. Wind Speed

	10 Meter	60 Meter
Average Speed (mph)	5.1	8.9
Percent Calm	0.9	0.0
Percent Less than 3.5 mph	32.0	6.5

3. Wind Direction

	10 Meter	60 Meter
Prevailing Direction	NNE	NNE
Percent Occurrence	12.4	14.2

4. Data Recovery

	10 Meter	60 Meter
Percent Good Hours	99.1	99.1

(7530TDDpdc)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 1
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC SUMMARY OVER ALL STAB

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	20/ 0.46	67/ 1.53	146/ 3.34	87/ 1.99	17/ 0.39	/	337.0/ 7.70	10.40772
NNE	/	22/ 0.50	118/ 2.70	287/ 6.56	184/ 4.21	8/ 0.18	/	619.0/14.15	10.38680
NE	/	17/ 0.39	87/ 1.99	173/ 3.95	105/ 2.40	3/ 0.07	/	385.0/ 8.80	10.07967
ENE	/	11/ 0.25	83/ 1.90	82/ 1.87	26/ 0.59	/	/	202.0/ 4.62	8.18159
E	/	18/ 0.41	88/ 2.01	66/ 1.51	3/ 0.07	/	/	175.0/ 4.00	6.69115
ESE	/	27/ 0.62	68/ 1.55	24/ 0.55	4/ 0.09	4/ 0.09	/	127.0/ 2.90	6.14598
SE	/	19/ 0.43	75/ 1.71	48/ 1.10	2/ 0.05	1/ 0.02	1/ 0.02	146.0/ 3.34	6.81025
SSE	/	19/ 0.43	79/ 1.81	85/ 1.94	18/ 0.41	2/ 0.05	/	203.0/ 4.64	7.91416
S	/	7/ 0.16	73/ 1.67	125/ 2.86	34/ 0.78	1/ 0.02	/	240.0/ 5.49	9.02025
SSW	/	19/ 0.43	105/ 2.40	206/ 4.71	41/ 0.94	5/ 0.11	/	376.0/ 8.59	8.88764
SW	/	13/ 0.30	164/ 3.75	261/ 5.97	73/ 1.67	5/ 0.11	/	516.0/11.79	9.10086
WSW	/	17/ 0.39	149/ 3.41	158/ 3.61	39/ 0.89	1/ 0.02	/	364.0/ 8.32	8.36363
W	/	23/ 0.53	119/ 2.72	97/ 2.22	11/ 0.25	4/ 0.09	/	254.0/ 5.81	7.42372
WNW	/	20/ 0.46	59/ 1.35	53/ 1.21	25/ 0.57	2/ 0.05	/	159.0/ 3.63	7.88297
NW	/	16/ 0.37	56/ 1.28	49/ 1.12	19/ 0.43	2/ 0.05	2/ 0.05	144.0/ 3.29	8.32673
NNW	/	17/ 0.39	41/ 0.94	43/ 0.98	22/ 0.50	3/ 0.07	2/ 0.05	128.0/ 2.93	8.76271
TOTAL	/	285/ 6.51	1431/32.71	1903/43.50	693/15.84	68/ 1.33	5/ 0.11	4375/ 100	8.85240

NUMBER OF BAD RECORDS: 41

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 3
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=A

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	5/ 0.11	8/ 0.18	3/ 0.07	3/ 0.07	/	19.0/ 0.43	11.02480
NNE	/	/	2/ 0.05	19/ 0.43	17/ 0.39	/	/	38.0/ 0.87	12.00644
NE	/	/	2/ 0.05	7/ 0.16	10/ 0.23	/	/	19.0/ 0.43	11.80765
ENE	/	/	4/ 0.09	14/ 0.32	6/ 0.14	/	/	24.0/ 0.55	10.43878
E	/	/	1/ 0.02	8/ 0.18	/	/	/	9.0/ 0.21	9.02303
ESE	/	/	5/ 0.11	6/ 0.14	1/ 0.02	/	/	12.0/ 0.27	7.88588
SE	/	/	12/ 0.27	3/ 0.07	/	/	/	15.0/ 0.34	6.61219
SSE	/	/	7/ 0.16	10/ 0.23	1/ 0.02	/	/	18.0/ 0.41	8.72658
S	/	/	4/ 0.09	15/ 0.34	1/ 0.02	/	/	20.0/ 0.46	9.58145
SSW	/	/	8/ 0.18	10/ 0.23	2/ 0.05	/	/	20.0/ 0.46	8.70518
SW	/	/	10/ 0.23	19/ 0.43	8/ 0.21	/	/	38.0/ 0.87	9.75092
WSW	/	/	4/ 0.09	7/ 0.16	2/ 0.05	/	/	13.0/ 0.30	9.66765
W	/	/	5/ 0.11	3/ 0.07	/	/	/	8.0/ 0.18	7.14732
WNW	/	/	3/ 0.07	5/ 0.11	/	/	/	8.0/ 0.18	7.94355
NW	/	/	1/ 0.02	2/ 0.05	3/ 0.07	/	/	6.0/ 0.14	10.78872
NNW	/	/	1/ 0.02	/	4/ 0.09	/	/	5.0/ 0.11	13.97364
TOTAL	/	/	74/ 1.69	136/ 3.11	59/ 1.35	3/ 0.07	/	272.0/ 6.22	9.88958

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SY[illegible] - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1A[illegible] (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUA[illegible] 26, 1984

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 5
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=B

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	6/ 0.14	6/ 0.14	6/ 0.14	/	/	18.0/ 0.41	10.18194
NNE	/	/	7/ 0.16	13/ 0.30	5/ 0.11	/	/	25.0/ 0.57	9.99699
NE	/	/	9/ 0.21	8/ 0.18	9/ 0.21	2/ 0.05	/	28.0/ 0.64	11.20738
ENE	/	/	8/ 0.18	10/ 0.23	1/ 0.02	/	/	19.0/ 0.43	7.85656
E	/	/	6/ 0.14	4/ 0.09	/	/	/	10.0/ 0.23	6.95347
ESE	/	1/ 0.02	9/ 0.21	1/ 0.02	/	/	/	11.0/ 0.25	4.97824
SE	/	3/ 0.07	4/ 0.09	1/ 0.02	1/ 0.02	/	/	9.0/ 0.21	5.93630
SSE	/	/	5/ 0.11	9/ 0.21	/	/	/	14.0/ 0.32	8.17710
S	/	/	2/ 0.05	5/ 0.11	1/ 0.02	/	/	8.0/ 0.18	9.13581
SSW	/	1/ 0.02	1/ 0.02	1/ 0.02	/	2/ 0.05	/	5.0/ 0.11	11.51909
SW	/	/	10/ 0.23	9/ 0.21	3/ 0.07	/	/	22.0/ 0.50	8.62476
WSW	/	/	12/ 0.27	10/ 0.23	/	/	/	22.0/ 0.50	7.39233
W	/	/	15/ 0.34	5/ 0.11	/	/	/	20.0/ 0.46	6.87093
WNW	/	/	1/ 0.02	/	/	/	/	1.0/ 0.02	6.78672
NW	/	/	3/ 0.07	4/ 0.09	1/ 0.02	/	/	8.0/ 0.18	8.60847
NNW	/	/	/	4/ 0.09	1/ 0.02	/	/	5.0/ 0.11	11.10888
TOTAL	/	5/ 0.11	98/ 2.24	90/ 2.06	28/ 0.64	4/ 0.09	/	225.0/ 5.14	8.62293

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 7
PROGRAM [MDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=C

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	8/ 0.18	14/ 0.32	5/ 0.11	1/ 0.02	/	28.0/ 0.64	9.60063
NNE	/	1/ 0.02	8/ 0.18	12/ 0.27	12/ 0.27	/	/	33.0/ 0.75	10.42592
NE	/	1/ 0.02	8/ 0.18	8/ 0.18	8/ 0.18	/	/	25.0/ 0.57	10.34828
ENE	/	/	9/ 0.21	7/ 0.16	2/ 0.05	/	/	18.0/ 0.41	8.24301
E	/	2/ 0.05	7/ 0.16	4/ 0.09	1/ 0.02	/	/	14.0/ 0.32	6.98444
ESE	/	2/ 0.05	7/ 0.16	/	/	/	/	9.0/ 0.21	4.36329
SE	/	/	5/ 0.11	1/ 0.02	/	/	/	6.0/ 0.14	5.67506
SSE	/	1/ 0.02	5/ 0.11	2/ 0.05	/	/	/	8.0/ 0.18	5.94672
S	/	/	5/ 0.11	2/ 0.05	1/ 0.02	/	/	8.0/ 0.18	8.44380
SSW	/	/	2/ 0.05	6/ 0.14	3/ 0.07	/	/	11.0/ 0.25	11.19347
SW	/	/	9/ 0.21	11/ 0.25	2/ 0.05	/	/	22.0/ 0.50	8.65660
WSW	/	/	10/ 0.23	4/ 0.09	/	/	/	14.0/ 0.32	6.88201
W	/	2/ 0.05	14/ 0.32	4/ 0.09	1/ 0.02	1/ 0.02	/	22.0/ 0.50	7.02699
WNW	/	/	4/ 0.09	2/ 0.05	1/ 0.02	/	/	7.0/ 0.16	8.10643
NW	/	/	2/ 0.05	2/ 0.05	4/ 0.09	/	1/ 0.02	9.0/ 0.21	13.32517
NNW	/	/	4/ 0.09	3/ 0.07	1/ 0.02	/	/	8.0/ 0.18	7.67884
TOTAL	/	9/ 0.21	107/ 2.45	82/ 1.87	41/ 0.94	2/ 0.05	1/ 0.02	242.0/ 5.53	8.71404

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2- (MDFREQ) - FEB. 1983 16:53 THURSDAY, JANUAR. 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

9
16:53 THURSDAY, JANUARY 26, 1984

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=D

UPWNDDEG	CALM	UPWNDSPD .75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	4/ 0.09	21/ 0.48	46/ 1.05	49/ 1.12	13/ 0.30	/	133.0/ 3.04	12.10329
NNE	/	3/ 0.07	26/ 0.59	146/ 3.34	139/ 3.18	8/ 0.18	/	322.0/ 7.36	11.93997
NE	/	4/ 0.09	35/ 0.80	106/ 2.42	68/ 1.55	/	/	213.0/ 4.87	10.69872
ENE	/	4/ 0.09	41/ 0.94	31/ 0.71	7/ 0.16	/	/	83.0/ 1.90	7.66286
E	/	7/ 0.16	34/ 0.78	25/ 0.57	1/ 0.02	/	/	67.0/ 1.53	6.48060
ESE	/	17/ 0.39	23/ 0.53	8/ 0.18	1/ 0.02	/	/	49.0/ 1.12	5.23357
SE	/	13/ 0.30	25/ 0.57	12/ 0.27	/	/	/	50.0/ 1.14	5.68584
SSE	/	9/ 0.21	30/ 0.69	22/ 0.50	7/ 0.16	1/ 0.02	/	69.0/ 1.58	7.54435
S	/	/	22/ 0.50	38/ 0.87	13/ 0.30	/	/	73.0/ 1.67	9.04828
SSW	/	2/ 0.05	33/ 0.75	71/ 1.62	16/ 0.37	1/ 0.02	/	123.0/ 2.81	9.39765
SW	/	3/ 0.07	47/ 1.07	44/ 1.01	10/ 0.23	1/ 0.02	/	105.0/ 2.40	8.35116
WSW	/	1/ 0.02	43/ 0.98	33/ 0.75	16/ 0.37	/	/	93.0/ 2.13	8.74152
W	/	2/ 0.05	29/ 0.66	35/ 0.80	2/ 0.05	2/ 0.05	/	70.0/ 1.60	8.13692
WNW	/	4/ 0.09	23/ 0.53	17/ 0.39	10/ 0.23	2/ 0.05	/	56.0/ 1.28	8.56499
NW	/	2/ 0.05	17/ 0.39	15/ 0.34	9/ 0.21	2/ 0.05	1/ 0.02	46.0/ 1.05	9.84296
NNW	/	4/ 0.09	7/ 0.16	7/ 0.16	6/ 0.14	3/ 0.07	2/ 0.05	29.0/ 0.66	10.99055
TOTAL	/	79/ 1.81	456/10.42	656/14.99	354/ 8.09	33/ 0.75	3/ 0.07	1581/36.14	9.60895

NUMBER OF BAD RECORDS: 1

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2_ (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUAR 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 11
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=E

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	8/ 0.18	10/ 0.23	53/ 1.21	21/ 0.48	/	/	92.0/ 2.10	9.74201
NNE	/	2/ 0.05	33/ 0.75	53/ 1.21	10/ 0.23	/	/	98.0/ 2.24	8.52246
NE	/	5/ 0.11	17/ 0.39	28/ 0.64	10/ 0.23	1/ 0.02	/	61.0/ 1.39	9.13407
ENE	/	2/ 0.05	10/ 0.23	16/ 0.37	8/ 0.18	/	/	36.0/ 0.82	9.36162
E	/	6/ 0.14	18/ 0.41	15/ 0.34	1/ 0.02	/	/	40.0/ 0.91	6.91971
ESE	/	2/ 0.05	12/ 0.27	6/ 0.14	2/ 0.05	4/ 0.09	/	26.0/ 0.59	9.11481
SE	/	1/ 0.02	20/ 0.46	22/ 0.50	1/ 0.02	1/ 0.02	1/ 0.02	46.0/ 1.05	8.31357
SSE	/	6/ 0.14	12/ 0.27	25/ 0.57	9/ 0.21	1/ 0.02	/	53.0/ 1.21	8.84845
S	/	4/ 0.09	23/ 0.53	43/ 0.98	16/ 0.37	1/ 0.02	/	87.0/ 1.99	9.51836
SSW	/	5/ 0.11	38/ 0.87	68/ 1.55	13/ 0.30	2/ 0.05	/	126.0/ 2.88	8.78614
SW	/	1/ 0.02	49/ 1.12	103/ 2.35	34/ 0.78	4/ 0.09	/	191.0/ 4.37	9.88923
WSW	/	3/ 0.07	41/ 0.94	60/ 1.37	15/ 0.34	1/ 0.02	/	120.0/ 2.74	9.06634
W	/	4/ 0.09	29/ 0.66	37/ 0.85	8/ 0.18	1/ 0.02	/	79.0/ 1.81	8.42108
WNW	/	3/ 0.07	12/ 0.27	14/ 0.32	11/ 0.25	/	/	40.0/ 0.91	8.97865
NW	/	2/ 0.05	20/ 0.46	9/ 0.21	/	/	/	31.0/ 0.71	6.58555
NNW	/	4/ 0.09	12/ 0.27	15/ 0.34	8/ 0.18	/	/	39.0/ 0.89	8.91044
TOTAL	/	58/ 1.33	356/ 8.14	567/12.96	167/ 3.82	16/ 0.37	1/ 0.02	1165/26.63	8.99472

NUMBER OF BAD RECORDS: 0

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2- (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUAR. -6, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

13
16:53 THURSDAY, JANUARY 26, 1984

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=F

UPWNDDEG	UPWNDSPD								
	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	5/ 0.11	9/ 0.21	16/ 0.37	3/ 0.07	/	/	33.0/ 0.75	8.03785
NNE	/	6/ 0.14	26/ 0.59	26/ 0.59	/	/	/	58.0/ 1.33	6.93277
NE	/	3/ 0.07	9/ 0.21	12/ 0.27	/	/	/	24.0/ 0.55	7.02782
ENE	/	3/ 0.07	/	3/ 0.07	2/ 0.05	/	/	8.0/ 0.18	8.02484
E	/	1/ 0.02	4/ 0.09	3/ 0.07	/	/	/	8.0/ 0.18	6.15933
ESE	/	3/ 0.07	5/ 0.11	2/ 0.05	/	/	/	10.0/ 0.23	5.09755
SE	/	/	5/ 0.11	9/ 0.21	/	/	/	14.0/ 0.32	8.01710
SSE	/	1/ 0.02	13/ 0.30	10/ 0.23	1/ 0.02	/	/	25.0/ 0.57	7.53910
S	/	1/ 0.02	9/ 0.21	13/ 0.30	1/ 0.02	/	/	24.0/ 0.55	8.19646
SSW	/	5/ 0.11	11/ 0.25	19/ 0.43	6/ 0.14	/	/	41.0/ 0.94	8.16709
SW	/	2/ 0.05	17/ 0.39	44/ 1.01	12/ 0.27	/	/	75.0/ 1.71	9.25218
WSW	/	2/ 0.05	15/ 0.34	25/ 0.57	2/ 0.05	/	/	44.0/ 1.01	8.28065
W	/	9/ 0.21	11/ 0.25	9/ 0.21	/	/	/	29.0/ 0.66	5.74827
WNW	/	8/ 0.18	7/ 0.16	14/ 0.32	3/ 0.07	/	/	32.0/ 0.73	7.05300
NW	/	3/ 0.07	6/ 0.14	14/ 0.32	2/ 0.05	/	/	25.0/ 0.57	8.01134
NNW	/	4/ 0.09	5/ 0.11	10/ 0.23	1/ 0.02	/	/	20.0/ 0.46	7.32616
TOTAL	/	56/ 1.28	152/ 3.47	229/ 5.23	33/ 0.75	/	/	470.0/10.74	7.72386

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2_ (MDFREQ) - FEB 1983 16:53 THURSDAY, JANUAR 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
16:53 THURSDAY, JANUARY 26, 1984
15

JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=G

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	3/ 0.07	8/ 0.18	3/ 0.07	/	/	/	14.0/ 0.32	5.32766
NNE	/	10/ 0.23	16/ 0.37	18/ 0.41	1/ 0.02	/	/	45.0/ 1.03	6.60515
NE	/	4/ 0.09	7/ 0.16	4/ 0.09	/	/	/	15.0/ 0.34	5.27597
ENE	/	2/ 0.05	11/ 0.25	1/ 0.02	/	/	/	14.0/ 0.32	4.80478
E	/	2/ 0.05	18/ 0.41	7/ 0.16	/	/	/	27.0/ 0.62	6.00609
ESE	/	2/ 0.05	7/ 0.16	1/ 0.02	/	/	/	10.0/ 0.23	4.74737
SE	/	2/ 0.05	4/ 0.09	/	/	/	/	6.0/ 0.14	4.78017
SSE	/	2/ 0.05	7/ 0.16	7/ 0.16	/	/	/	16.0/ 0.37	6.83988
S	/	2/ 0.05	8/ 0.18	9/ 0.21	1/ 0.02	/	/	20.0/ 0.46	7.36285
SSW	/	6/ 0.14	12/ 0.27	31/ 0.71	1/ 0.02	/	/	50.0/ 1.14	7.78222
SW	/	7/ 0.16	22/ 0.50	31/ 0.71	3/ 0.07	/	/	63.0/ 1.44	7.70941
WSW	/	11/ 0.25	24/ 0.55	19/ 0.43	4/ 0.09	/	/	58.0/ 1.33	6.80052
W	/	6/ 0.14	16/ 0.37	4/ 0.09	/	/	/	26.0/ 0.59	5.18785
WNW	/	5/ 0.11	9/ 0.21	1/ 0.02	/	/	/	15.0/ 0.34	4.12206
NW	/	9/ 0.21	7/ 0.16	3/ 0.07	/	/	/	19.0/ 0.43	4.64794
NNW	/	5/ 0.11	12/ 0.27	4/ 0.09	1/ 0.02	/	/	22.0/ 0.50	5.54671
TOTAL	/	78/ 1.78	188/ 4.30	143/ 3.27	11/ 0.25	/	/	420.0/ 9.60	6.40364

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS CAROLINA POWER & LIGHT COMPANY 16
PROGRAM IMDO1#2_ .MDFREQ) - FEB 1983 16:53 THURSDAY, JANUARY , 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 1
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC SUMMARY OVER ALL STAB

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	2.7/ 0.06	91/ 2.08	147/ 3.36	76/ 1.74	4/ 0.09	/	/	320.7/ 7.33	5.52521
NNE	1.6/ 0.04	53/ 1.21	276/ 6.31	209/ 4.78	1/ 0.02	/	/	540.6/12.36	6.78829
NE	1.0/ 0.02	33/ 0.75	156/ 3.57	137/ 3.13	1/ 0.02	/	/	328.0/ 7.50	6.90146
ENE	1.0/ 0.02	34/ 0.78	110/ 2.51	30/ 0.69	/	/	/	175.0/ 4.00	5.31400
E	1.2/ 0.03	41/ 0.94	70/ 1.60	7/ 0.16	/	/	/	119.2/ 2.72	4.40572
ESE	1.0/ 0.02	32/ 0.73	52/ 1.19	8/ 0.18	1/ 0.02	/	/	94.0/ 2.15	4.45896
SE	1.3/ 0.03	42/ 0.96	74/ 1.69	6/ 0.14	2/ 0.05	/	/	125.3/ 2.86	4.43486
SSE	2.3/ 0.05	77/ 1.76	146/ 3.34	31/ 0.71	2/ 0.05	/	/	258.3/ 5.90	4.80002
S	4.3/ 0.10	144/ 3.29	130/ 2.97	71/ 1.62	4/ 0.09	/	/	353.3/ 8.08	4.82803
SSW	5.4/ 0.12	179/ 4.09	209/ 4.78	59/ 1.35	8/ 0.18	/	/	460.4/10.52	4.75930
SW	3.9/ 0.09	128/ 2.93	204/ 4.66	73/ 1.67	2/ 0.05	/	/	410.9/ 9.39	5.07306
WSW	2.7/ 0.06	89/ 2.03	142/ 3.25	29/ 0.66	1/ 0.02	/	/	263.7/ 6.03	4.61904
W	1.9/ 0.04	62/ 1.42	104/ 2.38	20/ 0.46	1/ 0.02	/	/	188.9/ 4.32	4.60573
WNW	2.5/ 0.06	84/ 1.92	71/ 1.62	15/ 0.34	/	/	/	172.5/ 3.94	3.92782
NW	3.0/ 0.07	100/ 2.29	54/ 1.23	17/ 0.39	2/ 0.05	/	/	176.0/ 4.02	3.77109
NNW	5.1/ 0.12	170/ 3.89	179/ 4.09	31/ 0.71	3/ 0.07	/	/	388.1/ 8.87	4.17952
TOTAL	41.0/ 0.94	1359/31.06	2124/48.55	819/18.72	32/ 0.73	/	/	4375/ 100	5.12183

NUMBER OF BAD RECORDS: 41

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2. (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUAR. 6, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 3
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=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	/	/	6/ 0.14	12/ 0.27	/	/	/	18.0/ 0.41	8.22911
NNE	/	/	12/ 0.27	28/ 0.64	/	/	/	40.0/ 0.91	8.48674
NE	/	/	5/ 0.11	18/ 0.41	/	/	/	23.0/ 0.53	8.52817
ENE	/	/	6/ 0.14	13/ 0.30	/	/	/	19.0/ 0.43	7.98615
E	/	/	6/ 0.14	3/ 0.07	/	/	/	9.0/ 0.21	6.49954
ESE	/	/	11/ 0.25	2/ 0.05	/	/	/	13.0/ 0.30	6.16590
SE	/	/	17/ 0.39	1/ 0.02	/	/	/	18.0/ 0.41	6.09656
SSE	/	/	13/ 0.30	7/ 0.16	/	/	/	20.0/ 0.46	7.14190
S	/	/	5/ 0.11	15/ 0.34	/	/	/	20.0/ 0.46	8.25412
SSW	/	/	16/ 0.37	10/ 0.23	1/ 0.02	/	/	27.0/ 0.62	7.53175
SW	/	/	14/ 0.32	14/ 0.32	1/ 0.02	/	/	29.0/ 0.66	7.92062
WSW	/	/	5/ 0.11	6/ 0.14	/	/	/	11.0/ 0.25	7.98126
W	/	/	5/ 0.11	2/ 0.05	/	/	/	7.0/ 0.16	6.51040
WNW	/	/	5/ 0.11	1/ 0.02	/	/	/	6.0/ 0.14	6.69223
NW	/	/	3/ 0.07	3/ 0.07	/	/	/	6.0/ 0.14	7.12300
NNW	/	/	1/ 0.02	5/ 0.11	/	/	/	6.0/ 0.14	8.89611
TOTAL	/	/	130/ 2.97	140/ 3.20	2/ 0.05	/	/	272.0/ 6.22	7.70029

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#. MDFREQ) - FEB 1983 16:51 THURSDAY, JANUAR ., 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 5
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=B

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	/	/	11/ 0.25	8/ 0.18	/	/	/	19.0/ 0.43	7.60117
NNE	/	/	15/ 0.34	11/ 0.25	/	/	/	26.0/ 0.59	7.13946
NE	/	1/ 0.02	11/ 0.25	15/ 0.34	1/ 0.02	/	/	28.0/ 0.64	8.16063
ENE	/	/	13/ 0.30	4/ 0.09	/	/	/	17.0/ 0.39	6.36494
E	/	1/ 0.02	9/ 0.21	1/ 0.02	/	/	/	11.0/ 0.25	5.29355
ESE	/	1/ 0.02	8/ 0.18	/	/	/	/	9.0/ 0.21	4.79499
SE	/	1/ 0.02	10/ 0.23	1/ 0.02	/	/	/	12.0/ 0.27	5.16786
SSE	/	1/ 0.02	8/ 0.18	6/ 0.14	/	/	/	15.0/ 0.34	6.89974
S	/	1/ 0.02	4/ 0.09	2/ 0.05	1/ 0.02	/	/	8.0/ 0.18	7.50166
SSW	/	/	4/ 0.09	2/ 0.05	1/ 0.02	/	/	7.0/ 0.16	8.11120
SW	/	/	19/ 0.43	8/ 0.18	/	/	/	27.0/ 0.62	6.73979
WSW	/	/	15/ 0.34	4/ 0.09	/	/	/	19.0/ 0.43	5.99744
W	/	/	9/ 0.21	3/ 0.07	/	/	/	12.0/ 0.27	6.40876
WNW	/	/	2/ 0.05	/	/	/	/	2.0/ 0.05	5.71952
NW	/	/	7/ 0.16	/	/	/	/	7.0/ 0.16	5.93868
NNW	/	/	2/ 0.05	4/ 0.09	/	/	/	6.0/ 0.14	8.06792
TOTAL	/	6/ 0.14	147/ 3.36	69/ 1.58	3/ 0.07	/	/	225.0/ 5.14	6.77637

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#2. (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUAR. 5, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 7
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=C

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	/	/	26/ 0.59	9/ 0.21	/	/	/	35.0/ 0.80	6.48943
NNE	/	1/ 0.02	12/ 0.27	13/ 0.30	/	/	/	26.0/ 0.59	7.66858
NE	/	1/ 0.02	11/ 0.25	16/ 0.37	/	/	/	28.0/ 0.64	7.64291
ENE	/	/	15/ 0.34	5/ 0.11	/	/	/	20.0/ 0.46	6.20643
E	/	2/ 0.05	8/ 0.18	1/ 0.02	/	/	/	11.0/ 0.25	5.38602
ESE	/	1/ 0.02	8/ 0.18	/	/	/	/	9.0/ 0.21	4.06129
SE	/	2/ 0.05	5/ 0.11	1/ 0.02	/	/	/	8.0/ 0.18	4.63495
SSE	/	1/ 0.02	8/ 0.18	1/ 0.02	/	/	/	10.0/ 0.23	5.93963
S	/	/	2/ 0.05	4/ 0.09	1/ 0.02	/	/	7.0/ 0.16	8.41611
SSW	/	1/ 0.02	5/ 0.11	5/ 0.11	1/ 0.02	/	/	12.0/ 0.27	7.72608
SW	/	/	15/ 0.34	7/ 0.16	/	/	/	22.0/ 0.50	6.75337
WSW	/	/	11/ 0.25	1/ 0.02	/	/	/	12.0/ 0.27	5.96965
W	/	2/ 0.05	14/ 0.32	2/ 0.05	/	/	/	18.0/ 0.41	5.66301
WNW	/	/	8/ 0.18	2/ 0.05	/	/	/	10.0/ 0.23	6.10972
NW	/	/	1/ 0.02	4/ 0.09	1/ 0.02	/	/	6.0/ 0.14	10.25234
NNW	/	/	7/ 0.16	1/ 0.02	/	/	/	8.0/ 0.18	6.19476
TOTAL	/	11/ 0.25	156/ 3.57	72/ 1.65	3/ 0.07	/	/	242.0/ 5.53	6.62337

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYS - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 9
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=D

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	/	10/ 0.23	63/ 1.44	46/ 1.05	4/ 0.09	/	/	123.0/ 2.81	7.03698
NNE	/	9/ 0.21	190/ 4.34	152/ 3.47	1/ 0.02	/	/	352.0/ 8.05	7.31057
NE	/	13/ 0.30	98/ 2.24	82/ 1.87	/	/	/	193.0/ 4.41	7.06910
ENE	/	16/ 0.37	53/ 1.21	8/ 0.18	/	/	/	77.0/ 1.76	5.17553
E	/	20/ 0.46	41/ 0.94	1/ 0.02	/	/	/	62.0/ 1.42	4.35191
ESE	/	16/ 0.37	20/ 0.46	1/ 0.02	/	/	/	37.0/ 0.85	3.83164
SE	/	16/ 0.37	31/ 0.71	1/ 0.02	/	/	/	48.0/ 1.10	4.05480
SSE	/	10/ 0.23	60/ 1.37	10/ 0.23	1/ 0.02	/	/	81.0/ 1.85	5.48340
S	/	9/ 0.21	63/ 1.44	29/ 0.66	1/ 0.02	/	/	102.0/ 2.33	6.29263
SSW	/	8/ 0.18	83/ 1.90	30/ 0.69	2/ 0.05	/	/	123.0/ 2.81	6.33772
SW	/	14/ 0.32	61/ 1.39	29/ 0.66	/	/	/	104.0/ 2.38	5.99033
WSW	/	15/ 0.34	49/ 1.12	11/ 0.25	/	/	/	75.0/ 1.71	5.37343
W	/	8/ 0.18	39/ 0.89	10/ 0.23	/	/	/	57.0/ 1.30	5.45984
WNW	/	12/ 0.27	30/ 0.69	10/ 0.23	/	/	/	52.0/ 1.19	5.63583
NW	/	10/ 0.23	25/ 0.57	10/ 0.23	1/ 0.02	/	/	46.0/ 1.05	5.73765
NNW	/	1/ 0.02	25/ 0.57	20/ 0.46	3/ 0.07	/	/	49.0/ 1.12	7.80492
TOTAL	/	187/ 4.27	931/21.28	450/10.29	13/ 0.30	/	/	1581/36.14	6.29357

NUMBER OF BAD RECORDS: 1

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT.

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SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=E

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	0.1/ 0.00	24/ 0.55	36/ 0.82	1/ 0.02	/	/	/	61.1/ 1.40	4.15913
NNE	0.1/ 0.00	16/ 0.37	45/ 1.03	5/ 0.11	/	/	/	66.1/ 1.51	4.78044
NE	0.0/ 0.00	9/ 0.21	30/ 0.69	6/ 0.14	/	/	/	45.0/ 1.03	5.29005
ENE	0.1/ 0.00	14/ 0.32	22/ 0.50	/	/	/	/	36.1/ 0.83	3.75880
E	0.1/ 0.00	14/ 0.32	6/ 0.14	1/ 0.02	/	/	/	21.1/ 0.48	3.42963
ESE	0.0/ 0.00	6/ 0.14	4/ 0.09	5/ 0.11	1/ 0.02	/	/	16.0/ 0.37	6.30732
SE	0.1/ 0.00	14/ 0.32	11/ 0.25	2/ 0.05	2/ 0.05	/	/	29.1/ 0.67	4.71770
SSE	0.1/ 0.00	25/ 0.57	46/ 1.05	7/ 0.16	1/ 0.02	/	/	79.1/ 1.81	4.58931
S	0.2/ 0.00	39/ 0.89	49/ 1.12	20/ 0.46	1/ 0.02	/	/	109.2/ 2.50	5.00143
SSW	0.4/ 0.01	98/ 2.24	88/ 2.01	12/ 0.27	3/ 0.07	/	/	201.4/ 4.60	4.15542
SW	0.3/ 0.01	58/ 1.33	77/ 1.76	15/ 0.34	1/ 0.02	/	/	151.3/ 3.46	4.57532
WSW	0.1/ 0.00	29/ 0.66	52/ 1.19	6/ 0.14	1/ 0.02	/	/	88.1/ 2.01	4.44831
W	0.1/ 0.00	24/ 0.55	33/ 0.75	3/ 0.07	1/ 0.02	/	/	61.1/ 1.40	4.23916
WNW	0.1/ 0.00	27/ 0.62	19/ 0.43	2/ 0.05	/	/	/	48.1/ 1.10	3.37443
NW	0.1/ 0.00	16/ 0.37	13/ 0.30	/	/	/	/	29.1/ 0.67	3.30721
NNW	0.2/ 0.00	37/ 0.85	85/ 1.94	1/ 0.02	/	/	/	123.2/ 2.82	4.38673
TOTAL	2.0/ 0.05	450/10.29	616/14.08	86/ 1.97	11/ 0.25	/	/	1165/26.63	4.41429

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYST CAROLINA POWER & LIGHT COMPANY 12

PROGRAM IMDO1#2b (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 5, 1984

JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD

RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 13
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=F

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	0.7/ 0.02	22/ 0.50	2/ 0.05	/	/	/	/	24.7/ 0.56	2.34023
NNE	0.3/ 0.01	11/ 0.25	2/ 0.05	/	/	/	/	13.3/ 0.30	2.20473
NE	0.3/ 0.01	8/ 0.18	1/ 0.02	/	/	/	/	9.3/ 0.21	2.17043
ENE	0.0/ 0.00	1/ 0.02	1/ 0.02	/	/	/	/	2.0/ 0.05	3.55177
E	0.1/ 0.00	2/ 0.05	/	/	/	/	/	2.1/ 0.05	1.92357
ESE	0.1/ 0.00	2/ 0.05	1/ 0.02	/	/	/	/	3.1/ 0.07	2.57923
SE	/	/	/	/	/	/	/	/	
SSE	0.6/ 0.01	20/ 0.46	11/ 0.25	/	/	/	/	31.6/ 0.72	2.96614
S	1.3/ 0.03	42/ 0.96	7/ 0.16	1/ 0.02	/	/	/	51.3/ 1.17	2.66140
SSW	1.5/ 0.03	47/ 1.07	13/ 0.30	/	/	/	/	61.5/ 1.41	2.79800
SW	1.5/ 0.03	47/ 1.07	17/ 0.39	/	/	/	/	65.5/ 1.50	2.82596
WSW	0.9/ 0.02	29/ 0.66	5/ 0.11	1/ 0.02	/	/	/	35.9/ 0.82	2.61817
W	0.6/ 0.01	18/ 0.41	4/ 0.09	/	/	/	/	22.6/ 0.52	2.55215
WNW	0.7/ 0.02	22/ 0.50	4/ 0.09	/	/	/	/	26.7/ 0.61	2.22801
NW	0.9/ 0.02	29/ 0.66	4/ 0.09	/	/	/	/	33.9/ 0.77	2.24669
NNW	1.5/ 0.03	48/ 1.10	37/ 0.85	/	/	/	/	86.5/ 1.98	3.08525
TOTAL	11.0/ 0.25	348/ 7.95	109/ 2.49	2/ 0.05	/	/	/	470.0/10.74	2.69805

NUMBER OF BAD RECORDS: 0

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

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 15
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:51 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=JUL-DEC STAB=G

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	2.7/ 0.06	35/ 0.80	3/ 0.07	/	/	/	/	40.7/ 0.93	1.80329
NNE	1.3/ 0.03	16/ 0.37	/	/	/	/	/	17.3/ 0.40	1.44893
NE	0.1/ 0.00	1/ 0.02	/	/	/	/	/	1.1/ 0.03	1.11039
ENE	0.2/ 0.00	3/ 0.07	/	/	/	/	/	3.2/ 0.07	1.12295
E	0.2/ 0.00	2/ 0.05	/	/	/	/	/	2.2/ 0.05	0.83752
ESE	0.5/ 0.01	6/ 0.14	/	/	/	/	/	6.5/ 0.15	1.13196
SE	0.7/ 0.02	9/ 0.21	/	/	/	/	/	9.7/ 0.22	1.38169
SSE	1.6/ 0.04	20/ 0.46	/	/	/	/	/	21.6/ 0.49	1.43357
S	4.2/ 0.10	53/ 1.21	/	/	/	/	/	57.2/ 1.31	1.64489
SSW	2.0/ 0.05	25/ 0.57	/	/	/	/	/	27.0/ 0.62	1.63661
SW	0.7/ 0.02	9/ 0.21	1/ 0.02	/	/	/	/	10.7/ 0.24	1.88643
WSW	1.3/ 0.03	16/ 0.37	5/ 0.11	/	/	/	/	22.3/ 0.51	2.41486
W	0.8/ 0.02	10/ 0.23	/	/	/	/	/	10.8/ 0.25	1.45905
WNW	1.8/ 0.04	23/ 0.53	3/ 0.07	/	/	/	/	27.8/ 0.64	1.76884
NW	3.5/ 0.08	45/ 1.03	1/ 0.02	/	/	/	/	49.5/ 1.13	1.62486
NNW	6.6/ 0.15	84/ 1.92	22/ 0.50	/	/	/	/	112.6/ 2.57	2.48331
TOTAL	28.0/ 0.64	357/ 8.16	35/ 0.80	/	/	/	/	420.0/ 9.60	1.89081

NUMBER OF BAD RECORDS: 0

PROGRAM IMDO1#2F (DFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENC. FOR LOWNDDEG AND LOWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=B

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	6/ 0.28	5/ 0.23	4/ 0.18	/	/	15.0/ 0.69	9.33911
NNE	/	/	7/ 0.32	8/ 0.37	3/ 0.14	/	/	18.0/ 0.83	9.61592
NE	/	/	6/ 0.28	6/ 0.28	5/ 0.23	2/ 0.09	/	19.0/ 0.87	11.16610
ENE	/	/	4/ 0.18	8/ 0.37	1/ 0.05	/	/	13.0/ 0.60	8.27465
E	/	/	4/ 0.18	4/ 0.18	/	/	/	8.0/ 0.37	7.23278
ESE	/	1/ 0.05	9/ 0.41	1/ 0.05	/	/	/	11.0/ 0.51	4.97824
SE	/	3/ 0.14	4/ 0.18	1/ 0.05	1/ 0.05	/	/	9.0/ 0.41	5.93630
SSE	/	/	5/ 0.23	9/ 0.41	/	/	/	14.0/ 0.64	8.17710
S	/	/	1/ 0.05	4/ 0.18	1/ 0.05	/	/	6.0/ 0.28	10.07726
SSW	/	1/ 0.05	1/ 0.05	1/ 0.05	/	1/ 0.05	/	4.0/ 0.18	9.71318
SW	/	/	7/ 0.32	6/ 0.28	1/ 0.05	/	/	14.0/ 0.64	7.88727
WSW	/	/	10/ 0.46	7/ 0.32	/	/	/	17.0/ 0.78	7.09178
W	/	/	11/ 0.51	3/ 0.14	/	/	/	14.0/ 0.64	6.68072
WNW	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	6.78672
NW	/	/	3/ 0.14	4/ 0.18	/	/	/	7.0/ 0.32	7.62047
NNW	/	/	/	2/ 0.09	/	/	/	2.0/ 0.09	9.24629
TOTAL	/	5/ 0.23	79/ 3.63	69/ 3.17	16/ 0.74	3/ 0.14	/	172.0/ 0.90	8.23186

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=C

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	/	7/ 0.32	5/ 0.23	/	/	/	12.0/ 0.55	7.52181
NNE	/	/	6/ 0.28	5/ 0.23	8/ 0.37	/	/	19.0/ 0.87	10.76766
NE	/	/	7/ 0.32	1/ 0.05	2/ 0.09	/	/	10.0/ 0.46	7.76554
ENE	/	/	7/ 0.32	5/ 0.23	2/ 0.09	/	/	14.0/ 0.64	8.51735
E	/	1/ 0.05	6/ 0.28	4/ 0.18	1/ 0.05	/	/	12.0/ 0.55	7.29114
ESE	/	1/ 0.05	7/ 0.32	/	/	/	/	8.0/ 0.37	4.55019
SE	/	/	5/ 0.23	1/ 0.05	/	/	/	6.0/ 0.28	5.67506
SSE	/	1/ 0.05	3/ 0.14	1/ 0.05	/	/	/	5.0/ 0.23	5.94297
S	/	/	3/ 0.14	2/ 0.09	1/ 0.05	/	/	6.0/ 0.28	8.94892
SSW	/	/	/	6/ 0.28	2/ 0.09	/	/	8.0/ 0.37	11.69959
SW	/	/	6/ 0.28	10/ 0.46	1/ 0.05	/	/	17.0/ 0.78	8.62294
WSW	/	/	7/ 0.32	2/ 0.09	/	/	/	9.0/ 0.41	6.58107
W	/	1/ 0.05	10/ 0.46	1/ 0.05	/	/	/	12.0/ 0.55	5.44717
WNW	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	6.53660
NW	/	/	2/ 0.09	1/ 0.05	/	/	/	3.0/ 0.14	6.64777
NNW	/	/	4/ 0.18	1/ 0.05	1/ 0.05	/	/	6.0/ 0.28	7.27308
TOTAL	/	4/ 0.18	84/ 3.86	46/ 2.11	18/ 0.83	/	/	152.0/ 6.99	7.85623

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

FORM 0113 (02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=D

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	1/ 0.05	10/ 0.46	17/ 0.78	15/ 0.69	3/ 0.14	/	46.0/ 2.11	11.53293
NNE	/	1/ 0.05	11/ 0.51	56/ 2.57	52/ 2.39	8/ 0.37	/	128.0/ 5.88	12.20193
NE	/	2/ 0.09	16/ 0.74	37/ 1.70	25/ 1.15	/	/	80.0/ 3.68	10.47093
ENE	/	1/ 0.05	25/ 1.15	18/ 0.83	3/ 0.14	/	/	47.0/ 2.16	7.45301
E	/	4/ 0.18	21/ 0.97	20/ 0.92	/	/	/	45.0/ 2.07	6.41802
ESE	/	4/ 0.18	12/ 0.55	4/ 0.18	1/ 0.05	/	/	21.0/ 0.97	5.94424
SE	/	7/ 0.32	18/ 0.83	6/ 0.28	/	/	/	31.0/ 1.42	5.45864
SSE	/	4/ 0.18	20/ 0.92	15/ 0.69	2/ 0.09	/	/	41.0/ 1.88	7.19831
S	/	/	14/ 0.64	28/ 1.29	6/ 0.28	/	/	48.0/ 2.21	8.79502
SSW	/	1/ 0.05	14/ 0.64	45/ 2.07	11/ 0.51	/	/	71.0/ 3.26	9.96061
SW	/	2/ 0.09	32/ 1.47	25/ 1.15	3/ 0.14	/	/	62.0/ 2.85	7.55727
WSW	/	/	27/ 1.24	8/ 0.37	/	/	/	35.0/ 1.61	6.38652
W	/	1/ 0.05	20/ 0.92	2/ 0.09	/	/	/	23.0/ 1.06	5.43242
WNW	/	2/ 0.09	12/ 0.55	1/ 0.05	/	1/ 0.05	/	16.0/ 0.74	5.79039
NW	/	1/ 0.05	10/ 0.46	7/ 0.32	1/ 0.05	/	/	19.0/ 0.87	7.13251
NNW	/	3/ 0.14	3/ 0.14	2/ 0.09	1/ 0.05	/	/	9.0/ 0.41	6.48287
TOTAL	/	34/ 1.56	265/12.18	291/13.37	120/ 5.51	12/ 0.55	/	722.0/33.18	8.85210

NUMBER OF BAD RECORDS: 1

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

16:50 THURSDAY, JANUARY 26, 1984

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=E

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	3/ 0.14	4/ 0.18	28/ 1.29	5/ 0.23	/	/	40.0/ 1.84	9.40845
NNE	/	/	14/ 0.64	22/ 1.01	2/ 0.09	/	/	38.0/ 1.75	8.22736
NE	/	5/ 0.23	7/ 0.32	8/ 0.37	1/ 0.05	1/ 0.05	/	22.0/ 1.01	7.35898
ENE	/	2/ 0.09	1/ 0.05	10/ 0.46	6/ 0.28	/	/	19.0/ 0.87	10.40695
E	/	4/ 0.18	8/ 0.37	8/ 0.37	/	/	/	20.0/ 0.92	6.26063
ESE	/	2/ 0.09	4/ 0.18	5/ 0.23	/	/	/	11.0/ 0.51	6.71396
SE	/	1/ 0.05	14/ 0.64	7/ 0.32	/	/	/	22.0/ 1.01	6.41457
SSE	/	3/ 0.14	7/ 0.32	12/ 0.55	/	/	/	22.0/ 1.01	7.11037
S	/	2/ 0.09	16/ 0.74	25/ 1.15	3/ 0.14	/	/	46.0/ 2.11	8.47779
SSW	/	3/ 0.14	27/ 1.24	42/ 1.93	3/ 0.14	/	/	75.0/ 3.45	8.13673
SW	/	1/ 0.05	35/ 1.61	77/ 3.54	4/ 0.18	/	/	117.0/ 5.38	8.54772
WSW	/	1/ 0.05	23/ 1.06	25/ 1.15	1/ 0.05	/	/	50.0/ 2.30	7.85492
W	/	2/ 0.09	16/ 0.74	5/ 0.23	1/ 0.05	/	/	24.0/ 1.10	6.24340
WNW	/	1/ 0.05	10/ 0.46	7/ 0.32	/	/	/	18.0/ 0.83	6.62368
NW	/	/	8/ 0.37	2/ 0.09	/	/	/	10.0/ 0.46	6.39653
NNW	/	2/ 0.09	8/ 0.37	2/ 0.09	1/ 0.05	/	/	13.0/ 0.60	6.73029
TOTAL	/	32/ 1.47	202/ 9.28	285/13.10	27/ 1.24	1/ 0.05	/	547.0/25.14	7.96858

NUMBER OF BAD RECORDS: 0

FORM : .02/83)

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

16:50 THURSDAY, JANUARY 26, 1984

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=F

UPWNDDEG \ UPWNDSPD	CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	5/ 0.23	6/ 0.28	11/ 0.51	3/ 0.14	/	/	25.0/ 1.15	8.02468
NNE	/	2/ 0.09	15/ 0.69	10/ 0.46	/	/	/	27.0/ 1.24	6.90839
NE	/	1/ 0.05	4/ 0.18	5/ 0.23	/	/	/	10.0/ 0.46	7.70051
ENE	/	3/ 0.14	/	2/ 0.09	1/ 0.05	/	/	6.0/ 0.28	6.80896
E	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.21194
ESE	/	2/ 0.09	2/ 0.09	1/ 0.05	/	/	/	5.0/ 0.23	4.51559
SE	/	/	4/ 0.18	1/ 0.05	/	/	/	5.0/ 0.23	5.30598
SSE	/	1/ 0.05	13/ 0.60	3/ 0.14	1/ 0.05	/	/	18.0/ 0.83	6.57643
S	/	1/ 0.05	9/ 0.41	10/ 0.46	/	/	/	20.0/ 0.92	7.57128
SSW	/	4/ 0.18	9/ 0.41	8/ 0.37	/	/	/	21.0/ 0.97	6.02920
SW	/	2/ 0.09	14/ 0.64	22/ 1.01	4/ 0.18	/	/	42.0/ 1.93	8.31010
WSW	/	/	11/ 0.51	13/ 0.60	1/ 0.05	/	/	25.0/ 1.15	8.07003
W	/	7/ 0.32	3/ 0.14	5/ 0.23	/	/	/	15.0/ 0.69	5.34712
WNW	/	4/ 0.18	6/ 0.28	7/ 0.32	/	/	/	17.0/ 0.78	5.92747
NW	/	1/ 0.05	3/ 0.14	6/ 0.28	1/ 0.05	/	/	11.0/ 0.51	7.41583
NNW	/	3/ 0.14	5/ 0.23	6/ 0.28	/	/	/	14.0/ 0.64	6.46156
TOTAL	/	36/ 1.65	105/ 4.83	111/ 5.10	11/ 0.51	/	/	263.0/12.09	7.10545

NUMBER OF BAD RECORDS: 0

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

16:50 THURSDAY, JANUARY 26, 1984

ENVIRONMENTAL MONITORING SYSTEM - CAROLINA POWER & LIGHT COMPANY 15
PROGRAM IMDO1#25 (MDFREQ) - FEB 1983 16:50 THURSDAY, JANUARY 26, 1984
JOINT OCCURRENCE FREQUENCIES FOR UPWNDDEG AND UPWNDSPD
RANGES INCLUDE LOWER END POINT, EXCLUDE UPPER END POINT

SITE=ROBN YEAR=83 PERIOD=3RD QTR STAB=G

UPWNDDEG	UPWNDSPD CALM	.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25	>= 25	TOTAL	AVERAGE UPWNDSPD
N	/	1/ 0.05	/	1/ 0.05	/	/	/	2.0/ 0.09	7.22861
NNE	/	4/ 0.18	3/ 0.14	5/ 0.23	/	/	/	12.0/ 0.55	5.98910
NE	/	/	/	/	/	/	/	/	
ENE	/	/	1/ 0.05	/	/	/	/	1.0/ 0.05	4.65232
E	/	/	/	/	/	/	/	/	
ESE	/	1/ 0.05	1/ 0.05	/	/	/	/	2.0/ 0.09	3.53510
SE	/	2/ 0.09	3/ 0.14	/	/	/	/	5.0/ 0.23	4.85909
SSE	/	2/ 0.09	5/ 0.23	2/ 0.09	/	/	/	9.0/ 0.41	5.53980
S	/	/	1/ 0.05	2/ 0.09	/	/	/	3.0/ 0.14	7.83169
SSW	/	1/ 0.05	1/ 0.05	3/ 0.14	/	/	/	5.0/ 0.23	6.98349
SW	/	2/ 0.09	2/ 0.09	4/ 0.18	/	/	/	8.0/ 0.37	6.67625
WSW	/	2/ 0.09	6/ 0.28	3/ 0.14	/	/	/	11.0/ 0.51	6.21523
W	/	/	1/ 0.05	1/ 0.05	/	/	/	2.0/ 0.09	7.01184
WNW	/	1/ 0.05	2/ 0.09	1/ 0.05	/	/	/	4.0/ 0.18	4.91079
NW	/	1/ 0.05	3/ 0.14	2/ 0.09	/	/	/	6.0/ 0.28	6.03357
NNW	/	2/ 0.09	4/ 0.18	3/ 0.14	/	/	/	9.0/ 0.41	5.57871
TOTAL	/	19/ 0.87	33/ 1.52	27/ 1.24	/	/	/	79.0/ 3.63	5.98063

NUMBER OF BAD RECORDS: 0

H. B. ROBINSON STEAM ELECTRIC PLANT
POST OFFICE BOX 790
HARTSVILLE, SOUTH CAROLINA 29550

(1)

FEB 2 9 1984

Robinson File No: 12510E

Serial: RSEP/84-79

Mr. James P. O'Reilly
Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

SUBJECT: Effluent and Waste Disposal Semi-Annual Report

Dear Mr. O'Reilly:

The Effluent and Waste Disposal Semi-Annual Report for July through December, 1983, is enclosed as required by 10CFR50.36a (a) (2).

Please contact me if you need additional information.

Very truly yours,

R. E. Morgan
General Manager
H. B. Robinson S. E. Plant

ALT/tld

Enclosure

cc: R. C. DeYoung (25)
R. A. Hartfield (2)
A. L. Taylor (2)
B. H. Webster (4)

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