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Carolina Power & Light Company

May 20, 1976

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MAY 24 1976
U.S. NUCLEAR REGULATORY COMMISSION
Mail Section

Mr. Benard C. Rusche
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

RE: DOCKET NOS. 50-400, 50-401, 50-402, AND 50-403

Dear Mr. Rusche:

In response to the letter from Mr. B. J. Youngblood, Chief, Environmental Projects Branch 2, dated April 2, 1976, requesting additional information to permit your staff to complete the 10CFR50, Appendix I evaluation of our Shearon Harris Nuclear Power Plant, we have enclosed the following information.

1. Location, flow, temperature and velocity for the mechanical vacuum system exhaust (Enclosure 1).

2. Location, flow, temperature and velocity for the exhausts from the fuel handling building, reactor auxiliary buildings, waste processing building and containment buildings (Enclosure 1).

3. Temperature and velocity data for the plant stacks (Enclosure 1).

4. Onsite meteorology data (Enclosure 2).

5. Pertinent information on all volatile treatment and condensate polishing system which have been incorporated into the plant design (Enclosure 3).

The information contained in the enclosures to this letter should permit your staff to complete their Appendix I evaluation. If we can be of further assistance to expedite the evaluation, please do not hesitate to call upon us.

DOCKETED USNRC
MAY 24 1976
U.S. NUCLEAR REGULATORY COMMISSION
Mail Section

Yours very truly,

J. A. Jones
Executive Vice President
Engineering, Construction & Operation

JAJ/mjc
Enclosures

5258

Sworn to and subscribed before me this 20th day of May, 1976.

Nancy A. Stephens
Notary Public

My commission expires: June 29, 1976

NANCY A. STEPHENS
NOTARY PUBLIC
WAKE COUNTY, N.C.

336 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

Enclosure 1

Shearon Harris Nuclear Power Plant
Plant Buildings Exhaust Systems

In response to Items 1, 2, and 3 of Mr. B. J. Youngblood's letter of April 2, 1976, the following information is provided:

For all buildings housing systems containing radioactive materials, a roughing filter, HEPA filter, and charcoal adsorber are located in series in the Ventilation Exhaust System in order to reduce radioactive releases (iodine and particulates). In addition to the above, each Reactor Containment Building has an internal recirculation system which contains a roughing filter, HEPA, and charcoal adsorber for additional filtering.

The Condenser Vacuum Pump Effluent Treatment System equipment for each unit is located near the condenser vacuum pumps in the Turbine Building at the 261' level. The system design flow rate is 130 SCFM and the design temperature range for the system will be 130°F to 140°F. The system will be capable of removing 99.5% of any iodine present. The discharge from this system and the exhaust from the Condensate-Polishing Demineralizer area will be discharged from a vent stack in each Turbine Building (incorporating a roughing filter, HEPA filter, and charcoal adsorber) located on the outboard side of the Turbine Buildings (one vent stack per two units). See Figure 1 for location and size.

The Control Room Air Supply System is equipped with a roughing filter, HEPA, and charcoal adsorber to protect the operators during an accident (high radiation) condition.

The following building exhaust systems vent through the RCB stack (one stack for Unit Nos. 1 and 2 and one stack for Unit Nos. 3 and 4):

(1) Reactor Containment Building Exhaust Systems

- (1.1) Hydrogen
- (1.2) Containment Purge
- (1.3) Pressure Relief

(2) Fuel Handling Building Exhaust System (approximately 95,000 to 165,000 SCFM - Units 1 and 2 only)

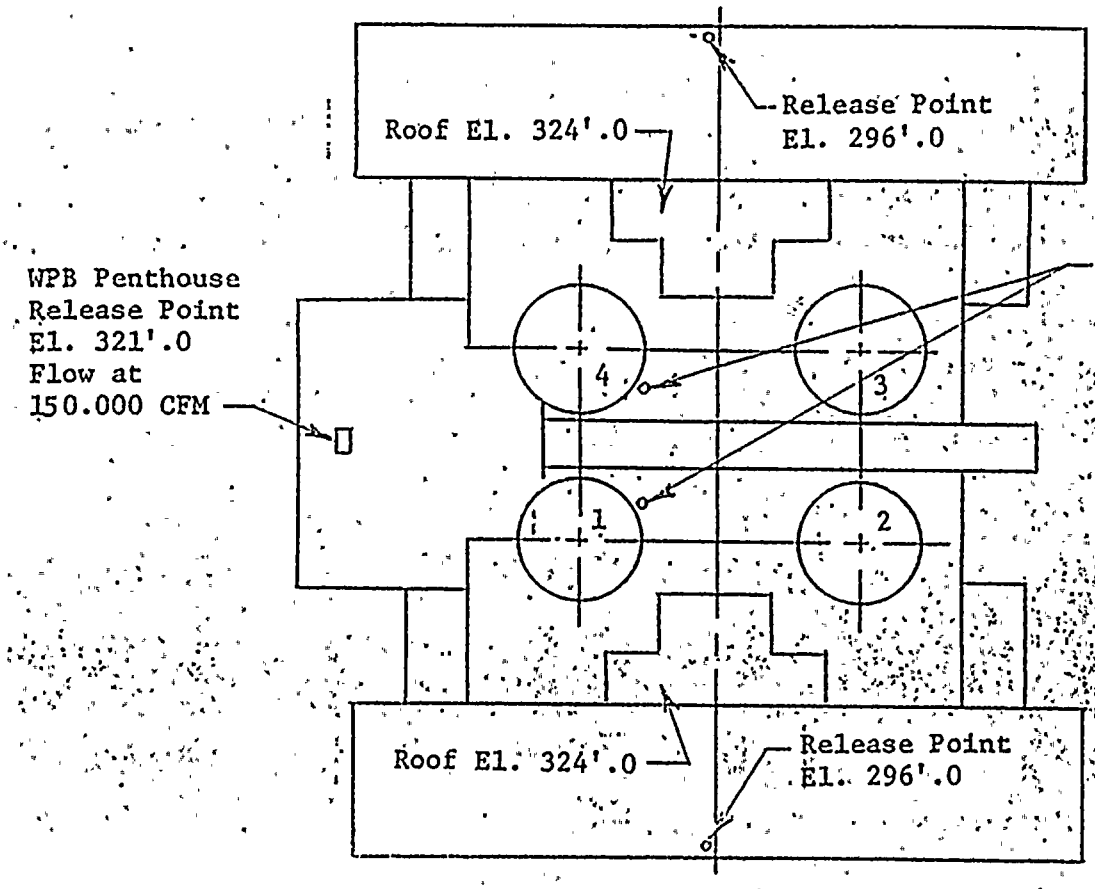
(3) Reactor Auxiliary Building Exhaust System (normal mode)

One stack per two units is located on the inboard side of Reactor Containment Building Nos. 1 and 4. The top of the stack is located approximately 16 feet above the Reactor Containment Building spring line approximately 132 feet above Grade Elevation (260 feet). The stack diameter for Unit Nos. 1 and 2 is 13 feet (10 feet for Unit Nos. 3 and 4) with the exhaust inlet to stack located at 21 feet above grade elevation.

Normal air flow through the stacks is shown on Figure 1 with a temperature range of 60° to 120°F. This includes flow from two reactor auxiliary buidling fans (one per unit), containment purge fans (one per unit), and normal fuel handling building exhaust (Unit Nos. 1 and 2 stack only).

The Waste Processing Building Exhaust System has a radiation monitor and exhaust to the atmosphere on top of the Waste Processing Building at 61 feet above grade elevation through a rectangular discharge utilizing a penthouse type vent stack (approximately 125 square feet free area in the louver section). The normal discharge is approximately 150,000 SCFM with a temperature range of 60° to 120°F. Stack velocities will range from approximately 2,500 to 3,100 feet per minute with a penthouse vent velocity of approximately 1200 feet per minute.

FIGURE 1



1. Release point at RCB Unit 1, El. 392'

   Combined Effluents from RAB Units 1&2; RCB Units 1&2, and FHB.

   Flow: 365,000 CFM Min. to 475,000 CFM Max.

   Stack I.D. 13 ft.

   Vel. 2770 FPM Min. to 3600 FPM Max.

2. Release Point at RCB Unit 4, El. 392'

   Combined Effluents from RAB Units 3&4 and RCB Units 3&4.

   Flow: 270,000 CFM Min. to 310,000 CFM Max.

   Stack I.D. 10'.6

   Vel. 3120 FPM Min. to 3580 FPM Max.

3. Release Point at Border Line of TB Units 1&2, El. 296'

   Combined Effluent from condensate polishers cubicles and Mech. Vac. Pumps effluent treat. systems.

   Flow: 20,000 CFM.

   Stack I.D. 3' 4".

   Vel: 2400 FPM.

   Exhaust temperature: 60-120°F

4. Release point at border line of TB Units 3&4, El. 296'.

   Combined effluent from condensate polishers cubicles and Mech. Vac. pumps effluent treat. system.

   Flow: 20,000 CFM.

   Stack I.D. 3'.4

   Vel: 2400 FPM.

   Exhaust temperature: 60-120°F

Enclosure 2

Shearon Harris Nuclear Power Plant
On-site Meteorological Data

The joint frequency distribution of wind speed and direction collected from the Shearon Harris on-site meteorological tower from April 1973 through March 1975 is included as Attachment 1. Comparative data from the Raleigh-Durham Airport is included as Attachment 3.

The preliminary analysis of a portion of the Attachment 1 data (completed prior to the October 1974 Atomic Safety and Licensing Board hearing) indicated an unusually high occurrence of "calm" wind conditions. The wind speed record from the 10-meter level was not considered representative of the site area. The reasons for the nonrepresentative data were believed to be:

1. The exposure of the instrumentation was unlike the plant site area, in that air flow at the lower tower level appeared to be restricted by the proximity of trees to the instrumentation.

2. The performance of the wind speed sensor near the threshold level was questionable for a significant portion of the period as a result of not completing sensor calibrations believed necessary to assure data accuracy. Periodic calibrations of the signal conditioning electronics was, however, performed.

Subsequent to the ASLB hearings, the following actions were taken:

1. A new wind sensor was specified for installation at the 10-meter level.

2. Additional trees were cleared from the tower site area to provide an exposure of at least 10 times the height of the nearest obstruction.

3. A calibration program was established which included semi-annual sensor changeout where sensor wind speed output would be traceable to National Bureau of Standards.

The information in Attachment 2 represents a summary of the wind speed direction and stability measurements recorded from January 15, 1976, through April 6, 1976, after the above actions were completed and on-site monitoring resumed.

A study is in progress to determine the correlation between 10-meter wind speed measurements for the two-year record (1973 through 1975) and the partial record of 1976. Preliminary results of the correlation study indicate that the close proximity of trees to the tower resulted in significantly lower measured wind speeds at 10 meters during the 1973-75 period. Based on these preliminary results, it is anticipated that the data for the 1973-75 period will be adjusted. If the final results of the study confirm the preliminary indications, we would then submit a corrected two-year joint wind frequency and present the methodology used to adjust the data. The results of this study are expected to be available by May 21, 1976.

Attachments:

1. Joint frequency distribution of wind speed and direction by atmospheric stability class, Harris site data from April 1, 1973 through March 31, 1975 - 10- and 60-meter levels.

2. Joint frequency distribution of wind speed and direction by atmospheric stability class, Harris site data from January 15, 1976 through April 6, 1976 - 10- and 60-meter levels.

3. Star output from Raleigh-Durham Airport - (1955 through 1964).

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS A
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	0.	12.	40.	25.	0.	0.	77.	10.7
NNE	0.	0.	14.	23.	21.	1.	0.	59.	10.9
NE	0.	0.	11.	29.	3.	0.	0.	43.	9.2
ENE	0.	1.	5.	11.	2.	0.	0.	19.	8.2
E	1.	2.	7.	4.	0.	0.	0.	14.	6.2
ESE	0.	1.	4.	1.	0.	0.	0.	6.	5.8
SE	0.	0.	6.	2.	0.	0.	0.	8.	6.9
SSE	0.	0.	8.	3.	1.	0.	0.	12.	7.4
S	0.	0.	5.	9.	2.	0.	0.	16.	9.6
SSW	0.	0.	2.	20.	14.	5.	2.	43.	13.4
SW	0.	0.	5.	28.	32.	18.	1.	84.	14.4
WSW	0.	0.	10.	43.	29.	11.	0.	93.	12.2
W	0.	0.	9.	21.	11.	3.	0.	44.	11.0
WNW	0.	0.	2.	6.	22.	10.	0.	40.	15.9
NW	0.	0.	2.	9.	20.	2.	0.	33.	13.4
NNW	0.	0.	5.	19.	15.	0.	0.	39.	11.7
TOTAL	1.	4.	107.	268.	197.	50.	3.	630.	10.4

NUMBER OF CALMS = 1
NUMBER OF BAD HOURS = 62

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS B
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	2.	23.	36.	8.	1.	0.	70.	9.0
NNE	0.	5.	10.	31.	6.	0.	0.	52.	8.5
NE	0.	3.	19.	28.	4.	0.	0.	54.	8.0
ENE	0.	4.	24.	19.	2.	0.	0.	49.	7.3
E	0.	2.	10.	5.	0.	0.	0.	17.	6.1
ESE	0.	3.	12.	10.	0.	0.	0.	25.	6.7
SE	0.	1.	15.	14.	3.	0.	0.	33.	8.4
SSE	0.	1.	14.	6.	3.	0.	0.	24.	7.3
S	0.	1.	7.	16.	2.	0.	0.	26.	8.6
SSW	0.	1.	9.	20.	16.	6.	0.	52.	11.7
SW	0.	1.	14.	28.	25.	8.	1.	77.	12.1
WSW	0.	2.	31.	33.	22.	4.	2.	94.	10.6
W	0.	0.	10.	11.	14.	3.	0.	38.	11.0
WNW	0.	0.	13.	14.	14.	8.	1.	50.	12.7
NW	1.	5.	7.	20.	18.	1.	0.	52.	10.9
NNW	0.	0.	9.	24.	14.	1.	0.	48.	10.6
TOTAL	1.	31.	227.	315.	151.	32.	4.	761.	9.3

NUMBER OF CALMS = 1
NUMBER OF BAD HOURS = 7

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 01/ 1/73 TO 11:00 PM 03/31/75

STABILITY CLASS C
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	1.	11.	45.	38.	6.	0.	0.	101.	7.4
NNE	0.	5.	37.	28.	4.	0.	0.	74.	7.5
NE	1.	7.	32.	19.	2.	0.	0.	61.	6.9
ENE	0.	4.	33.	19.	0.	0.	0.	56.	6.8
E	0.	4.	31.	8.	0.	0.	0.	43.	5.5
ESE	0.	4.	22.	8.	0.	0.	0.	34.	5.9
SE	1.	10.	14.	8.	1.	0.	0.	34.	6.0
SSE	0.	4.	20.	16.	2.	0.	0.	42.	7.2
S	0.	5.	30.	22.	5.	1.	0.	63.	7.5
SSW	0.	4.	30.	35.	21.	6.	0.	96.	10.0
SW	0.	1.	37.	58.	37.	14.	3.	150.	11.4
WSW	0.	2.	26.	47.	16.	7.	2.	100.	10.4
W	1.	7.	20.	20.	8.	2.	1.	59.	8.7
WNW	0.	4.	12.	22.	19.	3.	0.	60.	10.8
NW	0.	5.	13.	23.	29.	4.	0.	74.	11.5
NNW	0.	6.	18.	27.	7.	0.	0.	58.	8.5
TOTAL	4.	83.	420.	398.	157.	37.	6.	1105.	8.3

NUMBER OF CALMS = 4
NUMBER OF BAD HOURS = 9

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS D
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	3.	44.	201.	133.	79.	10.	0.	470.	8.3
NNE	3.	53.	180.	289.	79.	6.	1.	611.	8.8
NE	3.	45.	153.	202.	33.	1.	0.	437.	7.9
ENE	1.	32.	129.	140.	29.	3.	0.	334.	7.8
E	2.	35.	79.	35.	12.	0.	0.	163.	6.3
ESE	3.	43.	67.	35.	6.	1.	0.	155.	5.9
SE	2.	35.	93.	53.	6.	0.	0.	189.	6.2
SSE	0.	31.	99.	89.	46.	6.	1.	272.	8.5
S	3.	40.	95.	92.	33.	6.	0.	269.	7.9
SSW	3.	43.	133.	157.	83.	34.	3.	456.	9.7
SW	3.	58.	179.	141.	120.	38.	9.	548.	9.8
WSW	2.	38.	138.	131.	75.	25.	6.	415.	9.6
W	0.	28.	79.	71.	33.	10.	3.	224.	8.8
WNW	0.	31.	80.	53.	41.	17.	3.	225.	9.1
NW	2.	33.	87.	59.	61.	13.	0.	255.	9.3
NNW	2.	33.	99.	107.	50.	2.	0.	293.	8.3
TOTAL	32.	622.	1891.	1787.	786.	172.	26.	5316.	8.3

NUMBER OF CALMS = 32
NUMBER OF BAD HOURS = 132

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS E
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	1.	18.	67.	146.	55.	3.	0.	290.	9.4
NNE	1.	17.	86.	131.	35.	0.	0.	270.	8.4
NE	0.	11.	73.	102.	12.	0.	0.	198.	8.0
ENE	1.	16.	66.	110.	17.	6.	0.	216.	8.6
E	1.	16.	63.	57.	9.	2.	0.	148.	7.4
ESE	0.	14.	65.	56.	9.	2.	0.	146.	7.6
SE	0.	12.	79.	73.	10.	8.	0.	182.	8.3
SSE	1.	15.	111.	166.	51.	5.	1.	350.	9.2
S	2.	24.	100.	142.	45.	6.	0.	319.	8.7
SSW	1.	17.	97.	260.	126.	19.	1.	521.	10.6
SW	0.	12.	83.	205.	81.	33.	6.	420.	11.0
WSW	1.	16.	67.	97.	55.	1.	0.	237.	9.2
W	2.	23.	44.	64.	54.	2.	0.	189.	9.3
WNW	1.	17.	42.	59.	35.	3.	0.	157.	9.1
NW	0.	14.	43.	102.	54.	4.	1.	218.	10.1
NNW	2.	31.	50.	97.	45.	3.	0.	228.	8.9
TOTAL	14.	273.	1136.	1867.	693.	97.	9.	4089.	9.0

NUMBER OF CALMS = 14
NUMBER OF BAD HOURS = 204

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS F
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	8.	33.	76.	22.	0.	0.	139.	9.4
NNE	1.	12.	22.	64.	7.	0.	0.	106.	8.5
NE	1.	10.	32.	35.	5.	0.	0.	83.	7.3
ENE	1.	13.	39.	43.	5.	0.	0.	101.	7.4
E	1.	13.	30.	58.	4.	0.	0.	106.	7.8
ESE	1.	14.	28.	37.	2.	0.	0.	82.	6.9
SE	0.	8.	37.	37.	6.	0.	0.	88.	7.6
SSE	0.	8.	47.	63.	8.	0.	0.	126.	8.1
S	0.	6.	42.	60.	11.	0.	0.	119.	8.6
SSW	0.	6.	57.	154.	46.	0.	0.	263.	9.6
SW	0.	6.	56.	119.	19.	0.	0.	200.	9.1
WSW	0.	6.	37.	64.	46.	0.	0.	153.	10.0
W	0.	7.	34.	40.	13.	0.	0.	94.	8.3
WNW	0.	9.	21.	36.	11.	0.	0.	77.	8.4
NW	0.	6.	24.	38.	14.	0.	0.	82.	8.8
NNW	1.	12.	24.	39.	12.	0.	0.	88.	8.4
TOTAL	6.	144.	563.	963.	231.	0.	0.	1907.	8.4

NUMBER OF CALMS = 6
NUMBER OF BAD HOURS = 81

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS G
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	2.	35.	81.	95.	20.	0.	0.	233.	7.6
NNE	0.	17.	88.	90.	12.	0.	0.	207.	7.5
NE	2.	36.	79.	78.	12.	0.	0.	207.	7.1
ENE	2.	26.	70.	77.	9.	0.	0.	184.	7.2
E	2.	22.	63.	60.	7.	0.	0.	154.	7.1
ESE	2.	25.	51.	46.	4.	0.	0.	128.	6.6
SE	0.	11.	59.	75.	5.	0.	0.	150.	7.4
SSE	0.	20.	85.	54.	8.	0.	0.	167.	7.1
S	0.	18.	74.	58.	5.	0.	0.	155.	7.0
SSW	2.	28.	107.	153.	38.	0.	0.	328.	8.2
SW	2.	28.	100.	162.	19.	0.	0.	311.	8.1
WSW	2.	26.	109.	155.	34.	0.	0.	326.	8.2
W	1.	20.	83.	52.	7.	0.	0.	163.	6.9
WNW	0.	18.	49.	59.	2.	0.	0.	128.	7.1
NW	2.	37.	66.	36.	7.	1.	0.	149.	6.1
NNW	0.	19.	65.	38.	8.	0.	0.	130.	6.9
TOTAL	19.	386.	1229.	1288.	197.	1.	0.	3120.	7.2

NUMBER OF CALMS = 19
NUMBER OF BAD HOURS = 97

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

SUMMARY
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	7.	118.	462.	564.	215.	14.	0.	1380.	8.6
NNE	5.	109.	437.	656.	164.	7.	1.	1379.	8.5
NE	7.	112.	399.	493.	71.	1.	0.	1083.	7.7
ENE	5.	96.	366.	419.	64.	9.	0.	959.	7.7
E	7.	94.	283.	227.	32.	2.	0.	645.	6.9
ESE	6.	104.	249.	193.	21.	3.	0.	576.	6.7
SE	3.	77.	303.	262.	31.	8.	0.	684.	7.3
SSE	1.	79.	384.	397.	119.	11.	2.	993.	8.3
S	5.	94.	353.	399.	103.	13.	0.	967.	8.1
SSW	6.	99.	435.	799.	344.	70.	6.	1759.	9.8
SW	5.	106.	474.	741.	333.	111.	20.	1790.	10.2
WSW	5.	90.	418.	570.	277.	48.	10.	1418.	9.6
W	4.	85.	279.	279.	140.	20.	4.	811.	8.7
WNW	1.	79.	219.	249.	144.	41.	4.	737.	9.4
NW	5.	100.	242.	287.	203.	25.	1.	863.	9.3
NNW	5.	101.	270.	351.	151.	6.	0.	884.	8.5
TOTAL	77.	1543.	5573.	6886.	2412.	389.	48.	16928.	8.7

NUMBER OF CALMS = 77
NUMBER OF BAD HOURS = 592

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 01/ 1/73 TO 11:00 PM 03/31/75

STABILITY CLASS A
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	0.	43.	14.	0.	0.	0.	57.	6.2
NNE	0.	3.	39.	7.	0.	0.	0.	49.	5.8
NE	0.	1.	40.	6.	0.	0.	0.	47.	6.0
ENE	1.	3.	15.	1.	0.	0.	0.	20.	5.8
E	0.	1.	8.	0.	0.	0.	0.	9.	4.7
ESE	0.	1.	7.	0.	0.	0.	0.	8.	4.8
SE	0.	2.	6.	0.	0.	0.	0.	8.	3.9
SSE	1.	3.	7.	1.	0.	0.	0.	12.	4.7
S	0.	2.	10.	2.	0.	0.	0.	14.	5.7
SSW	0.	1.	16.	18.	4.	0.	0.	39.	8.4
SW	0.	0.	39.	50.	15.	0.	0.	104.	9.0
WSW	0.	2.	43.	33.	13.	0.	0.	91.	8.5
W	0.	1.	24.	16.	3.	0.	0.	44.	7.6
WNW	0.	0.	4.	25.	8.	0.	0.	37.	10.9
NW	0.	1.	14.	26.	2.	0.	0.	43.	8.5
NNW	0.	2.	30.	13.	0.	0.	0.	45.	6.7
TOTAL	2.	23.	345.	212.	45.	0.	0.	627.	0.7

NUMBER OF CALMS = 2
NUMBER OF BAD HOURS = 65

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/1/73 TO 11:00 PM 3/31/75

STABILITY CLASS B
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	1.	10.	37.	4.	0.	0.	0.	52.	5.0
NNE	1.	9.	38.	2.	0.	0.	0.	50.	5.0
NE	0.	8.	55.	5.	0.	0.	0.	68.	5.3
ENE	0.	8.	29.	0.	0.	0.	0.	37.	4.8
E	0.	6.	18.	0.	0.	0.	0.	24.	4.6
ESE	0.	5.	16.	0.	0.	0.	0.	21.	4.7
SE	0.	3.	18.	7.	0.	0.	0.	28.	5.6
SSE	0.	7.	20.	4.	0.	0.	0.	31.	5.0
S	0.	2.	21.	5.	0.	0.	0.	28.	5.9
SSW	0.	3.	28.	21.	3.	0.	0.	55.	7.6
SW	0.	4.	47.	31.	6.	0.	0.	88.	7.4
WSW	0.	3.	45.	30.	7.	0.	0.	85.	7.6
W	0.	3.	24.	19.	5.	0.	0.	51.	7.6
WNW	0.	4.	17.	21.	8.	0.	0.	50.	8.9
NW	0.	4.	29.	16.	1.	0.	0.	50.	7.1
NNW	0.	6.	23.	12.	0.	0.	0.	41.	6.2
TOTAL	2.	85.	465.	177.	30.	0.	0.	759.	6.1

NUMBER OF CALMS = 2
NUMBER OF BAD HOURS = 9

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM. 3/31/75

STABILITY CLASS C
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	1.	22.	49.	1.	0.	0.	0.	73.	4.3
NNE	1.	18.	51.	1.	0.	0.	0.	71.	4.5
NE	0.	9.	44.	1.	0.	0.	0.	54.	4.8
ENE	0.	15.	31.	0.	0.	0.	0.	46.	4.2
E	0.	12.	34.	0.	0.	0.	0.	46.	4.2
ESE	0.	16.	22.	0.	0.	0.	0.	38.	3.9
SE	0.	16.	19.	1.	0.	0.	0.	36.	3.9
SSE	0.	11.	23.	4.	0.	0.	0.	38.	4.7
S	0.	11.	33.	3.	0.	0.	0.	47.	4.9
SSW	0.	16.	63.	25.	0.	0.	0.	104.	5.9
SW	0.	10.	68.	57.	12.	2.	0.	149.	7.8
WSW	0.	13.	65.	28.	10.	0.	0.	116.	6.8
W	0.	7.	38.	17.	4.	0.	0.	66.	6.7
WNW	0.	9.	30.	35.	2.	0.	0.	76.	7.6
NW	0.	10.	32.	26.	2.	0.	0.	70.	6.9
NNW	0.	14.	42.	5.	1.	0.	0.	62.	5.0
TOTAL	2.	209.	644.	208.	31.	2.	0.	1092.	5.4

NUMBER OF CALMS = 2
NUMBER OF BAD HOURS = 22

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS D
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	11.	161.	172.	21.	0.	0.	0.	365.	4.0
NNE	12.	187.	255.	20.	0.	0.	0.	474.	4.1
NE	12.	192.	370.	24.	0.	0.	0.	598.	4.3
ENE	7.	104.	168.	21.	0.	0.	0.	300.	4.4
E	6.	85.	76.	7.	0.	0.	0.	174.	3.8
ESE	5.	78.	48.	3.	0.	0.	0.	134.	3.4
SE	6.	82.	79.	3.	0.	0.	0.	170.	3.6
SSE	7.	112.	117.	24.	3.	0.	0.	263.	4.2
S	8.	115.	127.	17.	2.	0.	0.	269.	4.2
SSW	9.	136.	217.	76.	11.	0.	0.	449.	5.3
SW	10.	160.	240.	124.	17.	3.	0.	554.	5.9
WSW	6.	92.	222.	92.	24.	1.	1.	438.	6.1
W	0.	66.	116.	61.	15.	1.	0.	259.	6.1
WNW	3.	75.	91.	75.	15.	0.	0.	259.	6.2
NW	7.	110.	116.	63.	4.	0.	0.	300.	5.2
NNW	8.	126.	143.	13.	0.	0.	0.	290.	4.0
TOTAL	117.	1881.	2557.	644.	91.	5.	1.	5296.	4.7

NUMBER OF CALMS = 117
NUMBER OF BAD HOURS = 152

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS E
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	34.	133.	53.	6.	0.	0.	0.	226.	3.0
NNE	44.	176.	61.	2.	0.	0.	0.	283.	2.7
NE	44.	174.	100.	2.	0.	0.	0.	320.	3.1
ENE	28.	112.	37.	5.	0.	0.	0.	182.	3.0
E	27.	107.	38.	5.	1.	0.	0.	178.	3.0
ESE	22.	85.	27.	2.	0.	0.	0.	136.	2.8
SE	31.	122.	38.	2.	0.	0.	0.	193.	2.7
SSE	32.	128.	68.	9.	1.	0.	0.	238.	3.4
S	47.	188.	78.	22.	0.	0.	0.	335.	3.3
SSW	64.	255.	208.	59.	2.	0.	0.	588.	4.1
SW	42.	165.	168.	53.	4.	0.	0.	432.	4.5
WSW	22.	88.	89.	45.	14.	0.	0.	258.	5.5
W	16.	63.	87.	23.	0.	0.	0.	189.	4.6
WNW	17.	65.	66.	16.	1.	0.	0.	165.	4.4
NW	9.	62.	80.	15.	2.	0.	0.	168.	4.8
NNW	28.	110.	92.	22.	2.	0.	0.	254.	4.1
TOTAL	507.	2033.	1290.	288.	27.	0.	0.	4145.	3.7

NUMBER OF CALMS = 507
NUMBER OF BAD HOURS = 148

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

STABILITY CLASS F
STABILITY-CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	49.	74.	4.	0.	0.	0.	0.	127.	1.9
NNE	53.	79.	2.	0.	0.	0.	0.	134.	1.8
NE	44.	66.	8.	0.	0.	0.	0.	118.	2.0
ENE	57.	85.	2.	0.	0.	0.	0.	144.	1.9
E	33.	49.	2.	0.	0.	0.	0.	84.	1.7
ESE	32.	47.	0.	0.	0.	0.	0.	79.	1.7
SE	32.	47.	0.	0.	0.	0.	0.	79.	1.7
SSE	49.	73.	3.	0.	0.	0.	0.	125.	1.7
S	56.	84.	9.	0.	0.	0.	0.	149.	2.0
SSW	90.	135.	28.	0.	0.	0.	0.	253.	2.3
SW	87.	130.	22.	0.	0.	0.	0.	239.	2.3
WSW	26.	38.	30.	1.	0.	0.	0.	95.	3.3
W	28.	41.	17.	0.	0.	0.	0.	86.	2.8
WNW	13.	34.	13.	0.	0.	0.	0.	60.	2.6
NW	24.	36.	10.	0.	0.	0.	0.	70.	2.5
NNW	35.	52.	12.	0.	0.	0.	0.	99.	2.2
TOTAL	708.	1070.	162.	1.	0.	0.	0.	1941.	2.1

NUMBER OF CALMS = 708
NUMBER OF BAD HOURS = 47

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/-1/73 TO 11:00 PM 3/31/75

STABILITY CLASS G
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	220.	57.	0.	0.	0.	0.	0.	277.	1.6
NNE	263.	68.	0.	0.	0.	0.	0.	331.	1.5
NE	294.	76.	0.	0.	0.	0.	0.	370.	1.5
ENE	302.	78.	1.	0.	0.	0.	0.	381.	1.5
E	217.	56.	0.	0.	0.	0.	0.	273.	1.4
ESE	82.	21.	0.	0.	0.	0.	0.	103.	1.2
SE	78.	20.	0.	0.	0.	0.	0.	98.	1.2
SSE	85.	22.	0.	0.	0.	0.	0.	107.	1.2
S	128.	33.	0.	0.	0.	0.	0.	161.	1.5
SSW	193.	50.	0.	0.	0.	0.	0.	243.	1.5
SW	197.	51.	0.	0.	0.	0.	0.	248.	1.5
WSW	128.	33.	2.	0.	0.	0.	0.	163.	1.7
W	101.	26.	2.	0.	0.	0.	0.	129.	1.5
WNW	82.	21.	1.	0.	0.	0.	0.	104.	1.9
NW	41.	13.	1.	0.	0.	0.	0.	55.	2.2
NNW	109.	28.	2.	0.	0.	0.	0.	139.	1.4
TOTAL	2520.	653.	9.	0.	0.	0.	0.	3182.	1.5

NUMBER OF CALMS = 2520
NUMBER OF BAD HOURS = 35

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 4/ 1/73 TO 11:00 PM 3/31/75

SUMMARY
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	316.	457.	358.	46.	0.	0.	0.	1177.	3.7
NNE	374.	540.	446.	32.	0.	0.	0.	1392.	3.6
NE	394.	526.	617.	38.	0.	0.	0.	1575.	3.8
ENE	395.	405.	283.	27.	0.	0.	0.	1110.	3.5
E	283.	316.	176.	12.	1.	0.	0.	788.	3.2
ESE	141.	253.	120.	5.	0.	0.	0.	519.	3.1
SE	147.	292.	160.	13.	0.	0.	0.	612.	3.2
SSE	174.	356.	238.	42.	4.	0.	0.	814.	3.6
S	239.	435.	278.	49.	2.	0.	0.	1003.	3.6
SSW	356.	596.	560.	199.	20.	0.	0.	1731.	4.6
SW	336.	520.	584.	315.	54.	5.	0.	1814.	5.5
WSW	182.	269.	496.	229.	68.	1.	1.	1246.	6.0
W	145.	207.	308.	136.	27.	1.	0.	824.	5.5
WNW	115.	208.	222.	172.	34.	0.	0.	751.	6.0
NW	81.	236.	282.	146.	11.	0.	0.	756.	5.3
NNW	180.	338.	344.	65.	3.	0.	0.	930.	4.2
TOTAL	3850.	5954.	5472.	1526.	224.	7.	1.	17042.	4.4

NUMBER OF CALMS = 3850
NUMBER OF BAD HOURS = 470

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS A
STABILITY CALCULATED FROM DIFF. TEMPERATURE 41-2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	1.	7.	14.	2.	0.	0.	24.	8.8
NNE	0.	1.	6.	6.	0.	0.	0.	13.	7.1
NE	0.	0.	2.	3.	0.	0.	0.	5.	8.6
ENE	0.	0.	2.	0.	0.	0.	0.	2.	5.8
E	0.	0.	1.	0.	0.	0.	0.	1.	4.9
ESE	0.	0.	1.	0.	0.	0.	0.	1.	5.0
SE	0.	0.	1.	0.	0.	0.	0.	1.	6.6
SSE	0.	0.	4.	0.	1.	0.	0.	5.	8.1
S	0.	2.	3.	2.	1.	0.	1.	9.	9.4
SSW	0.	1.	4.	14.	12.	2.	0.	33.	11.7
SW	0.	3.	14.	24.	30.	8.	2.	81.	12.6
WSW	0.	1.	7.	24.	12.	3.	1.	48.	11.7
W	0.	0.	4.	6.	5.	1.	0.	16.	10.5
WNW	0.	1.	4.	2.	12.	4.	0.	23.	13.7
NW	0.	1.	8.	6.	2.	1.	0.	18.	8.6
NNW	0.	2.	4.	9.	9.	0.	0.	24.	10.4
TOTAL	0.	13.	72.	110.	86.	19.	4.	304.	9.0

NUMBER OF CALMS = 0
NUMBER OF BAD HOURS = 12

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS B
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	1.	1.	4.	0.	0.	0.	6.	8.3
NNE	0.	0.	0.	1.	0.	0.	0.	1.	10.9
NE	0.	0.	1.	1.	0.	0.	0.	2.	6.5
ENE	0.	1.	1.	0.	0.	0.	0.	2.	3.8
E	0.	0.	2.	0.	0.	0.	0.	2.	5.0
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	2.	1.	0.	0.	0.	3.	7.2
SSE	0.	0.	1.	1.	0.	0.	0.	2.	7.7
S	0.	0.	1.	3.	3.	0.	0.	7.	12.2
SSW	0.	0.	2.	4.	3.	0.	0.	9.	10.4
SW	0.	0.	3.	9.	6.	1.	1.	20.	12.4
WSW	0.	1.	1.	5.	1.	0.	2.	10.	13.1
W	0.	0.	2.	0.	1.	0.	0.	3.	7.9
WNW	0.	0.	1.	0.	1.	0.	0.	2.	10.1
NW	0.	0.	3.	1.	3.	1.	0.	8.	10.9
NNW	0.	1.	1.	2.	1.	0.	0.	5.	9.3
TOTAL	0.	4.	22.	32.	19.	2.	3.	82.	9.0

NUMBER OF CALMS = 0
NUMBER OF BAD HOURS = 1

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS C
STABILITY CALCULATED FROM DIFF. TEMPERATURE E1-E2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	0.	2.	4.	1.	0.	0.	7.	9.2
NNE	0.	0.	2.	1.	0.	0.	0.	3.	7.0
NE	0.	0.	1.	1.	0.	0.	0.	2.	7.0
ENE	0.	0.	0.	1.	0.	0.	0.	1.	10.1
E	0.	0.	0.	0.	0.	0.	0.	0.	0.0
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	4.	1.	0.	0.	0.	5.	6.3
SSE	0.	0.	1.	0.	1.	0.	0.	2.	9.6
S	0.	1.	1.	2.	0.	1.	0.	5.	9.7
SSW	0.	0.	3.	3.	1.	0.	1.	8.	11.3
SW	0.	0.	2.	2.	3.	3.	0.	10.	14.3
WSW	0.	1.	2.	5.	4.	1.	1.	14.	11.8
W	0.	1.	2.	1.	1.	1.	0.	6.	9.7
WNW	0.	0.	1.	0.	3.	0.	0.	4.	13.9
NW	0.	0.	1.	0.	1.	0.	0.	2.	10.6
NNW	0.	0.	1.	3.	1.	0.	0.	5.	9.4
TOTAL	0.	3.	23.	24.	16.	6.	2.	74.	10.0

NUMBER OF CALMS = 0
NUMBER OF BAD HOURS = 0

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS 0
STABILITY CALCULATED FROM DIFF. TEMPERATURE 71+2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
	SPEED CLASS(MPH)								
N	0.	1.	4.	12.	16.	1.	0.	34.	12.2
NNE	0.	2.	2.	12.	6.	2.	0.	24.	10.6
NE	0.	2.	1.	1.	0.	0.	0.	4.	5.3
ENE	1.	4.	4.	6.	0.	0.	0.	15.	6.4
E	0.	1.	11.	3.	0.	0.	0.	15.	6.5
ESE	1.	4.	13.	3.	0.	0.	0.	21.	5.2
SE	0.	3.	8.	5.	0.	0.	0.	16.	6.6
SSE	0.	2.	12.	6.	8.	0.	0.	28.	8.5
S	0.	1.	5.	6.	6.	0.	0.	18.	10.1
SSW	0.	2.	6.	10.	12.	11.	0.	41.	13.8
SW	0.	2.	11.	13.	14.	5.	0.	45.	11.7
WSW	0.	0.	5.	10.	7.	1.	4.	27.	13.9
W	0.	0.	1.	3.	4.	2.	1.	11.	14.9
WNW	0.	0.	5.	7.	2.	0.	0.	14.	9.7
NW	0.	1.	2.	9.	8.	1.	1.	22.	12.8
NNW	0.	1.	4.	9.	4.	2.	0.	20.	10.7
TOTAL	2.	26.	94.	115.	87.	25.	6.	355.	9.9

NUMBER OF CALMS = 2
NUMBER OF BAD HOURS = 20

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS E
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	0.	5.	14.	8.	0.	0.	27.	10.4
NNE	0.	1.	2.	4.	1.	0.	0.	8.	8.6
NE	0.	0.	2.	5.	0.	0.	0.	7.	7.9
ENE	0.	0.	1.	3.	1.	0.	0.	5.	9.4
E	0.	0.	2.	2.	1.	0.	0.	5.	7.7
ESE	0.	0.	4.	9.	1.	0.	0.	14.	8.9
SE	0.	0.	3.	15.	1.	0.	0.	19.	9.4
SSE	0.	0.	6.	22.	3.	0.	0.	31.	10.0
S	0.	1.	8.	31.	20.	1.	0.	61.	10.7
SSW	0.	1.	6.	47.	56.	5.	0.	115.	12.5
SW	1.	3.	4.	20.	30.	4.	0.	68.	12.0
WSW	0.	0.	2.	13.	8.	0.	0.	23.	11.4
W	0.	1.	2.	5.	3.	0.	0.	11.	10.1
WNW	0.	0.	4.	9.	10.	1.	0.	24.	11.0
NW	0.	0.	3.	22.	8.	1.	1.	35.	11.1
NNW	0.	1.	7.	13.	3.	2.	0.	26.	9.6
TOTAL	1.	8.	61.	234.	160.	14.	1.	479.	10.1

NUMBER OF CALMS = 1
NUMBER OF BAD HOURS = 13

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS F
STABILITY CALCULATED FROM DIFF. TEMPERATURE E1-E2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
	SPEED CLASS(MPH)								
N	0.	1.	4.	7.	4.	0.	0.	16.	9.8
NNE	0.	0.	3.	4.	0.	0.	0.	7.	7.0
NE	0.	1.	2.	2.	0.	0.	0.	5.	6.5
ENE	0.	0.	0.	2.	1.	0.	0.	3.	11.7
E	0.	0.	0.	2.	0.	0.	0.	2.	8.4
ESE	0.	0.	2.	1.	1.	0.	0.	4.	7.8
SE	0.	0.	0.	8.	0.	0.	0.	8.	9.8
SSE	0.	0.	2.	3.	1.	0.	0.	6.	8.9
S	0.	1.	3.	12.	3.	0.	0.	19.	9.6
SSW	0.	1.	8.	50.	16.	0.	0.	75.	10.4
SW	0.	1.	3.	27.	5.	0.	0.	36.	9.8
WSW	2.	3.	2.	5.	0.	0.	0.	12.	7.3
W	0.	0.	4.	4.	4.	0.	0.	12.	9.3
WNW	1.	1.	4.	10.	0.	0.	0.	16.	8.9
NW	1.	1.	2.	7.	2.	0.	0.	13.	9.4
NNW	0.	0.	3.	8.	2.	0.	0.	13.	9.7
TOTAL	4.	10.	42.	152.	39.	0.	0.	247.	9.1

NUMBER OF CALMS = 4
NUMBER OF BAD HOURS = 3

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS G
STABILITY CALCULATED FROM DIFF. TEMPERATURE #142

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	0.	6.	9.	1.	0.	0.	16.	8.0
NNE	1.	5.	8.	6.	0.	0.	0.	20.	6.1
NE	0.	1.	6.	3.	0.	0.	0.	10.	6.4
ENE	0.	2.	6.	2.	0.	0.	0.	12.	6.2
E	0.	1.	4.	3.	0.	0.	0.	8.	6.3
ESE	1.	3.	4.	5.	1.	0.	0.	13.	7.5
SE	1.	3.	1.	5.	1.	0.	0.	11.	7.6
SSE	0.	2.	6.	8.	0.	0.	0.	16.	6.9
S	0.	1.	12.	13.	8.	0.	0.	34.	9.2
SSW	0.	2.	16.	43.	8.	0.	0.	69.	9.5
SW	0.	2.	9.	27.	0.	0.	0.	38.	6.4
WSW	1.	4.	12.	28.	7.	0.	0.	52.	8.8
W	0.	2.	3.	10.	1.	0.	0.	16.	7.7
WNW	1.	2.	12.	6.	1.	0.	0.	22.	6.6
NW	1.	5.	8.	8.	0.	0.	0.	22.	5.7
NNW	1.	4.	2.	7.	0.	0.	0.	14.	6.5
TOTAL	7.	39.	116.	183.	28.	0.	0.	373.	7.4

NUMBER OF CALMS = 7
NUMBER OF BAD HOURS = 5

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 1200 AM 1/15/76 TO 1100 PM 4/ 6/76

SUMMARY
STABILITY CALCULATED FROM DIFF. TEMPERATURE 81+2

HARRIS ON-SITE METEOROLOGICAL FACILITY

UPPER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	4.	29.	64.	32.	1.	0.	130.	10.0
NNE	1.	9.	23.	34.	7.	2.	0.	76.	8.2
NE	0.	4.	15.	16.	0.	0.	0.	35.	6.9
ENE	1.	7.	16.	14.	2.	0.	0.	40.	7.0
E	0.	2.	20.	10.	1.	0.	0.	33.	6.6
ESE	2.	7.	23.	18.	3.	0.	0.	53.	7.6
SE	1.	6.	19.	35.	2.	0.	0.	63.	8.1
SSE	0.	4.	32.	40.	14.	0.	0.	90.	8.7
S	0.	7.	33.	69.	41.	2.	1.	153.	10.1
SSW	0.	7.	85.	171.	108.	18.	1.	350.	11.5
SW	1.	11.	46.	122.	94.	21.	3.	298.	11.7
WSW	3.	10.	31.	90.	39.	5.	8.	186.	11.0
W	0.	4.	18.	29.	19.	4.	1.	75.	10.1
WNW	2.	4.	31.	34.	29.	5.	0.	105.	10.5
NW	2.	8.	27.	53.	24.	4.	2.	120.	9.9
NNW	1.	9.	22.	51.	20.	4.	0.	107.	9.6
TOTAL	14.	105.	430.	850.	435.	66.	16.	1914.	10.2

NUMBER OF CALMS = 14
NUMBER OF BAD HOURS = 54

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS A
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	1.	11.	15.	0.	0.	0.	27.	7.0
NNE	0.	0.	10.	3.	0.	0.	0.	13.	7.0
NE	0.	0.	1.	2.	0.	0.	0.	3.	7.4
ENE	0.	0.	2.	0.	0.	0.	0.	2.	4.5
E	0.	0.	1.	0.	0.	0.	0.	1.	5.6
ESE	0.	0.	2.	0.	0.	0.	0.	2.	5.8
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSE	0.	0.	4.	1.	1.	0.	0.	6.	7.7
S	0.	0.	3.	1.	2.	0.	0.	5.	10.1
SSW	0.	1.	11.	27.	2.	0.	0.	41.	8.9
SW	0.	1.	12.	41.	16.	0.	0.	70.	9.9
WSW	0.	2.	15.	23.	4.	0.	0.	44.	8.3
W	0.	0.	3.	13.	1.	0.	0.	17.	9.0
WNW	0.	0.	8.	15.	9.	0.	0.	32.	10.5
NW	0.	0.	19.	6.	1.	0.	0.	26.	6.7
NNW	0.	1.	12.	9.	2.	0.	0.	24.	7.9
TOTAL	0.	6.	114.	156.	38.	0.	0.	314.	7.8

NUMBER OF CALMS = 0
NUMBER OF BAD HOURS = 2

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS 6
STABILITY CALCULATED FROM DIFF. TEMPERATURE 81+2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	0.	6.	2.	0.	0.	0.	8.	6.0
NNE	0.	1.	2.	0.	0.	0.	0.	3.	4.9
NE	0.	0.	2.	0.	0.	0.	0.	2.	6.4
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.0
E	0.	0.	1.	0.	0.	0.	0.	1.	3.8
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	2.	1.	0.	0.	0.	3.	7.3
SSE	0.	0.	0.	0.	0.	0.	0.	0.	0.0
S	0.	0.	2.	4.	1.	0.	0.	7.	9.3
SSW	0.	0.	2.	6.	0.	0.	0.	8.	8.3
SW	0.	0.	9.	7.	4.	2.	0.	22.	10.0
WSW	0.	2.	5.	3.	0.	0.	0.	10.	6.4
W	0.	0.	2.	2.	0.	0.	0.	4.	7.5
WNW	0.	0.	1.	1.	1.	0.	0.	3.	10.5
NW	0.	0.	2.	4.	0.	0.	0.	6.	8.7
NNW	0.	0.	3.	2.	1.	0.	0.	6.	7.4
TOTAL	0.	3.	39.	32.	7.	2.	0.	83.	7.5

NUMBER OF CALMS = 0
NUMBER OF BAD HOURS = 0

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS C
STABILITY CALCULATED FROM DIFF. TEMPERATURE 81+2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	0.	3.	2.	0.	0.	0.	5.	7.3
NNE	0.	0.	3.	0.	0.	0.	0.	3.	6.4
NE	0.	0.	2.	0.	0.	0.	0.	2.	5.5
ENE	0.	0.	0.	2.	0.	0.	0.	2.	8.0
E	0.	0.	1.	0.	0.	0.	0.	1.	4.6
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	2.	2.	0.	0.	0.	4.	7.4
SSE	0.	0.	1.	1.	0.	0.	0.	2.	6.0
S	0.	1.	1.	1.	1.	0.	0.	4.	7.4
SSW	0.	1.	4.	3.	2.	0.	0.	10.	8.7
SW	0.	0.	6.	4.	2.	0.	0.	12.	8.4
WSW	0.	0.	4.	3.	1.	1.	0.	9.	9.1
W	0.	0.	3.	4.	1.	0.	0.	8.	9.1
WNW	0.	0.	1.	0.	1.	0.	0.	2.	10.1
NW	0.	0.	1.	3.	0.	0.	0.	4.	9.4
NNW	0.	0.	4.	2.	0.	0.	0.	6.	6.4
TOTAL	0.	2.	36.	27.	8.	1.	0.	74.	7.6

NUMBER OF CALMS = 0
NUMBER OF BAD HOURS = 0

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS D
STABILITY CALCULATED FROM DIFF. TEMPERATURE A1-2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	4.	20.	21.	2.	0.	0.	47.	7.5
NNE	0.	2.	9.	3.	0.	0.	0.	14.	6.5
NE	0.	4.	2.	5.	1.	0.	0.	12.	6.5
ENE	0.	3.	13.	1.	0.	0.	0.	17.	5.0
E	0.	3.	6.	0.	0.	0.	0.	11.	3.9
ESE	0.	3.	17.	0.	0.	0.	0.	20.	4.6
SE	0.	3.	14.	0.	0.	0.	0.	17.	5.0
SSE	0.	2.	10.	6.	0.	0.	0.	18.	6.4
S	0.	3.	9.	10.	1.	0.	0.	23.	7.3
SSW	1.	6.	22.	22.	8.	0.	0.	59.	7.8
SW	0.	3.	18.	11.	3.	1.	0.	36.	7.8
WSW	0.	1.	9.	9.	1.	3.	0.	23.	9.1
W	0.	3.	2.	7.	1.	0.	0.	13.	7.8
WNW	0.	1.	9.	8.	1.	0.	0.	19.	7.3
NW	0.	0.	4.	16.	4.	0.	0.	24.	10.2
NNW	0.	2.	9.	6.	3.	0.	0.	22.	7.9
TOTAL	1.	43.	175.	127.	25.	4.	0.	375.	6.9

NUMBER OF CALMS = 1
NUMBER OF BAD HOURS = 0

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS E
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	8.	14.	7.	0.	0.	0.	29.	5.0
NNE	0.	4.	4.	1.	0.	0.	0.	9.	4.4
NE	0.	4.	7.	0.	0.	0.	0.	11.	4.2
ENE	0.	3.	1.	0.	0.	0.	0.	4.	2.5
E	0.	2.	5.	0.	0.	0.	0.	7.	3.9
ESE	0.	3.	8.	0.	0.	0.	0.	11.	4.8
SE	0.	4.	16.	1.	0.	0.	0.	21.	5.1
SSE	0.	9.	25.	3.	0.	0.	0.	37.	4.9
S	1.	18.	42.	16.	1.	0.	0.	78.	5.0
SSW	1.	15.	64.	21.	1.	0.	0.	102.	6.0
SW	0.	8.	26.	22.	0.	0.	0.	56.	6.5
WSW	0.	4.	13.	12.	0.	0.	0.	29.	6.7
W	0.	3.	5.	3.	0.	0.	0.	11.	6.1
WNW	0.	6.	11.	5.	0.	1.	0.	23.	6.0
NW	0.	3.	17.	6.	3.	0.	0.	29.	6.9
NNW	0.	11.	19.	4.	1.	0.	0.	35.	5.1
TOTAL	2.	105.	277.	101.	6.	1.	0.	492.	5.3

NUMBER OF CALMS = 2
NUMBER OF BAD HOURS = 0

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 1200 A...1/15/76 TO 11:00 PM ../../76

STABILITY CLASS F
STABILITY CALCULATED FROM DIFF. TEMPERATURE 71-2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	SPEED CLASS(MPH) CALM	0.75- 3.5	3.5- 7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	0.	5.	5.	2.	0.	0.	0.	12.	4.2
NNE	1.	12.	1.	0.	0.	0.	0.	14.	2.2
NE	0.	4.	1.	0.	0.	0.	0.	5.	2.4
ENE	0.	1.	2.	0.	0.	0.	0.	3.	4.0
E	0.	5.	1.	0.	0.	0.	0.	6.	2.6
ESE	0.	8.	2.	0.	0.	0.	0.	10.	2.9
SE	0.	5.	4.	0.	0.	0.	0.	9.	3.4
SSE	1.	21.	3.	0.	0.	0.	0.	25.	2.5
S	2.	33.	14.	0.	0.	0.	0.	49.	2.9
SSW	1.	19.	22.	0.	0.	0.	0.	42.	3.5
SW	1.	14.	4.	0.	0.	0.	0.	19.	2.5
WSW	0.	6.	2.	0.	0.	0.	0.	8.	2.8
W	0.	6.	4.	0.	0.	0.	0.	10.	3.5
WNW	0.	10.	1.	0.	0.	0.	0.	11.	2.7
NW	0.	6.	5.	0.	0.	0.	0.	11.	3.6
NNW	1.	10.	4.	1.	0.	0.	0.	16.	3.7
TOTAL	7.	165.	75.	3.	0.	0.	0.	250.	3.1

NUMBER OF CALMS = 7
NUMBER OF BAD HOURS = 0

JOINT OCCURRENCE FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/76 TO 11:00 PM 4/ 6/76

STABILITY CLASS G
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	11.	22.	1.	0.	0.	0.	0.	34.	1.8
NNE	5.	10.	0.	0.	0.	0.	0.	15.	1.5
NE	5.	10.	0.	0.	0.	0.	0.	15.	1.5
ENE	7.	14.	1.	0.	0.	0.	0.	22.	1.9
E	10.	19.	0.	0.	0.	0.	0.	29.	1.5
ESE	8.	16.	0.	0.	0.	0.	0.	24.	1.6
SE	10.	19.	1.	0.	0.	0.	0.	30.	1.8
SSE	7.	14.	2.	0.	0.	0.	0.	23.	2.2
S	12.	25.	1.	0.	0.	0.	0.	38.	1.6
SSW	11.	22.	0.	0.	0.	0.	0.	33.	1.5
SW	12.	23.	3.	0.	0.	0.	0.	38.	1.9
WSW	7.	14.	4.	0.	0.	0.	0.	25.	2.1
W	1.	9.	0.	0.	0.	0.	0.	10.	1.4
WNW	0.	7.	0.	0.	0.	0.	0.	7.	1.6
NW	6.	11.	1.	0.	0.	0.	0.	18.	1.7
NNW	6.	11.	0.	0.	0.	0.	0.	17.	1.5
TOTAL	118.	246.	14.	0.	0.	0.	0.	378.	1.7

NUMBER OF CALMS = 118
NUMBER OF BAD HOURS = 0

JOINT OCCURRENCE-FREQUENCIES OF WIND DIRECTION AND SPEED
FOR THE PERIOD 12:00 AM 1/15/75 TO 11:00 PM 8/ 6/76

SUMMARY
STABILITY CALCULATED FROM DIFF. TEMPERATURE #1-#2

HARRIS ON-SITE METEOROLOGICAL FACILITY

LOWER WIND DIRECTION	CALM	SPEED CLASS(MPH) 0.75-3.5	3.5-7.5	7.5-12.5	12.5-18.5	18.5-25.0	GREATER THAN 25.0	TOTAL	AVG. WIND SPEED
N	11.	40.	60.	49.	2.	0.	0.	162.	6.0
NNE	6.	29.	29.	7.	0.	0.	0.	71.	4.6
NE	5.	22.	15.	7.	1.	0.	0.	50.	4.4
ENE	7.	21.	19.	3.	0.	0.	0.	50.	3.7
E	10.	29.	17.	0.	0.	0.	0.	56.	2.8
ESE	8.	30.	29.	0.	0.	0.	0.	67.	3.6
SE	10.	31.	39.	4.	0.	0.	0.	84.	4.2
SSE	8.	46.	45.	11.	1.	0.	0.	111.	4.4
S	15.	80.	72.	32.	6.	0.	0.	205.	4.9
SSW	14.	64.	125.	79.	13.	0.	0.	295.	6.3
SW	13.	49.	76.	85.	25.	3.	0.	253.	7.3
WSW	7.	29.	52.	50.	6.	4.	0.	148.	6.9
W	1.	21.	19.	29.	3.	0.	0.	73.	6.5
WNW	0.	24.	31.	29.	12.	1.	0.	97.	7.2
NW	6.	20.	49.	35.	6.	0.	0.	118.	6.9
NNW	7.	35.	51.	26.	7.	0.	0.	126.	5.8
TOTAL	128.	570.	730.	446.	84.	8.	0.	1960.	5.8

NUMBER OF CALMS = 128
NUMBER OF BAD HOURS = 2

ANNUAL FREQUENCY DISTRIBUTION STATION #RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	AVG SPD	TOTAL
N	9	31	0	0	0	0	4.0	40
NNE	8	17	0	0	0	0	4.1	25
NE	4	13	0	0	0	0	4.2	17
ENE	2	15	0	0	0	0	4.5	17
E	1	27	0	0	0	0	4.5	28
ESE	3	12	0	0	0	0	4.4	15
SE	4	11	0	0	0	0	4.1	15
SSE	1	13	0	0	0	0	4.5	14
S	4	23	0	0	0	0	4.3	27
SSW	3	25	0	0	0	0	4.4	28
SW	13	38	0	0	0	0	4.3	51
WSW	3	39	0	0	0	0	4.4	42
W	10	35	0	0	0	0	4.3	45
WNW	9	23	0	0	0	0	4.2	32
NW	5	18	0	0	0	0	4.3	23
NNW	5	27	0	0	0	0	4.4	32
AVG	2.9	4.6	0.0	0.0	0.0	0.0	1.9	
TOTAL	64	367	0	0	0	0		

NUMBER OF OCCURRENCES OF A STABILITY = 1031

NUMBER OF CALMS WITH A STABILITY = 560

ANNUAL RELATIVE FREQUENCY DISTRIBUTION STATION =RALEIGH,N.C. 53764

SPEED(KTS)

DIRECTION	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	TOTAL
N	0.000590	0.000354	0.000000	0.000000	0.000000	0.000000	0.001044
NNE	0.000458	0.000194	0.000000	0.000000	0.000000	0.000000	0.000652
NE	0.000295	0.000148	0.000000	0.000000	0.000000	0.000000	0.000444
ENE	0.000272	0.000171	0.000000	0.000000	0.000000	0.000000	0.000444
E	0.000423	0.000308	0.000000	0.000000	0.000000	0.000000	0.000731
ESE	0.000254	0.000137	0.000000	0.000000	0.000000	0.000000	0.000391
SE	0.000266	0.000126	0.000000	0.000000	0.000000	0.000000	0.000391
SSE	0.000217	0.000148	0.000000	0.000000	0.000000	0.000000	0.000365
S	0.000440	0.000262	0.000000	0.000000	0.000000	0.000000	0.000705
SSW	0.000445	0.000285	0.000000	0.000000	0.000000	0.000000	0.000731
SW	0.000897	0.000434	0.000000	0.000000	0.000000	0.000000	0.001331
WSW	0.000651	0.000445	0.000000	0.000000	0.000000	0.000000	0.001096
W	0.000775	0.000400	0.000000	0.000000	0.000000	0.000000	0.001174
WNW	0.000573	0.000263	0.000000	0.000000	0.000000	0.000000	0.000835
NW	0.000395	0.000205	0.000000	0.000000	0.000000	0.000000	0.000600
NNW	0.000527	0.000308	0.000000	0.000000	0.000000	0.000000	0.000835
TOTAL	0.007581	0.004190	0.000000	0.000000	0.000000	0.000000	

RELATIVE FREQUENCY OF OCCURRENCE OF A STABILITY = 0.011770

RELATIVE FREQUENCY OF CALMS DISTRIBUTED ABOVE WITH A STABILITY = 0.006622

ANNUAL FREQUENCY DISTRIBUTION STATION - RALEIGH, N.C. 55-64

SPEED(KTS)

DIRECTION	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	AVG SPD	TOTAL
N	46	156	105	0	0	0	5.5	309
NNE	34	102	91	0	0	0	5.7	227
NE	43	122	95	0	0	0	5.7	260
ENE	18	78	53	0	0	0	5.7	149
E	20	87	73	0	0	0	5.8	180
ESE	19	69	54	0	0	0	5.8	142
SE	18	85	55	0	0	0	5.7	158
SSE	22	73	51	0	0	0	5.8	146
S	34	157	152	0	0	0	6.0	343
SSW	62	137	127	0	0	0	5.7	326
SW	73	240	214	0	0	0	5.9	527
WSW	54	180	153	0	0	0	5.8	387
W	52	190	189	0	0	0	5.8	441
WNW	62	147	115	0	0	0	5.6	324
NW	38	120	80	0	0	0	5.6	238
NNW	37	98	86	0	0	0	5.7	221
AVG	2.8	5.3	7.5	0.0	0.0	0.0	4.9	
TOTAL	644	2041	1693	0	0	0		

NUMBER OF OCCURRENCES OF B STABILITY = 5181

NUMBER OF CALMS WITH B STABILITY = 803

ANNUAL RELATIVE FREQUENCY DISTRIBUTION STATION =RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	TOTAL
N	0.001245	0.001781	0.001199	0.000000	0.000000	0.000000	0.004224
NNE	0.000853	0.001164	0.001039	0.000000	0.000000	0.000000	0.003056
NE	0.001054	0.001393	0.001085	0.000000	0.000000	0.000000	0.003532
ENE	0.000533	0.000890	0.000605	0.000000	0.000000	0.000000	0.002029
E	0.000594	0.000993	0.000833	0.000000	0.000000	0.000000	0.002420
ESE	0.000517	0.000786	0.000616	0.000000	0.000000	0.000000	0.001922
SE	0.000557	0.000979	0.000623	0.000000	0.000000	0.000000	0.002155
SSE	0.000576	0.000833	0.000582	0.000000	0.000000	0.000000	0.001991
S	0.001040	0.001792	0.001735	0.000000	0.000000	0.000000	0.004568
SSW	0.001337	0.001564	0.001450	0.000000	0.000000	0.000000	0.004401
SW	0.001992	0.002740	0.002445	0.000000	0.000000	0.000000	0.007085
WSW	0.001415	0.002035	0.001747	0.000000	0.000000	0.000000	0.005217
W	0.001563	0.002169	0.002158	0.000000	0.000000	0.000000	0.005895
WNW	0.001421	0.001678	0.001313	0.000000	0.000000	0.000000	0.004413
NW	0.000973	0.001370	0.000913	0.000000	0.000000	0.000000	0.003257
NNW	0.000583	0.001119	0.000932	0.000000	0.000000	0.000000	0.002984
TOTAL	0.015520	0.023501	0.019323	0.000000	0.000000	0.000000	

RELATIVE FREQUENCY OF OCCURRENCE OF B STABILITY = 0.059149

RELATIVE FREQUENCY OF CALMS DISTRIBUTED ABOVE WITH B STABILITY = 0.009168

ANNUAL FREQUENCY DISTRIBUTION STATION -RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	AVG SPD	TOTAL
N	25	229	548	90	5	1	7.9	898
NNE	13	126	379	61	1	1	8.1	581
NE	7	137	443	80	5	0	8.2	672
ENE	12	109	256	38	0	0	7.7	415
E	10	112	267	44	2	0	7.7	435
ESE	11	88	150	8	0	0	7.1	257
SE	6	104	177	13	0	0	7.2	300
SSE	9	95	184	23	0	0	7.4	311
S	9	210	540	63	3	0	7.7	825
SSW	20	292	575	101	3	0	7.7	991
SW	33	421	811	118	1	0	7.5	1384
WSW	29	261	465	59	1	0	7.3	835
W	18	256	480	80	2	0	7.7	854
WNW	16	194	380	65	4	0	7.7	659
NW	15	160	371	77	2	0	7.9	625
NNW	18	151	310	56	1	0	7.7	536
AVG	2.8	5.2	3.4	11.9	17.8	22.0	7.3	
TOTAL	251	2965	6346	984	30	2		

NUMBER OF OCCURRENCES OF C STABILITY = 11199

NUMBER OF CALMS WITH C STABILITY = 611

ANNUAL RELATIVE FREQUENCY DISTRIBUTION STATION «RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	TOTAL
N	0.000836	0.002614	0.006256	0.001027	0.000057	0.000011	0.010503
NNE	0.000450	0.001438	0.004327	0.000696	0.000011	0.000011	0.006935
NE	0.000392	0.001564	0.005055	0.000513	0.000057	0.000000	0.007584
ENE	0.000399	0.001244	0.002923	0.000434	0.000000	0.000000	0.005000
E	0.000379	0.001279	0.003048	0.000502	0.000023	0.000000	0.005231
ESE	0.000340	0.001005	0.001712	0.000091	0.000000	0.000000	0.003149
SE	0.000307	0.001137	0.002021	0.000148	0.000000	0.000000	0.003664
SSE	0.000328	0.001085	0.002101	0.000263	0.000000	0.000000	0.003776
S	0.000578	0.002397	0.006165	0.000719	0.000034	0.000000	0.009894
SSW	0.000905	0.003334	0.006565	0.001153	0.000034	0.000000	0.011991
SW	0.001361	0.004806	0.009259	0.001347	0.000011	0.000000	0.016785
WSW	0.001003	0.003208	0.005309	0.000674	0.000011	0.000000	0.010203
W	0.000800	0.002923	0.005594	0.001005	0.000023	0.000000	0.010344
WNW	0.000633	0.002215	0.004338	0.000742	0.000046	0.000000	0.007979
NW	0.000551	0.001827	0.004236	0.000879	0.000023	0.000000	0.007515
NNW	0.000572	0.001724	0.003635	0.000639	0.000011	0.000000	0.006486
TOTAL	0.009641	0.033050	0.072449	0.011234	0.000542	0.000023	

RELATIVE FREQUENCY OF OCCURRENCE OF C STABILITY = 0.127740

RELATIVE FREQUENCY OF CALMS DISTRIBUTED ABOVE WITH C STABILITY = 0.005976

ANNUAL FREQUENCY DISTRIBUTION STATION - RALEIGH, N.C. 55-64

SPEED(KTS)

DIRECTION	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	AVG SPD	TOTAL
N	52	529	1582	1289	153	28	10.0	3643
NNE	41	465	1417	1254	181	25	10.3	3383
NE	48	533	1460	1014	81	7	9.5	3143
ENE	41	442	939	525	22	4	8.8	1973
E	28	428	936	342	30	6	8.4	1770
ESE	31	335	621	226	24	6	8.3	1243
SE	20	310	754	226	27	3	8.4	1340
SSE	40	316	667	324	33	2	8.7	1382
S	38	620	1679	980	101	8	9.2	3426
SSW	45	584	1721	1186	125	15	9.6	3676
SW	41	574	1376	971	111	14	9.5	3087
WSW	48	355	476	361	37	7	8.9	1284
W	43	375	485	720	136	11	10.3	1770
WNW	41	274	476	1085	266	19	11.5	2053
NW	31	275	612	1009	201	22	11.3	2150
NNW	29	313	791	821	117	20	10.4	2091
AVG	2.8	5.1	8.4	12.9	18.2	24.0	9.3	
TOTAL	617	6728	16002	12203	1567	197		

NUMBER OF OCCURRENCES OF D STABILITY = 38961

NUMBER OF CALMS WITH D STABILITY = 1547

ANNUAL RELATIVE FREQUENCY DISTRIBUTION STATION =RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	TOTAL
N	0.001991	0.006069	0.018175	0.014716	0.001747	0.000320	0.042938
NNE	0.001685	0.005309	0.016177	0.014916	0.002066	0.000285	0.039839
NE	0.001945	0.006055	0.016668	0.011376	0.000925	0.000060	0.037279
ENE	0.001629	0.005046	0.010720	0.005694	0.000251	0.000046	0.023686
E	0.001416	0.004886	0.010686	0.003804	0.000342	0.000058	0.021304
ESE	0.001234	0.003825	0.007099	0.002580	0.000274	0.000060	0.015071
SE	0.001022	0.003539	0.008608	0.002580	0.000308	0.000034	0.016092
SSE	0.001313	0.003608	0.007615	0.003699	0.000377	0.000023	0.016634
S	0.002016	0.007078	0.019168	0.011188	0.001153	0.000091	0.040695
SSW	0.002026	0.006667	0.019648	0.013540	0.001427	0.000171	0.043480
SW	0.001947	0.006553	0.015709	0.011085	0.001267	0.000160	0.036722
WSW	0.001517	0.004053	0.005434	0.004121	0.000422	0.000080	0.015628
W	0.001496	0.004281	0.005537	0.008220	0.001553	0.000126	0.021212
WNW	0.001226	0.003128	0.005434	0.011616	0.002375	0.000217	0.024196
NW	0.001090	0.003140	0.006907	0.011519	0.002295	0.000231	0.025281
NNW	0.001153	0.003573	0.008031	0.009578	0.001336	0.000228	0.024694
TOTAL	0.024705	0.078611	0.182688	0.140230	0.018118	0.002249	

RELATIVE FREQUENCY OF OCCURRENCE OF D STABILITY = 0.444801

RELATIVE FREQUENCY OF CALMS DISTRIBUTED ABOVE WITH D STABILITY = 0.017661

ANNUAL FREQUENCY DISTRIBUTION STATION = RALEIGH, N.C. 55-64

SPEED(KTS)

DIRECTION	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	AVG SPD	TOTAL
N	0	345	602	0	0	0	6.9	947
NNE	0	286	294	0	0	0	6.6	580
NE	0	326	291	0	0	0	6.5	617
ENE	0	261	203	0	0	0	6.4	464
E	0	364	405	0	0	0	6.5	769
ESE	0	265	242	0	0	0	6.3	507
SE	0	293	205	0	0	0	6.2	498
SSE	0	290	294	0	0	0	6.5	584
S	0	759	871	0	0	0	6.6	1630
SSW	0	717	846	0	0	0	6.6	1563
SW	0	581	521	0	0	0	6.4	1102
WSW	0	219	166	0	0	0	6.1	385
W	0	208	385	0	0	0	7.0	593
WNW	0	157	436	0	0	0	7.4	593
NW	0	166	431	0	0	0	7.4	599
NNW	0	175	444	0	0	0	7.3	619
AVG	0.0	5.0	6.0	0.0	0.0	0.0	6.7	
TOTAL	0	5414	6636	0	0	0		

NUMBER OF OCCURRENCES OF E STABILITY = 12050

NUMBER OF CALMS WITH E STABILITY = 0

ANNUAL RELATIVE FREQUENCY DISTRIBUTION STATION *RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	TOTAL
N	0.000000	0.003939	0.006873	0.000000	0.000000	0.000000	0.010811
NNE	0.000000	0.003265	0.003336	0.000000	0.000000	0.000000	0.006622
NE	0.000000	0.003722	0.003322	0.000000	0.000000	0.000000	0.007044
ENE	0.000000	0.002980	0.002318	0.000000	0.000000	0.000000	0.005297
E	0.000000	0.004156	0.004624	0.000000	0.000000	0.000000	0.008779
ESE	0.000000	0.003025	0.002763	0.000000	0.000000	0.000000	0.005788
SE	0.000000	0.003345	0.002340	0.000000	0.000000	0.000000	0.005685
SSE	0.000000	0.003311	0.003356	0.000000	0.000000	0.000000	0.006667
S	0.000000	0.008665	0.009944	0.000000	0.000000	0.000000	0.018609
SSW	0.000000	0.008186	0.009658	0.000000	0.000000	0.000000	0.017844
SW	0.000000	0.006638	0.005943	0.000000	0.000000	0.000000	0.012581
WSW	0.000000	0.002500	0.001895	0.000000	0.000000	0.000000	0.004395
W	0.000000	0.002375	0.004395	0.000000	0.000000	0.000000	0.006770
WNW	0.000000	0.001792	0.004978	0.000000	0.000000	0.000000	0.006770
NW	0.000000	0.001918	0.004921	0.000000	0.000000	0.000000	0.006839
NNW	0.000000	0.001998	0.005069	0.000000	0.000000	0.000000	0.007067
TOTAL	0.000000	0.061509	0.075760	0.000000	0.000000	0.000000	

RELATIVE FREQUENCY OF OCCURRENCE OF E STABILITY = 0.137570

RELATIVE FREQUENCY OF CALMS DISTRIBUTED ABOVE WITH E STABILITY = 0.000000

ANNUAL FREQUENCY DISTRIBUTION STATION RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	AVG SPD	TOTAL
N	163	826	0	0	0	0	4.7	989
NNE	154	490	0	0	0	0	4.4	644
NE	98	450	0	0	0	0	4.6	548
ENE	112	384	0	0	0	0	4.5	496
E	99	530	0	0	0	0	4.8	629
ESE	127	435	0	0	0	0	4.5	562
SE	108	329	0	0	0	0	4.4	437
SSE	96	415	0	0	0	0	4.6	511
S	201	1062	0	0	0	0	4.8	1263
SSW	271	1323	0	0	0	0	4.8	1596
SW	242	1077	0	0	0	0	4.6	1319
WSW	187	450	0	0	0	0	4.2	637
W	145	504	0	0	0	0	4.5	649
WNW	114	391	0	0	0	0	4.5	505
NW	84	397	0	0	0	0	4.7	481
NNW	95	418	0	0	0	0	4.7	513
AVG	2.8	5.0	0.0	0.0	0.0	0.0	2.8	
TOTAL	2296	9483	0	0	0	0		

NUMBER OF OCCURRENCES OF F STABILITY = 19180

NUMBER OF CALMS WITH F STABILITY = 7401

ANNUAL RELATIVE FREQUENCY DISTRIBUTION STATION =RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	TOTAL
N	0.008955	0.009430	0.000000	0.000000	0.000000	0.000000	0.018385
NNE	0.006378	0.005594	0.000000	0.000000	0.000000	0.000000	0.011972
NE	0.005050	0.005137	0.000000	0.000000	0.000000	0.000000	0.010187
ENE	0.004837	0.004384	0.000000	0.000000	0.000000	0.000000	0.009221
E	0.005642	0.006051	0.000000	0.000000	0.000000	0.000000	0.011693
ESE	0.005481	0.004966	0.000000	0.000000	0.000000	0.000000	0.010447
SE	0.004368	0.003756	0.000000	0.000000	0.000000	0.000000	0.008124
SSE	0.004762	0.004738	0.000000	0.000000	0.000000	0.000000	0.009499
S	0.011355	0.012124	0.000000	0.000000	0.000000	0.000000	0.023479
SSW	0.014542	0.015127	0.000000	0.000000	0.000000	0.000000	0.029669
SW	0.012224	0.012296	0.000000	0.000000	0.000000	0.000000	0.024520
WSW	0.006704	0.005137	0.000000	0.000000	0.000000	0.000000	0.011842
W	0.006311	0.005754	0.000000	0.000000	0.000000	0.000000	0.012065
WNW	0.004924	0.004464	0.000000	0.000000	0.000000	0.000000	0.009388
NW	0.004409	0.004532	0.000000	0.000000	0.000000	0.000000	0.008942
NNW	0.004764	0.004772	0.000000	0.000000	0.000000	0.000000	0.009537
TOTAL	0.110705	0.108263	0.000000	0.000000	0.000000	0.000000	

RELATIVE FREQUENCY OF OCCURRENCE OF F STABILITY = 0.216970

RELATIVE FREQUENCY OF CALMS DISTRIBUTED ABOVE WITH F STABILITY = 0.064494

ANNUAL FREQUENCY DISTRIBUTION STATION RALEIGH,N.C.

SPEED(KTS)

DIRECTION	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	AVG SPD	TOTAL
N	297	2116	2847	1379	156	29	8.3	6826
NNE	250	1486	2181	1315	182	26	8.7	5440
NE	200	1561	2259	1094	86	7	8.2	5257
ENE	185	1289	1451	563	22	4	7.6	3514
E	138	1548	1681	386	32	6	7.2	3811
ESE	191	1204	1067	234	24	6	6.9	2726
SE	156	1152	1171	239	27	3	7.0	2748
SSE	168	1202	1196	347	33	2	7.3	2948
S	286	2831	3242	1043	104	8	7.6	7514
SSW	401	3080	3259	1287	123	15	7.7	8180
SW	402	2881	2922	1049	112	14	7.5	7470
WSW	321	1524	1240	420	36	7	7.0	3570
W	278	1568	1549	808	138	11	8.0	4352
WNW	242	1196	1607	1160	212	19	8.9	4166
NW	173	1138	1494	1086	203	22	9.1	4116
NNW	184	1182	1631	877	118	20	8.5	4012
AVG	2.8	5.1	8.2	12.8	15.2	23.9	6.5	
TOTAL	3892	26993	30677	13257	1617	199		

TOTAL NUMBER OF OBSERVATIONS = 87592

TOTAL NUMBER OF CALMS = 10942

ANNUAL RELATIVE FREQUENCY DISTRIBUTION STATION =RALEIGH,N.C. 55-64

SPEED(KTS)

DIRECTION	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	GREATER THAN 21	TOTAL
N	0.013149	0.024157	0.032503	0.015743	0.001804	0.000331	0.087688
NNE	0.009875	0.016965	0.024900	0.015013	0.002079	0.000297	0.069127
NE	0.009486	0.018050	0.026133	0.012450	0.000982	0.000080	0.067219
ENE	0.008073	0.014716	0.016565	0.006428	0.000291	0.000046	0.046079
E	0.008703	0.017673	0.019191	0.004407	0.000365	0.000068	0.050408
ESE	0.007822	0.013745	0.012181	0.002671	0.000274	0.000068	0.036763
SE	0.006950	0.012924	0.013597	0.002729	0.000308	0.000094	0.036581
SSE	0.007458	0.013723	0.013654	0.003962	0.000377	0.000023	0.039196
S	0.015870	0.032320	0.037013	0.011907	0.001187	0.000091	0.099359
SSW	0.010655	0.035163	0.037321	0.014509	0.001461	0.000171	0.107465
SW	0.010068	0.033462	0.033339	0.012433	0.001279	0.000160	0.090760
WSW	0.011126	0.017399	0.014365	0.004795	0.000434	0.000050	0.048218
W	0.010639	0.017901	0.017654	0.009225	0.001575	0.000126	0.057150
WNW	0.009538	0.013540	0.016063	0.012556	0.002420	0.000217	0.053336
NW	0.007277	0.012992	0.017036	0.012598	0.002318	0.000231	0.052292
NNW	0.007625	0.013494	0.018620	0.010012	0.001347	0.000228	0.051327
TOTAL	0.169353	0.308224	0.350226	0.151463	0.018461	0.002272	

TOTAL RELATIVE FREQUENCY OF OBSERVATIONS = 1.000000

TOTAL RELATIVE FREQUENCY OF CALMS DISTRIBUTED ABOVE = 0.124920

**FORTRAN ** STOP 12343

Enclosure 3

Shearon Harris Nuclear Power Plant
Revisions to the Secondary Liquid Waste Processing System

Carolina Power & Light Company has incorporated into the Shearon Harris Plant design all volatile treatment (AVT) and a condensate polishing system to maintain secondary coolant chemistry. The information describing these design changes is provided in format responsive to Question 2 of Enclosure 1 to Mr. D. R. Muller's letter of September 12, 1976. This information will be incorporated into the PSAR and Environmental Report in future amendments to the documents.

Question 2

For a pressurized water reactor having recirculating U-tube steam generators and employing all volatile treatment (AVT) to main secondary coolant chemistry, provide the following information:

a. Expected blowdown rate (lb/hr) and method of processing blowdown.

b. Number and type of condensate demineralizers (if applicable) and flow rate of condensate through polishing demineralizers (lb/hr).

c. Expected frequency of resin regeneration or replacement, volumes and radioactivity of regenerant and rinse solutions, sluice water, or backwash water per batch of resin regenerated or replaced.

d. Method of collection, processing and disposal of liquid wastes, including decontamination factors assumed for process operations.

e. P&ID's and process diagrams for the steam generator blowdown system and condensate polishing system.

Response

a. At full power, the mass of liquid in each steam generator is approximately 149,820 lb. The design blowdown rate is 2 percent of maximum guaranteed steam flow of 12,205,906 lb/hr or 244,118 lb/hr. Average blowdown is 37,500 lb/hr. The blowdown fluid is passed through an electromagnetic filter, which removes magnetic suspended solids, to the low pressure heater #3. The fluid subsequently cascades through LP heaters 2 and 1 to the condenser hotwell. Flush volumes from the electromagnetic filter are processed by the secondary liquid radwaste system. Figure 1 depicts the blowdown system.

b. A full-flow condensate polisher, consisting of 7 mixed bed demineralizer vessels, each with a volume of 222 $ft.^3$ (6 operating plus 1 standby) is capable of handling a normal flow of 8,426,000 lb/hr and a peak flow of 12,000,000 lb/hr. This normal condensate flow represents approximately 69% of the steam generator feedwater flow.

c. The frequency of condensate polisher regeneration is expected to be 72 regenerations, averaged over one year (30 day cycle for 6 polisher vessels). For each regeneration, 14,300 gallons of high conductivity waste with an activity of 4.46×10^{-3} µci/cc and 23,500 gallons of low conductivity waste with an activity of 5.58×10^{-6} µci/cc are processed. Isotopic breakdown of these activities are given in Table 1. Ultrasonic resin cleaning is not utilized. For the electromagnetic filter, one flush cycle of 800 gallons of low conductivity liquid is expected per day with an activity of 5.58×10^{-6} µci/cc. Activities are based on 0.25% failed fuel, 110 lb/day primary to secondary leakage, and average blowdown of 37,500 lb/hr.

d. A secondary waste system will collect and process the liquid waste generated from the steam/condensate system. Secondary liquid wastes include condensate polisher regeneration and rinse, blowdown filter backflush, and turbine building drains. The Secondary Liquid Waste System is common for two units (A flow diagram of the system is provided in Figure 2). High conductivity wastes are processed by evaporation and demineralization. Low conductivity wastes are processed by filtration and demineralization. Processed wastes are sampled and either recycled to condensate storage or discharged to the cooling tower blowdown. Assumed decontamination factors (DF) are:

	DF			
	Filtration	Evaporation	Demin.	Total
High Conductivity				
Iodine	-	10^3	10^2	10^5
CS, Rb	-	10^4	10	10^5
MO, Tc	-	10^4	10^2*	10^6
Y	-	10^4	10 *	10^5
Other	-	10^4	10^2	10^6
Low Conductivity				
CS, Rb	1	-	1	1
MO, Tc	1	-	10^2*	10^2
Y	1	-	10 *	10
Other	1	-	10^2	10^2

*DF includes credit for plateout.

e. The attached flow diagrams are provided:

Figure 1 - Blowdown and condensate polisher system.

Figure 2 - Secondary Liquid Waste Processing System.

TABLE 1
SECONDARY WASTE ACTIVITIES*

Isotope	Blowdown (μci/g)	Low Conductivity Waste (μci/cc)	High Conductivity Waste (μci/cc)
Br-84	1.40E-6	1.61E-8	5.63E-8
Rb-88	1.22E-4	3.05E-7	2.72E-6
Rb-89	3.36E-6	8.40E-9	6.42E-8
Sr-89	1.31E-7	3.28E-10	4.06E-6
Sr-90	4.58E-9	1.15E-11	1.73E-7
Sr-91	6.91E-8	1.60E-10	4.68E-8
Sr-92	2.38E-8	5.95E-11	4.85E-9
Y-90	6.10E-9	1.53E-11	1.73E-7
Y-91	1.95E-7	4.88E-10	6.21E-6
Y-92	2.32E-8	5.80E-11	6.20E-9
Zr-95	2.14E-8	5.35E-11	6.91E-7
Nb-95	2.10E-8	5.25E-11	6.90E-7
Mo-99	1.74E-4	4.35E-7	8.76E-4
I-131	7.93E-5	9.12E-7	1.07E-3
I-132	2.87E-5	3.30E-7	5.50E-5
I-133	1.28E-4	1.47E-6	2.02E-4
I-134	1.92E-5	2.21E-7	1.27E-6
I-135	7.02E-5	8.07E-7	3.57E-5
Te-132	9.46E-6	2.39E-8	5.60E-5
Te-134	9.46E-9	2.37E-9	5.13E-8
Cs-134	9.15E-6	2.29E-8	3.41E-4
Cs-136	4.88E-6	1.22E-8	9.20E-5
Cs-137	4.58E-5	1.15E-7	1.72E-3
Cs-138	3.05E-5	7.63E-8	1.24E-6
Ba-140	1.34E-7	3.35E-10	2.51E-6
La-140	4.58E-8	1.15E-10	6.39E-7
Ce-144	1.04E-8	2.60E-11	2.90E-7
Pr-144	1.04E-8	2.60E-11	2.90E-7
Cr-51	2.90E-8	7.25E-11	7.63E-7
Mn-54	2.41E-8	6.03E-11	8.79E-7
Mn-56	9.15E-7	2.29E-9	1.78E-7
Co-58	7.93E-7	1.98E-9	2.59E-5
Co-60	2.35E-8	5.88E-11	8.82E-7
Fe-59	3.36E-8	8.40E-11	1.01E-6
TOTAL	7.29E-4	5.58E-6	4.46E-3
H-3	1.00E-3	1.00E-3	1.00E-5

*Table is based on .25% failed fuel, 110 lb/day primary to secondary leak, and average blowdown of 37,500 lb/hr.

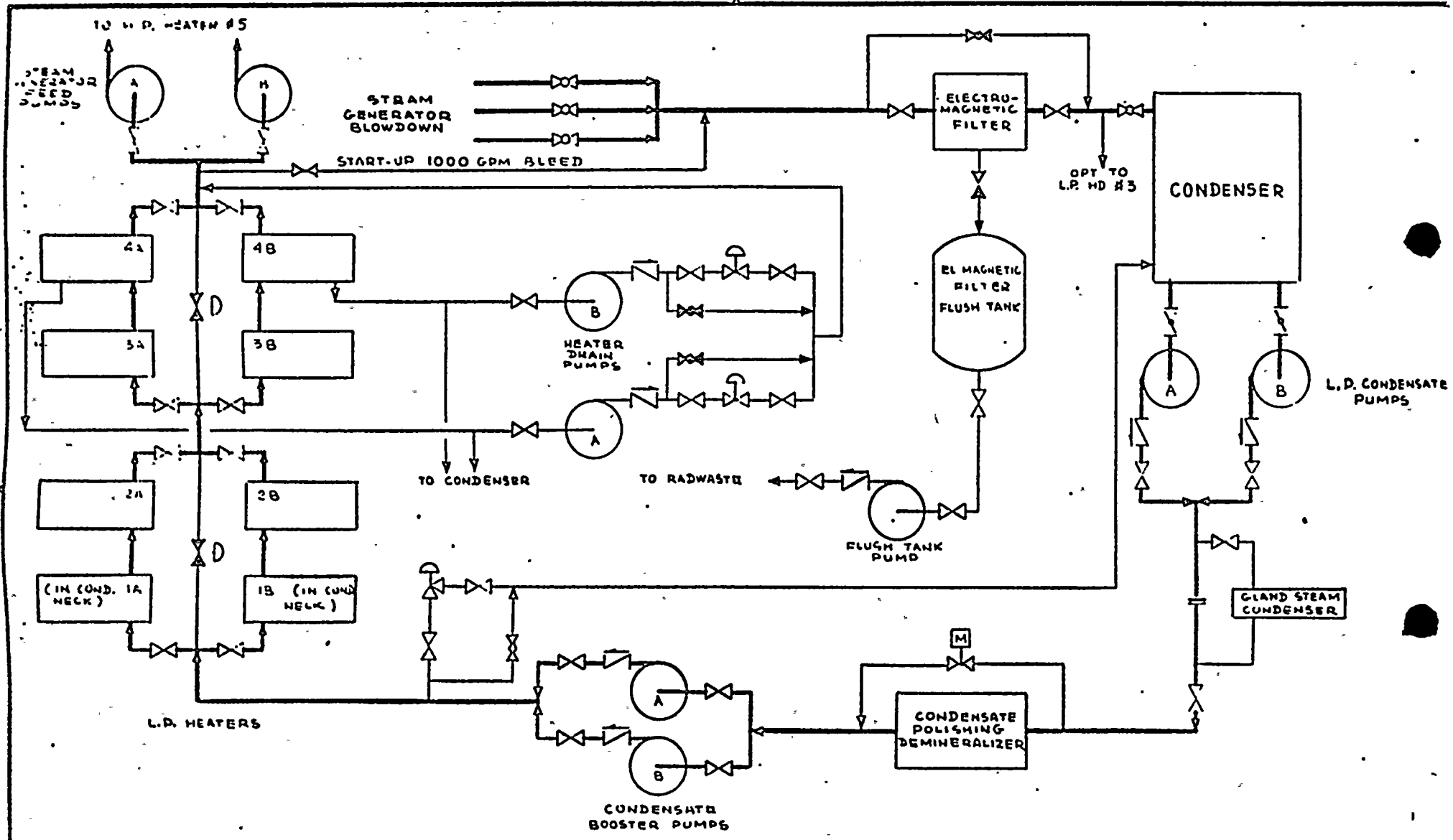


Figure 1

REV	DATE	BY	APPROVED	REV	DATE	BY	APPROVED
0				4			
7				3			
6				2			
5				1			

EBASCO SERVICES INCORPORATED

DIV RW DR GR

CN

DATE 3-31-76

APPROVED

CAROLINA POWER & LIGHT CO

SHEARON HARRIS NUCLEAR POWER PLANT

Flow Diagram- Blowdown & Condensate Polishing Sys.

CAR-RW-1.1

SK-M-344

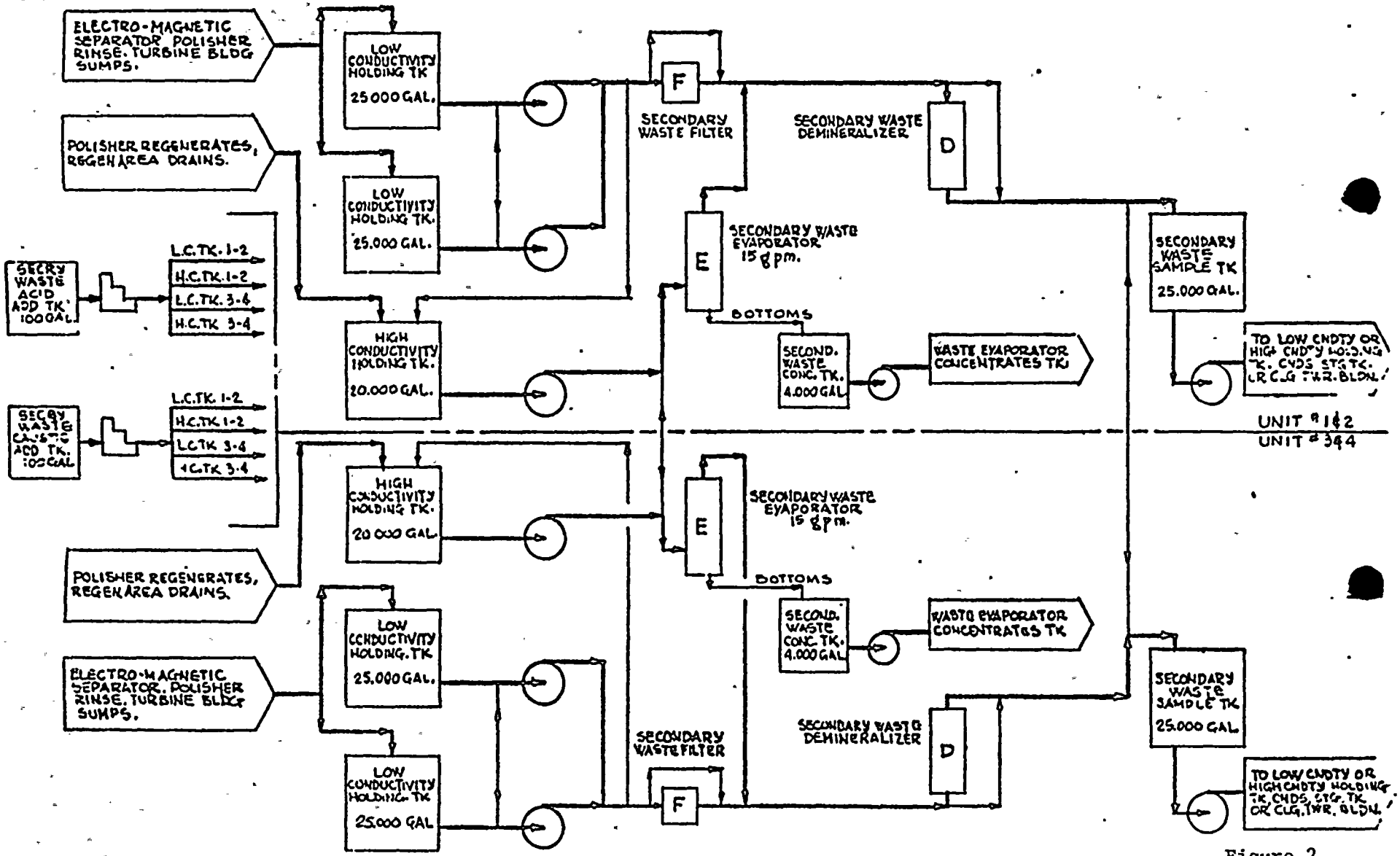


Figure 2

EDASCO SERVICES INCORPORATED	CAROLINA POWER & LIGHT CO SHEARON HARRIS PROJECT	CAR-216 SK-M 344
DIV MEC. DR. A.D. SCALE — CH — DATE 1-16-76 APPROVED	FLOW DIAGRAM Secondary Liquid Waste Processing System.	

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
CAROLINA POWER & LIGHT COMPANY	)	Docket Nos. 50-400
	)	50-401
(Shearon Harris Nuclear Power Plant	)	50-402
	)	50-403
Units 1, 2, 3, and 4)	)	

CERTIFICATE OF SERVICE

This is to certify that a copy of the letter dated May 20 , 1976 to Mr. Benard C. Rusche from Mr. J. A. Jones regarding information required for the 10CFR50, Appendix I evaluation for the Shearon Harris Nuclear Power Plant Units 1, 2, 3, and 4 has this 20th day of May been served upon the Chief Executive Officers of Wake and Chatham Counties, North Carolina, by deposit of the same in the United States mail addressed as follows:

Mr. Vassar P. Shearon, Chairman
Board of County Commissioners of Wake County
Post Office Box 550
Raleigh, North Carolina 27602

Mr. Ben Wimberly, Chairman
Board of County Commissioners of Chatham County
Post Office Box 111
Pittsboro, North Carolina 27312

A copy of this letter has also been served this day upon each member of the Atomic Safety and Licensing Board, and other appropriate NRC personnel by deposit of the same in the United States mail addressed as follows:

Thomas W. Reilly, Esq.
Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Glenn O. Bright
Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

5258

Dr. J. V. Leeds, Jr.
Post Office Box 941
Houston, Texas 77001

Mr. Nathaniel H. Goodrich, Chairman
Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Secretary
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555
Attention: Chief, Public Proceeding Staff

Mr. Thomas S. Erwin
Post Office Box 928
115 West Morgan Street
Raleigh, North Carolina 27602

Mr. C. A. Barth
Regulatory Staff Counsel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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828-8211

Dated: May 20, 1976