

SUMMARY*

RADIOACTIVE EFFLUENT RELEASE REPORT

FOR THE

NORTH ANNA POWER STATION

JANUARY 1, 1983 to JUNE 30, 1983

*This Summary of the North Anna Power Station Radioactive Effluent Release Report (1st and 2nd quarter, 1983) contains Sections 1, 2, 3, Appendix A, and excerpts from Appendix B of the full report. The full report is available for review at the North Anna Power Station.

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RADIOACTIVE EFFLUENT RELEASE REPORT

FOR THE

NORTH ANNA POWER STATION

January 1, 1983 to June 30, 1983

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FORWARD

This report is submitted as required by Appendix B to Operating license, Environmental Technical Specifications for North Anna Power Station Units 1 and 2, Virginia Electric and Power Company, Docket Nos. 50-338, 50-339 Section 5.6.1.2.

RADIOACTIVE EFFLUENT RELEASE REPORT
FOR THE
NORTH ANNA POWER STATION

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PURPOSE AND SCOPE

1. This report documents the release of radioactivity from the site for the previous semi-annual period with the dilution and dispersion of the liquid and gaseous radioactive effluents with the environs of the site and the assessment of radiation doses to individuals and populations from the effluents.

The report includes summaries of the quantities of radioactive liquid and gaseous effluents and solid waste released from the station as outlined in Regulatory Guide 1.21. "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants". Also included are summaries of the meteorological conditions concurrent with the release of gaseous effluents as outlined in Regulatory Guide 1.21, and summaries of calculated doses for individuals and populations from liquid and gaseous effluents following Reg. Guides 1.21 and 1.109 through 1.113. The site specific environmental parameters used for calculating dose from the effluents are included for reference. These environmental parameters are redetermined each year at the beginning of the growing/grazing season.

The radioactive liquid and gaseous effluent data, meteorological data, and dose calculations are summarized on a quarterly basis for all liquid and continuous gaseous releases. Intermittent gaseous releases are summarized separately along with the concurrent meteorological data and calculated radiation doses to individuals.

2. DATA COLLECTION AND ANALYSIS

2.1 EFFLUENT RELEASES

The radioactive effluents released to the environment from the station during the report period were sampled and analyzed for radioactivity in accordance with the Environmental Technical Specifications, Specifications 2.2.2 and 2.2.4.

Summaries of the quantities of radioactive materials in liquid and gaseous effluents released to the environment are included in Appendix A to this report as Tables 1A, 1B, 2A, 2B. The reported quantities of radioactive materials are measured levels. The Minimal Detectable Activity levels for individual nuclides for liquid and gaseous effluents is included in Appendix A as Table 4.

2.2 METEOROLOGICAL MEASUREMENTS

Site meteorological conditions were measured during the report period and recorded as hourly average of wind speed, wind direction and differential temperature between the 150 foot and 35 foot level temperature sensors at the station meteorological tower.

Summaries of the meteorological conditions for the report period are included in Appendix B, for the release period under consideration as joint frequency distributions of wind speed and direction by stability class.

2.3 OFFSITE EXPOSURE ESTIMATES

Estimates of offsite exposures resulting from the releases of radioactive effluents to unrestricted areas during the report period were calculated following Reg. Guides 1.21 and 1.109 through 1.113. The result of these estimates is included as Appendix B to this report.

2.3.1 MAXIMUM INDIVIDUAL ESPOSURES

Estimates of maximum individuals offsite exposures were calculated using the critical receptor survey results to determine appropriate pathways. Maximum individual usage values and pathway parameters were taken from Reg. Guide 1.109, Table E-5 and E-15.

2.3.1.1 LIQUID EFFLUENT RELEASE EXPOSURE

Estimates of maximum individual offsite exposures were calculated for potable water, aquatic foods (sport fish), shoreline recreation, and contaminated foods.

No public drinking water supplies are drawn from North Anna Reservoir, however, the Hanover County, Doswell Treatment Plant withdraws downstream from the reservoir.

This is the point of exposure for this pathway. A transit time of 5 days, including distribution, was estimated for this calculation. The pathway, for contaminated foods is the access to the Waste Heat Treatment Facility by cattle located on pastures adjoining the facility.

Mixing ratios of 0.66 and 0.63 were used for the Waste Heat Treatment Facility and reservoir respectively (Ref. FSAR 11.2.7). No additional mixing ratio was assumed for the reservoir to North Anna River.

The result of these calculations is included in Appendix B, for the first and second quarters.

2.3.1.2 GASEOUS EFFLUENT RELEASE EXPOSURES

Estimates of maximum individual offsite exposures were calculated for external exposure from noble gases, inhalation of radioactivity in air, deposition of radioactivity on the ground plane and consumption of deposited radioactivity from leafy vegetation, produce, cows milk, goats milk, and meat pathways. Calculations were performed for total-body and organ exposures as appropriate. These results are included in Appendix B, Sections II and III. In addition, the gamma and beta exposures to air at the site boundary was calculated and the result is included in Appendix B, Sections II and III. Calculations were performed for each sector of the environment surrounding the site, using meteorological data concurrent with the release period.

2.3.2 POPULATION EXPOSURES

Annual population integrated total-body and thyroid exposures were calculated for the population within a 50 mile radius of

the site. Tables E-4 and E-15 of Reg. Guide 1.109 were used to determine the usage values and pathways parameters for population exposures.

2.3.2.1 LIQUID EFFLUENT RELEASE POPULATION EXPOSURES

Average individual exposures resulting from the release of liquid effluents were calculated for potable water, aquatic foods, shoreline recreation, and contaminated foods. These results were incorporated along with the production and/or usage values for these pathways and age distribution fractions to calculate the population exposures from liquid pathways. This result is included as Appendix B, Sections II and III.

2.3.2.2 GASEOUS EFFLUENT RELEASE POPULATION EXPOSURES

Estimate of the average adult, teen and child exposure were calculated for total-body and thyroid external exposures from noble gas submersion and deposition on the ground plane and exposure from inhalation of radioactivity. Estimates were calculated for each sector and subregion with the 50 mile radius of the site. Each subsector individual exposure was multiplied by the estimate age dependent population for the subregion (Ref. FSAR 2.1.3), to yield the population exposures for each subregion and pathway. These results are included in Appendix B for each continuous and batch release. Estimates of the average adult, teen and child total-body and thyroid exposures for the 50 mile region were

calculated for the produce, milk, and meat pathways. These estimates were incorporated with crop data for the region and age dependent population estimates to estimate the MAN-REM and MAN-THYROID-REM from the terrestrial food pathway. This result is included in Appendix B for each batch and continuous release.

2.4 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A summary of solid waste and/or irradiated fuel shipments from the station during the report period is included in Appendix A, Table 3.

3. RESULTS AND EVALUATION

3.1 LIQUID EFFLUENT RELEASES

Calculated estimated offsite exposures for liquid effluents for the 1st and 2nd quarters of 1983 resulted in estimates of less than 1 mrem for the maximum individual total body or organ dose.

Calculated estimated offsite population exposures for this period resulted in doses of $1.32\text{E}-1$ and $3.35\text{E}-1$ Man-Rem Total-Body dose during the 1st and 2nd quarters and $7.84\text{E}-1$ and $9.31\text{E}0$ Man-Thyroid-Rem dose for the 1st and 2nd quarters respectively from liquid.

3.2 GASEOUS EFFLUENT RELEASES

Estimates of offsite exposures for continuous gaseous effluents for the 1st and 2nd quarters of 1983 resulted in estimate of

less than 1 mrem for the maximum individual total-body or organ dose.

Dose estimates were calculated for 11 (eleven) batch releases during the 1st quarter and 17 (seventeen) batch releases during the 2nd quarter of 1983. The dose estimates were less than 1 mrem for the maximum individual total-body or organ dose.

Calculated estimated offsite population exposures for this period resulting from gaseous releases resulted in estimated doses of less than 1.55 E0 Man-Rem total-body by the noble gas pathway and less than 2.65 E0 Thyroid-Rem by the cow-milk pathway for all gaseous releases.

APPENDIX A
RADIOACTIVE EFFLUENT RELEASE REPORT
FOR THE
NORTH ANNA POWER STATION
January 1, 1983 to June 30, 1983

EFFLUENT RELEASE DATA

| | |
|----------|---|
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| TABLE 2A | LIQUID EFFLUENTS-SUMMATION |
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| TABLE 3 | SOLID WASTE SHIPMENT |
| TABLE 4 | MINIMAL DETECTABLE ACTIVITY LEVEL |

TABLE 1A
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1983)
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASE
NORTH ANNA POWER STATION
DOCKET 50-338

| | UNIT | 1st. QUARTER | 2nd. QUARTER | EST. TOTAL ERROR % |
|---|--------------|--------------|--------------|-----------------------|
| A. Fission & Activation gases | | | | |
| 1. Total release | Ci | 1.22 E+3 | 5.20 E+3 | 1.50 E+1 |
| 2. Average release rate for period | μCi/sec | 1.57 E+2 | 6.61 E+2 | |
| 3. Percent of Technical Specification limit | Total Body % | 8.62 E-3 | 4.20 E-2 | |
| | Total Skin % | 4.21 E-3 | 2.05 E-2 | |
| B. Iodines | | | | |
| 1. Total Iodine-131 | Ci | 2.64 E-3 | 3.39 E-2 | 1.50 E+1 |
| 2. Average release rate for period | μCi/sec | 3.40 E-4 | 4.31 E-3 | |
| 3. Percent of Technical Specification limit | % | 6.60 E-2 | 8.48 E-1 | |
| C. Particulates | | | | |
| 1. Particulates with half-lives > 8 days | Ci | 4.52 E-2 | 6.92 E-2 | 1.50 E+1 |
| 2. Average release rate for period | μCi/sec | 5.81 E-3 | 8.80 E-3 | |
| 3. Percent of Technical Specification limit | % | 2.38 E-1 | 3.61 E-1 | |
| 4. Gross Alpha radioactivity | Ci | 7.69 E-5 | 1.74 E-4 | |
| D. Tritium | | | | |
| 1. Total release | Ci | 7.57 E 0 | 4.65 E 0 | 1.50 E+1 |
| 2. Average release rate for period | μCi/sec | 9.74 E-1 | 5.91 E-1 | |
| 3. Percent of Technical Specification limit | % | --- | --- | |

TABLE 1B

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1983)

Page 1 of 2

GASEOUS EFFLUENTS-GROUND-LEVEL RELEASES

NORTH ANNA POWER STATION

DOCKET 50-338

| NUCLIDES RELEASED | UNIT | CONTINUOUS MODE | | BATCH MODE | |
|------------------------|------|-----------------|-------------|-------------|-------------|
| | | 1st QUARTER | 2nd QUARTER | 1st QUARTER | 2nd QUARTER |
| 1. Fission Gases | | | | | |
| Krypton-85 | CI | 1.02 E0 | 2.68 E0 | 6.97 E-3 | |
| Krypton-85m | CI | 9.08 E-1 | 5.59 E0 | 2.99 E-2 | 6.61 E-3 |
| Krypton-87 | CI | 9.64 E-1 | 5.95 E0 | | 9.13 E-4 |
| Krypton-88 | CI | 1.57 E0 | 1.01 E+1 | 2.48 E-2 | 6.21 E-4 |
| Xenon-131m | CI | 4.36 E0 | 1.58 E+1 | 2.90 E-2 | 2.64 E+1 |
| Xenon-133 | CI | 1.16 E+3 | 3.13 E+3 | 7.37 E0 | 1.57 E+3 |
| Xenon-133m | CI | 4.04 E0 | 1.49 E+1 | 1.25 E-1 | 8.49 E0 |
| Xenon-135 | CI | 3.17 E+1 | 2.74 E+2 | 4.88 E-1 | 9.96 E-1 |
| Xenon-135m | CI | 2.09 E0 | 1.21 E+2 | 3.67 E-3 | 1.11 E-2 |
| Xenon-138 | CI | 1.17 E0 | 1.25 E+1 | | |
| Others (specify) Ar-41 | CI | 2.30 E-1 | 1.05 E0 | 9.83 E-3 | |
| Unidentified | CI | | | | |
| Total for Period | CI | 1.21 E+3 | 3.59 E+3 | 8.09 E0 | 1.61 E+3 |
| 2. Iodines | | | | | |
| Iodine-131 | CI | 2.57 E-3 | 2.30 E-2 | 6.90 E-5 | 1.09 E-2 |
| Iodine-132 | CI | | 8.59 E-3 | 1.93 E-5 | 3.14 E-4 |
| Iodine-133 | CI | 3.88 E-2 | 1.21 E-2 | 1.53 E-4 | 4.29 E-3 |
| Iodine-134 | CI | | | 1.74 E-5 | 8.90 E-5 |
| Iodine-135 | CI | 1.91 E-3 | 3.36 E-3 | 6.29 E-5 | 1.12 E-3 |
| Total for Period | CI | 4.33 E-2 | 4.71 E-2 | 3.23 E-4 | 1.67 E-2 |
| 3. Particulates | | | | | |
| Strontium-89 | CI | 1.87 E-6 | 1.61 E-6 | | |
| Strontium-90 | CI | | 1.81 E-7 | | |
| Cesium-134 | CI | 2.15 E-5 | 5.65 E-6 | 4.15 E-6 | 3.39 E-4 |
| Cesium-137 | CI | 7.07 E-5 | 5.56 E-5 | 8.52 E-6 | 6.11 E-4 |
| Barium-lanthanum-140 | CI | | | | |
| Others (specify) | CI | | | | |
| Co-58 | CI | 1.77 E-5 | 2.18 E-3 | 4.89 E-7 | 8.06 E-5 |
| Co-60 | CI | 9.17 E-5 | 2.00 E-3 | | 8.16 E-6 |
| Mn-54 | CI | 2.49 E-6 | 8.17 E-7 | 5.12 E-7 | 5.69 E-7 |
| Zn-65 | CI | 8.08 E-7 | | | |
| Tu-103 | CI | | 8.17 E-7 | | |
| Cr-51 | CI | | | | 5.51 E-6 |
| Fe-59 | CI | | | | 2.28 E-7 |
| Co-57 | CI | | | | 1.18 E-7 |
| Ca-136 | CI | | | | 8.02 E-5 |

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1983)
GASEOUS F. FLUENTS-GROUND-LEVEL RELEASES
NORTH ANNA POWER STATION
DOCKET 50-338

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TABLE 2A
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1983)
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES
NORTH ANNA POWER STATION
DOCKET 50-338

| | UNIT | 1st QUARTER | 2nd QUARTER | EST. TOTAL ERROR % |
|--|--------|-------------|-------------|-----------------------|
| A. Fission & Activation products | | | | |
| 1. Total release (not including tritium, gases, alpha) | Ci | 2.73 E-1 | 3.24 E0 | 1.50 E+1 |
| 2. Average diluted concentration during period | µCi/ml | 7.83 E-10 | 6.12 E-9 | |
| 3. Percent of applicable limit | % | 1.24 E-1 | 1.43 E0 | |
| B. Tritium | | | | |
| 1. Total release | Ci | 9.81 E+1 | 2.78 E+2 | 1.50 E+1 |
| 2. Average diluted concentration during period | µCi/ml | 2.81 E-7 | 5.24 E-7 | |
| 3. Percent of applicable limit | % | 9.37 E-3 | 1.75 E-2 | |
| C. Dissolved and entrained gases | | | | |
| 1. Total release | Ci | 1.39 E0 | 3.42 E0 | 1.50 E+1 |
| 2. Average diluted concentration during period | µCi/ml | 3.98 E-9 | 6.45 E-9 | |
| 3. Percent of applicable limit | % | 9.96 E-3 | 1.61 E-2 | |
| D. Gross Alpha radioactivity | | | | |
| 1. Total release | Ci | <MDA | <MDA | 1.50 E+1 |
| E. Volume of waste released (prior to dilution) | | | | |
| | Liters | 4.32 E+7 | 7.57 E+7 | 2.00 E0 |
| F. Volume of dilution water used during period | | | | |
| | Liters | 3.49 E+11 | 5.30 E+11 | 2.00 E0 |

TABLE 2B
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1983)
LIQUID EFFLUENTS
NORTH ANNA POWER STATION
DOCKET 50-338

| NUCLIDES RELEASED | UNIT | CONTINUOUS MODE | |
|--------------------------|------|-----------------|-------------|
| | | 1st QUARTER | 2nd QUARTER |
| Strontium-89 | CI | | 2.40 E-3 |
| Strontium-90 | CI | | |
| Cesium-134 | CI | 6.86 E-3 | 6.76 E-2 |
| Cesium-137 | CI | 2.07 E-2 | 1.16 E-1 |
| Iodine-131 | CI | 9.70 E-2 | 2.12 E0 |
| Iodine-133 | CI | 1.03 E-1 | 4.85 E-1 |
| Iodine-135 | CI | 1.41 E-2 | 3.98 E-2 |
| Cobalt-58 | CI | 7.09 E-3 | 9.03 E-2 |
| Cobalt-60 | CI | 2.24 E-2 | 2.04 E-1 |
| Iron-59 | CI | | 4.01 E-3 |
| Zinc-65 | CI | | |
| Manganese-54 | CI | 2.44 E-4 | 9.55 E-3 |
| Chromium-51 | CI | | 1.91 E-2 |
| Zirconium-Niobium-95 | CI | 1.07 E-4 | 1.63 E-2 |
| Sb-124 | CI | | 7.37 E-3 |
| Te-131m | CI | 1.94 E-4 | 1.32 E-4 |
| Barium-lanthanum-140 | CI | | |
| Cerium-143 | CI | | 6.87 E-5 |
| Other (specify) I-132 | CI | 9.14 E-5 | 2.58 E-4 |
| Na-24 | CI | 1.40 E-3 | 1.23 E-3 |
| Cs-136 | CI | | 1.89 E-2 |
| Tc-99m | CI | | 2.71 E-3 |
| Zr-97 | CI | | 2.30 E-4 |
| Ru-103 | CI | | 9.58 E-4 |
| Ag-110m | CI | | 3.44 E-2 |
| La-142 | CI | | 7.57 E-5 |
| Sb-122 | CI | 2.88 E-4 | 6.20 E-3 |
| Unidentified | CI | | |
| Total for period (above) | CI | 2.73 E-1 | 3.24 E0 |
| Xenon-131m | CI | 5.81 E-3 | 1.24 E-2 |
| Xenon-133 | CI | 1.24 E0 | 3.35 E0 |
| Xenon-133m | CI | 2.51 E-3 | 1.07 E-2 |
| Xenon-135 | CI | 1.74 E-2 | 3.72 E-2 |
| Xenon-135m | CI | 1.24 E-1 | 9.51 E-3 |
| Argon-41 | CI | | 4.37 E-5 |
| Tritium | CI | 9.81 E+1 | 2.78 E+2 |

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1983)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

January through June

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

| 1. Type of Waste | UNIT | 6-MONTH PERIOD | EST. TOTAL ERROR, % |
|---|----------------------|--------------------|---------------------|
| a. Spent resins, filter sludges, evaporator bottoms, etc. | m ³ Ci | 3.9 E+1 6.8 E+2 | 1.0 E+1 |
| b. Dry compressible waste, contaminated equipment, etc. | m ³ Ci | 2.1 E+2 2.3 E+1 | 1.0 E+1 |
| c. Irradiated components, control rods, etc. | m ³ Ci | . E . E | . E |
| d. Other (describe) Solidified Oil | m ³ Ci | 2.1 E+1 5.0 E-2 | 1.0 E+1 |

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

| | | |
|-----------|---|---------|
| a. Mn-54 | % | 2.8 E+0 |
| Co-57 | % | 2.0 E-1 |
| Co-58 | % | 1.7 E+1 |
| Co-60 | % | 5.3 E+1 |
| Cs-134 | % | 6.0 E+0 |
| Cs-137 | % | 2.1 E+1 |
| b. Co-58 | % | 3.0 E+1 |
| Co-60 | % | 3.8 E+1 |
| Mn-54 | % | 3.0 E+0 |
| Cs-134 | % | 9.0 E+0 |
| Cs-137 | % | 2.0 E+1 |
| c. | | |
| d. Cs-134 | % | 4.9 E+1 |
| Cs-137 | % | 5.1 E+1 |

3. Solid Waste Disposition

| <u>NUMBER OF SHIPMENTS</u> | <u>MODE OF TRANSPORTATION</u> | <u>DESTINATION</u> |
|----------------------------|-------------------------------|--------------------|
| 20 | Private vehicle | Barnwell, S.C. |
| 2 | Private vehicle | Richland, Wa. |

B. IRRADIATED FUEL SHIPMENTS (Disposition)

| <u>NUMBER OF SHIPMENTS</u> | <u>MODE OF TRANSPORTATION</u> | <u>DESTINATION</u> |
|----------------------------|-------------------------------|--------------------|
|----------------------------|-------------------------------|--------------------|

TABLE 4

MINIMAL DETECTABLE ACTIVITY LEVELS ($\mu\text{Ci/ml}$)

| <u>NUCLIDE</u> | <u>GASEOUS EFFLUENTS</u> | <u>LIQUID EFFLUENTS</u> |
|----------------|--------------------------|-------------------------|
| Ar-41 | 3.80 E-7 | |
| Kr-85m | 5.65 E-5 | |
| Kr-85 | 1.43 E-4 | |
| Kr-87 | 1.28 E-6 | |
| Kr-88 | 1.57 E-6 | |
| Xe-131m | 1.76 E-5 | 2.81 E-6 |
| Xe-133 | 1.12 E-6 | 2.02 E-7 |
| Xe-133m | 3.94 E-6 | 5.41 E-7 |
| Xe-135 | 5.59 E-7 | 6.28 E-8 |
| Xe-135m | 2.85 E-6 | 1.33 E-7 |
| Xe-138 | 9.63 E-6 | |
| I-131 | 1.73 E-13 | 6.61 E-8 |
| I-132 | 1.75 E-13 | 5.08 E-8 |
| I-133 | 1.40 E-13 | 5.78 E-8 |
| I-134 | 2.89 E-13 | |
| I-135 | 9.33 E-13 | 2.77 E-7 |
| Co-58 | 1.18 E-13 | 5.27 E-8 |
| Co-60 | 1.33 E-13 | 7.28 E-8 |
| Cs-134 | 1.26 E-13 | |
| Cs-137 | 1.56 E-13 | |
| Cs-138 | 3.11 E-13 | |
| Mn-54 | 1.09 E-13 | 5.82 E-8 |
| Zn-65 | 3.53 E-13 | |
| Nb-95 | 1.20 E-13 | 5.17 E-8 |
| Rb-88 | 1.36 E-12 | |
| Na-24 | 1.82 E-13 | 4.91 E-8 |
| Sb-122 | 1.97 E-13 | 8.34 E-8 |
| Te-131m | 3.41 E-13 | 1.31 E-7 |
| La-142 | 2.47 E-13 | |
| H-3 | 1.02 E-9 | 3.21 E-6 |
| Alpha | 2.75 E-15 | 8.88 E-9 |

APPENDIX B EXCERPTS
ANNUAL ENVIRONMENTAL SURVEY DATA FOR 1983
AND
METEROLOGICAL DATA SUMMARIES

SECTION I

North Anna Power Station

ANNUAL ENVIRONMENTAL SURVEY DATA FOR 1983

| SECTOR | NEAREST RESIDENT | NEAREST SITE BOUNDARY | MILKCOW | MEAT AMINAL | MILK GOAT | VEG. GARDEN > 500 ft ² |
|--------|---------------------|--------------------------|---------|-------------|-----------|--------------------------------------|
| N | 2.48 km | 1.40 km | 3.28 km | 3.28 km | | 2.48 km |
| NNE | 1.76 km | 1.36 km | | 4.16 km | | 2.64 km |
| NE | 2.00 km | 1.32 km | | 3.60 km | | 1.92 km |
| ENE | 3.60 km | 1.31 km | 7.20 km | 4.16 km | | 3.60 km |
| E | 2.08 km | 1.33 km | | 2.08 km | | 2.08 km |
| ESE | 2.32 km | 1.37 km | | 6.88 km | 7.84 km | 6.88 km |
| SE | 2.32 km | 1.41 km | | 2.24 km | | 2.40 km |
| SSE | 1.52 km | 1.47 km | | 2.32 km | | 3.20 km |
| S | 1.52 km | 1.52 km | | 2.40 km | | 2.40 km |
| SSW | 2.16 km | 1.62 km | 5.92 km | 3.60 km | | 2.16 km |
| SW | 2.40 km | 1.70 km | | 2.64 km | | 2.40 km |
| WSW | 2.24 km | 1.75 km | | 2.80 km | | 2.80 km |
| W | 2.56 km | 1.71 km | | 7.20 km | | 7.20 km |
| WNW | 1.84 km | 1.64 km | | 4.96 km | | 4.32 km |
| NW | 1.92 km | 1.56 km | | 3.36 km | | 3.36 km |
| NNW | 3.60 km | 1.45 km | | 3.68 km | | 3.60 km |

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 1
 REPORT START TIME : 1:00 HRS = 01:00AM JANUARY 1, 1983
 REPORT END TIME : 2159:00 HRS = 11:00PM MARCH 31, 1983
 STABILITY CLASS : A
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 2.00E 00 | 5.10E 01 | 3.50E 01 | 7.00E 00 | 0.00E-01 | 0.00E-01 | 9.50E 01 |
| NNE | 2.00E 00 | 2.50E 01 | 1.40E 01 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 4.50E 01 |
| NE | 4.00E 00 | 1.30E 01 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.10E 01 |
| ENE | 5.00E 00 | 1.60E 01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.40E 01 |
| E | 1.60E 01 | 1.60E 01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.20E 01 |
| ESE | 1.20E 01 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.70E 01 |
| SE | 5.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 8.00E 00 |
| SSE | 1.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| S | 2.00E 00 | 1.00E 01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| SSW | 0.00E-01 | 1.20E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.30E 01 |
| SW | 0.00E-01 | 2.00E 00 | 6.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 9.00E 00 |
| WSW | 1.00E 00 | 7.00E 00 | 1.20E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 2.10E 01 |
| W | 1.00E 00 | 1.10E 01 | 6.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 1.90E 01 |
| WNW | 3.00E 00 | 1.50E 01 | 2.20E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 4.10E 01 |
| NW | 1.00E 01 | 1.60E 01 | 2.60E 01 | 0.00E 00 | 0.00E-01 | 0.00E-01 | 6.00E 01 |
| NNW | 7.00E 00 | 1.40E 01 | 3.60E 01 | 1.90E 01 | 2.00E 00 | 0.00E-01 | 7.80E 01 |
| TOT | 7.10E 01 | 2.18E 02 | 1.68E 02 | 4.20E 01 | 2.00E 00 | 0.00E-01 | 5.01E 02 |

PERIODS OF CALM(HOURS): 2.000E 01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 PERIOD OF RECORD : EACH WIND SPEED AND DIRECTION
 REPORT START TIME : QUARTER # 1
 REPORT END TIME : 1:00 HRS = 01:00AM JANUARY 1, 1983
 STABILITY CLASS : 2159:00 HRS = 11:00PM MARCH 31, 1983
 ELEVATION : B
 : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 5.00E 00 | 1.40E 01 | 8.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 2.80E 01 |
| NNE | 4.00E 00 | 7.00E 00 | 9.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 01 |
| NE | 1.00E 00 | 6.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.20E 01 |
| ENE | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| E | 1.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| ESE | 0.00E-01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| SE | 0.00E-01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| SSE | 1.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| S | 0.00E-01 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| SSW | 1.00E 00 | 3.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| SW | 0.00E-01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| WSW | 0.00E-01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| W | 1.00E 00 | 4.00E 00 | 1.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 9.00E 00 |
| WNW | 1.00E 00 | 3.00E 00 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 01 |
| NW | 0.00E-01 | 2.00E 00 | 7.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 1.30E 01 |
| NNW | 1.00E 00 | 3.00E 00 | 1.00E 01 | 8.00E 00 | 0.00E-01 | 0.00E-01 | 2.20E 01 |
| TOT | 1.80E 01 | 6.40E 01 | 4.70E 01 | 1.60E 01 | 0.00E-01 | 0.00E-01 | 1.45E 02 |

PERIODS OF CALM(HOURS): 5.000E 00
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 1
 REPORT START TIME : 1:00 HRS = 01:00AM JANUARY 1, 1983
 REPORT END TIME : 2159:00 HRS = 11:00PM MARCH 31, 1983
 STABILITY CLASS : C
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 1.80E 01 | 2.80E 01 | 1.40E 01 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 6.50E 01 |
| NNE | 8.00E 00 | 3.00E 01 | 1.10E 01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.90E 01 |
| NE | 5.00E 00 | 1.80E 01 | 8.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 3.30E 01 |
| ENE | 3.00E 00 | 5.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.20E 01 |
| E | 2.00E 00 | 1.10E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| ESE | 1.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| SE | 1.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| SSE | 0.00E-01 | 2.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| S | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| SSW | 2.00E 00 | 0.00E-01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| SW | 2.00E 00 | 1.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| WSW | 2.00E 00 | 4.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 8.00E 00 |
| W | 1.00E 00 | 3.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 7.00E 00 |
| WNW | 1.00E 00 | 2.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 7.00E 00 |
| NW | 1.00E 00 | 3.00E 00 | 5.00E 00 | 1.00E 01 | 3.00E 00 | 0.00E-01 | 2.20E 01 |
| NNW | 2.00E 00 | 2.20E 01 | 2.70E 01 | 1.00E 01 | 0.00E-01 | 0.00E-01 | 6.10E 01 |
| TOT | 5.20E 01 | 1.35E 02 | 8.30E 01 | 2.70E 01 | 3.00E 00 | 0.00E-01 | 3.00E 02 |

PERIODS OF CALM(HOURS): 4.000E 00
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 1
 REPORT START TIME : 1:00 HRS = 01:00AM JANUARY 1, 1983
 REPORT END TIME : 2159:00 HRS = 11:00PM MARCH 31, 1983
 STABILITY CLASS : D
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 8.00E 00 | 2.40E 01 | 1.20E 01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 5.00E 01 |
| NNE | 7.00E 00 | 4.40E 01 | 1.70E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 6.90E 01 |
| NE | 5.00E 00 | 1.40E 01 | 1.00E 01 | 2.40E 01 | 0.00E-01 | 0.00E-01 | 5.30E 01 |
| ENE | 6.00E 00 | 1.80E 01 | 7.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 3.40E 01 |
| E | 8.00E 00 | 8.00E 00 | 8.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 2.60E 01 |
| ESE | 7.00E 00 | 6.00E 00 | 5.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 2.00E 01 |
| SE | 6.00E 00 | 1.70E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.40E 01 |
| SSE | 7.00E 00 | 1.50E 01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.80E 01 |
| S | 9.00E 00 | 6.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.70E 01 |
| SSW | 7.00E 00 | 7.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.90E 01 |
| SW | 8.00E 00 | 1.00E 01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.40E 01 |
| WSW | 8.00E 00 | 1.30E 01 | 9.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 01 |
| W | 1.40E 01 | 2.80E 01 | 1.70E 01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.90E 01 |
| WNW | 6.00E 00 | 1.00E 01 | 1.80E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 4.90E 01 |
| NW | 1.10E 01 | 1.50E 01 | 7.00E 00 | 7.00E 00 | 7.00E 00 | 2.00E 00 | 4.90E 01 |
| NNW | 1.10E 01 | 2.50E 01 | 1.30E 01 | 2.40E 01 | 0.00E-01 | 1.00E 00 | 7.40E 01 |
| TOT | 1.28E 02 | 2.74E 02 | 1.43E 02 | 7.00E 01 | 7.00E 00 | 3.00E 00 | 6.25E 02 |

PERIODS OF CALM(HOURS): 2.800E 01

HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 1
 REPORT START TIME : 1:00 HRS = 01:00AM JANUARY 1, 1983
 REPORT END TIME : 2159:00 HRS = 11:00PM MARCH 31, 1983
 STABILITY CLASS : E
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 1.00E 00 | 4.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| NNE | 5.00E 00 | 6.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| NE | 0.00E-01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| ENE | 4.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| E | 7.00E 00 | 1.00E 00 | 1.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 1.00E 01 |
| ESE | 7.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 01 |
| SE | 4.00E 00 | 9.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.70E 01 |
| SSE | 9.00E 00 | 0.00E-01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 01 |
| S | 1.00E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.10E 01 |
| SSW | 9.00E 00 | 1.30E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.40E 01 |
| SW | 3.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 8.00E 00 |
| WSW | 4.00E 00 | 9.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| W | 3.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 8.00E 00 |
| WNW | 2.70E 01 | 7.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.50E 01 |
| NW | 2.40E 01 | 1.10E 01 | 5.00E 00 | 4.00E 00 | 1.00E 00 | 0.00E-01 | 4.50E 01 |
| NNW | 7.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.20E 01 |
| TOT | 1.24E 02 | 8.10E 01 | 2.10E 01 | 5.00E 00 | 1.00E 00 | 0.00E-01 | 2.32E 02 |

PERIODS OF CALM(HOURS): 4.400E 01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 1
 REPORT START TIME : 1:00 HRS = 01:00AM JANUARY 1, 1983
 REPORT END TIME : 2159:00 HRS = 11:00PM MARCH 31, 1983
 STABILITY CLASS : F
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| NNE | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| NE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| ENE | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| E | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| ESE | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| SE | 1.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| SSE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| S | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| SSW | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| SW | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| WSW | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| W | 0.00E-01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| WNW | 9.00E 00 | 7.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.60E 01 |
| NW | 2.70E 01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 01 |
| NNW | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| TOT | 6.60E 01 | 1.30E 01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 7.90E 01 |

PERIODS OF CALM(HOURS): 1.800E 01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 1
 REPORT START TIME : 1:00 HRS = 01:00AM JANUARY 1, 1983
 REPORT END TIME : 2159:00 HRS = 11:00PM MARCH 31, 1983
 STABILITY CLASS : G
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 1.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| NNE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| NE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| ENE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| E | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| ESE | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| SE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| SSE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| S | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| SSW | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| SW | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| WSW | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| W | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| WNW | 1.20E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.30E 01 |
| NW | 6.00E 01 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.40E 01 |
| NNW | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| TOT | 8.60E 01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 9.20E 01 |

PERIODS OF CALM(HOURS): 4.50E 01
 HOURS OF INVALID DATA : 0.00E-01
 HOURS OF GOOD DATA : 2.13E 03 = 99.0% OF TOTAL HOURS

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 PERIOD OF RECORD : EACH WIND SPEED AND DIRECTION
 REPORT START TIME : QUARTER # 2
 REPORT END TIME : 2161:00 HRS = 01:00AM APRIL 1, 1983
 STABILITY CLASS : 4343:00 HRS = 11:00PM JUNE 30, 1983
 ELEVATION : A
 : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 7.00E 00 | 1.80E 01 | 2.00E 00 | 1.00E 00 | 0.00E-01 | 1.00E 00 | 2.90E 01 |
| NNE | 1.00E 01 | 1.40E 01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 01 |
| NE | 4.00E 00 | 1.40E 01 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.30E 01 |
| ENE | 1.10E 01 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| E | 2.20E 01 | 9.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.10E 01 |
| ESE | 2.30E 01 | 4.10E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.60E 01 |
| SE | 4.00E 00 | 1.00E 01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.40E 01 |
| SSE | 6.00E 00 | 1.50E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.30E 01 |
| S | 6.00E 00 | 4.60E 01 | 1.70E 01 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 7.40E 01 |
| SSW | 2.00E 00 | 2.40E 01 | 1.70E 01 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 4.80E 01 |
| SW | 1.00E 00 | 1.30E 01 | 9.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 2.40E 01 |
| WSW | 2.00E 00 | 8.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.20E 01 |
| W | 1.00E 00 | 3.00E 00 | 3.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 1.00E 01 |
| WNW | 5.00E 00 | 1.80E 01 | 7.00E 00 | 1.00E 01 | 0.00E-01 | 1.00E 00 | 4.10E 01 |
| NW | 1.90E 01 | 2.50E 01 | 6.00E 00 | 6.00E 00 | 2.00E 00 | 1.00E 00 | 5.90E 01 |
| NNW | 1.50E 01 | 1.20E 01 | 1.20E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 4.10E 01 |
| TOT | 1.38E 02 | 2.74E 02 | 9.00E 01 | 3.30E 01 | 2.00E 00 | 3.00E 00 | 5.40E 02 |

PERIODS OF CALM(HOURS): 2.100E 01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 2
 REPORT START TIME : 2161:00 HRS = 01:00AM APRIL 1, 1983
 REPORT END TIME : 4343:00 HRS = 11:00PM JUNE 30, 1983
 STABILITY CLASS : B
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 2.00E 00 | 1.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| NNE | 5.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| NE | 3.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| ENE | 3.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 8.00E 00 |
| E | 1.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| ESE | 1.00E 00 | 1.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| SE | 2.00E 00 | 2.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| SSE | 2.00E 00 | 4.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 7.00E 00 |
| S | 1.00E 00 | 6.00E 00 | 3.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 1.20E 01 |
| SSW | 2.00E 00 | 9.00E 00 | 5.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 1.80E 01 |
| SW | 1.00E 00 | 4.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 8.00E 00 |
| WSW | 1.00E 00 | 0.00E-01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| W | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| WNW | 0.00E-01 | 0.00E-01 | 2.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| NW | 3.00E 00 | 3.00E 00 | 3.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 1.20E 01 |
| NNW | 4.00E 00 | 1.00E 00 | 2.00E 00 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 1.30E 01 |
| TOT | 3.10E 01 | 4.10E 01 | 2.50E 01 | 1.70E 01 | 0.00E-01 | 0.00E-01 | 1.14E 02 |

PERIODS OF CALM(HOURS): 3.000E 00
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 2
 REPORT START TIME : 2161:00 HRS = 01:00AM APRIL 1, 1983
 REPORT END TIME : 4343:00 HRS = 11:00PM JUNE 30, 1983
 STABILITY CLASS : C
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 0.00E-01 | 7.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.10E 01 |
| NNE | 2.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| NE | 0.00E-01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| ENE | 2.00E 00 | 7.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 9.00E 00 |
| E | 3.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 7.00E 00 |
| ESE | 2.00E 00 | 4.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 9.00E 00 |
| SE | 0.00E-01 | 1.30E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| SSE | 0.00E-01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| S | 6.00E 00 | 1.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.20E 01 |
| SSW | 1.00E 00 | 4.00E 00 | 7.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| SW | 1.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| WSW | 1.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| W | 1.00E 00 | 0.00E-01 | 1.00E 00 | 1.00E 00 | 0.00E-01 | 1.00E 00 | 4.00E 00 |
| WNW | 0.00E-01 | 1.00E 00 | 1.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| NW | 2.00E 00 | 2.00E 00 | 3.00E 00 | 8.00E 00 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| NNW | 4.00E 00 | 3.00E 00 | 8.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 1.80E 01 |
| TOT | 2.50E 01 | 5.70E 01 | 3.40E 01 | 1.70E 01 | 0.00E-01 | 1.00E 00 | 1.34E 02 |

PERIODS OF CALM(HOURS): 0.000E-01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 2
 REPORT START TIME : 2161:00 HRS = 01:00AM APRIL 1, 1983
 REPORT END TIME : 4343:00 HRS = 11:00PM JUNE 30, 1983
 STABILITY CLASS : D
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 3.00E 00 | 1.00E 01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.60E 01 |
| NNE | 6.00E 00 | 2.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.30E 01 |
| NE | 3.00E 00 | 2.00E 00 | 0.00E-01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 1.10E 01 |
| ENE | 8.00E 00 | 1.00E 01 | 4.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 2.40E 01 |
| E | 7.00E 00 | 5.00E 00 | 4.00E 00 | 5.00E 00 | 1.00E 00 | 0.00E-01 | 2.20E 01 |
| ESE | 4.00E 00 | 8.00E 00 | 8.00E 00 | 3.00E 00 | 2.00E 00 | 1.00E 00 | 2.60E 01 |
| SE | 1.70E 01 | 3.50E 01 | 1.20E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 6.50E 01 |
| SSE | 2.60E 01 | 2.90E 01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.10E 01 |
| S | 3.60E 01 | 5.60E 01 | 2.60E 01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.18E 02 |
| SSW | 2.10E 01 | 3.00E 01 | 1.80E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 7.10E 01 |
| SW | 8.00E 00 | 5.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.80E 01 |
| WSW | 3.00E 00 | 0.00E-01 | 2.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| W | 2.00E 00 | 3.00E 00 | 7.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| WNW | 1.10E 01 | 8.00E 00 | 5.00E 00 | 1.40E 01 | 0.00E-01 | 0.00E-01 | 3.80E 01 |
| NW | 4.00E 00 | 3.00E 00 | 1.10E 01 | 1.20E 01 | 1.00E 00 | 0.00E-01 | 3.10E 01 |
| NNW | 6.00E 00 | 1.30E 01 | 1.30E 01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 3.40E 01 |
| TOT | 1.65E 02 | 2.19E 02 | 1.29E 02 | 5.10E 01 | 4.00E 00 | 1.00E 00 | 5.69E 02 |

PERIODS OF CALM(HOURS): 3.000E 01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 2
 REPORT START TIME : 2161:00 HRS = 01:00AM APRIL 1, 1983
 REPORT END TIME : 4343:00 HRS = 11:00PM JUNE 30, 1983
 STABILITY CLASS : E
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 2.00E 00 | 6.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 01 |
| NNE | 3.00E 00 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| NE | 0.00E-01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| ENE | 1.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| E | 4.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| ESE | 1.40E 01 | 8.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.20E 01 |
| SE | 1.50E 01 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 01 |
| SSE | 2.30E 01 | 1.00E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.40E 01 |
| S | 2.10E 01 | 1.80E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 01 |
| SSW | 7.00E 00 | 1.90E 01 | 7.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.30E 01 |
| SW | 4.00E 00 | 8.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 | 1.30E 01 |
| WSW | 4.00E 00 | 3.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 1.00E 00 | 9.00E 00 |
| W | 7.00E 00 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 | 1.50E 01 |
| WNW | 3.00E 01 | 5.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 3.00E 00 | 3.90E 01 |
| NW | 1.00E 01 | 2.00E 00 | 1.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 1.50E 01 |
| NNW | 3.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| TOT | 1.48E 02 | 9.90E 01 | 1.40E 01 | 2.00E 00 | 0.00E-01 | 8.00E 00 | 2.71E 02 |

PERIODS OF CALM(HOURS): 3.900E 01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 2
 REPORT START TIME : 2161:00 HRS = 01:00AM APRIL 1, 1983
 REPORT END TIME : 4343:00 HRS = 11:00PM JUNE 30, 1983
 STABILITY CLASS : F
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| NNE | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| NE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| ENE | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| E | 3.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| ESE | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| SE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| SSE | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 00 |
| S | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| SSW | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| SW | 1.00E 00 | 2.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| WSW | 0.00E-01 | 0.00E-01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 3.00E 00 |
| W | 5.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 6.00E 00 |
| WNW | 1.60E 01 | 5.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.10E 01 |
| NW | 1.30E 01 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.40E 01 |
| NNW | 1.00E 00 | 0.00E-01 | 3.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 5.00E 00 |
| TOT | 5.20E 01 | 1.00E 01 | 7.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 7.00E 01 |

PERIODS OF CALM(HOURS): 2.400E 01
 HOURS OF INVALID DATA : 0.000E-01

REPORT CATEGORY : METEOROLOGICAL DATA. QUARTERLY TOTALS OF HOURS AT
 : EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD : QUARTER # 2
 REPORT START TIME : 2161:00 HRS = 01:00AM APRIL 1, 1983
 REPORT END TIME : 4343:00 HRS = 11:00PM JUNE 30, 1983
 STABILITY CLASS : G
 ELEVATION : 10 METERS

WIND SPEED(MPH) AT 10 METER LEVEL

| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | >24 | TOTAL |
|-----|----------|----------|----------|----------|----------|----------|----------|
| N | 0.00E-01 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 4.00E 00 |
| NNE | 6.00E 00 | 7.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.70E 01 |
| NE | 2.00E 00 | 1.00E 01 | 4.00E 00 | 1.00E 00 | 0.00E-01 | 0.00E-01 | 1.70E 01 |
| ENE | 6.00E 00 | 2.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.00E 01 |
| E | 4.00E 00 | 7.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.10E 01 |
| ESE | 0.00E-01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| SE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| SSE | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| S | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| SSW | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 |
| SW | 0.00E-01 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 2.00E 00 |
| WSW | 0.00E-01 | 9.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 9.00E 00 |
| W | 1.00E 00 | 5.00E 00 | 7.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.30E 01 |
| WNW | 2.60E 01 | 1.20E 01 | 5.00E 00 | 2.00E 00 | 0.00E-01 | 0.00E-01 | 4.50E 01 |
| NW | 3.10E 01 | 1.30E 01 | 6.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 5.00E 01 |
| NNW | 4.00E 00 | 6.00E 00 | 4.00E 00 | 0.00E-01 | 0.00E-01 | 0.00E-01 | 1.40E 01 |
| TOT | 8.00E 01 | 7.90E 01 | 3.20E 01 | 3.00E 00 | 0.00E-01 | 0.00E-01 | 1.94E 02 |

PERIODS OF CALM(HOURS): 1.700E 01
 HOURS OF INVALID DATA : 0.000E-01
 HOURS OF GOOD DATA : 2.026E 03 = 92.8% OF TOTAL HOURS

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

September 1, 1983

Hev Barr
J. W. Wray
Docket

Mr. James P. O'Reilly
Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 2900
Atlanta, Georgia 30303

Serial No. 484
NO/JHL:acm
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

Dear Mr. O'Reilly:

Enclosed is a summary report for the Radioactive Effluent Release Report for North Anna Power Station for the period January 1, 1983 to June 30, 1983. The complete Radioactive Effluent Release Report will be maintained at North Anna Power Station for your inspection.

Very truly yours,

W. L. Stewart
W. L. Stewart

Enclosure (2 copies)

cc: Mr. R. C. DeYoung, Director
Office of Inspection and Enforcement
Attn: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. M. B. Shymlock
NRC Resident Inspector
North Anna Power Station

DESIGNATED ORIGINAL
Certified By *[Signature]*

IE2511