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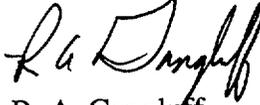
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U. S. Nuclear Regulatory Commission  
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Washington, DC 20555

South Texas Project  
Units 1 and 2  
Docket Nos. STN 50-498, STN 50-499  
Annual Radioactive Effluent Release Report for 2000

Pursuant to the South Texas Project Technical Specification 6.9.1.4 and 10CFR50.36a, attached is the Annual Radioactive Effluent Release Report for 2000. The report covers the period from January 1, 2000 to December 31, 2000.

If you have any questions on this matter, please contact Mr. K. W. Reynolds at (361) 972-3611 extension 6678 or me at (361) 972-7879.

  
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TE48

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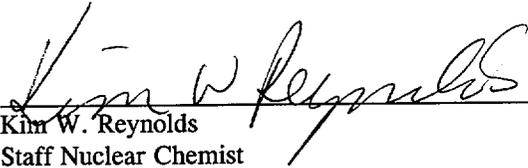
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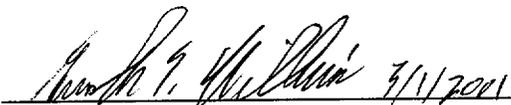
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**2000**  
**Annual Radioactive Effluent**  
**Release Report**

**SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION**

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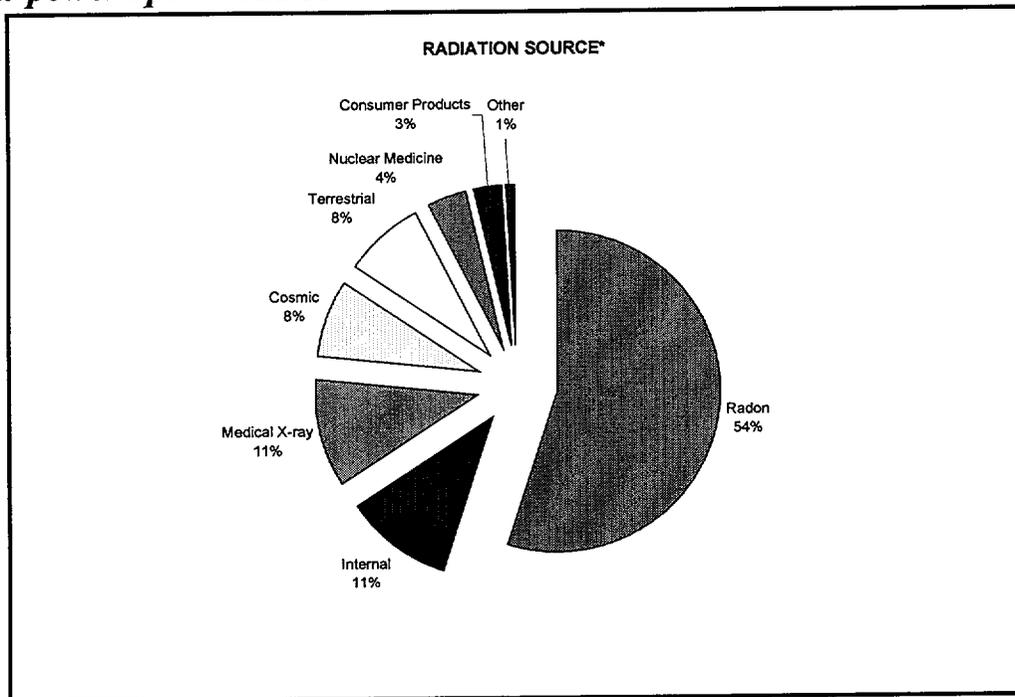
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## Report Summary

*During 2000, as in all previous years, operation of the South Texas Project created no adverse effects or health risks. The maximum radiation exposure calculated for a hypothetical person living at the boundary of the South Texas Project during 2000 due to operation of the South Texas Project was less than onemillirem. For reference, this dose may be compared to the average annual radiation exposure of 360 millirem to people in the United States from all sources. Natural radiation sources in the environment contribute most of the radiation exposure to people; nuclear power operations contribute less than onemillirem.*



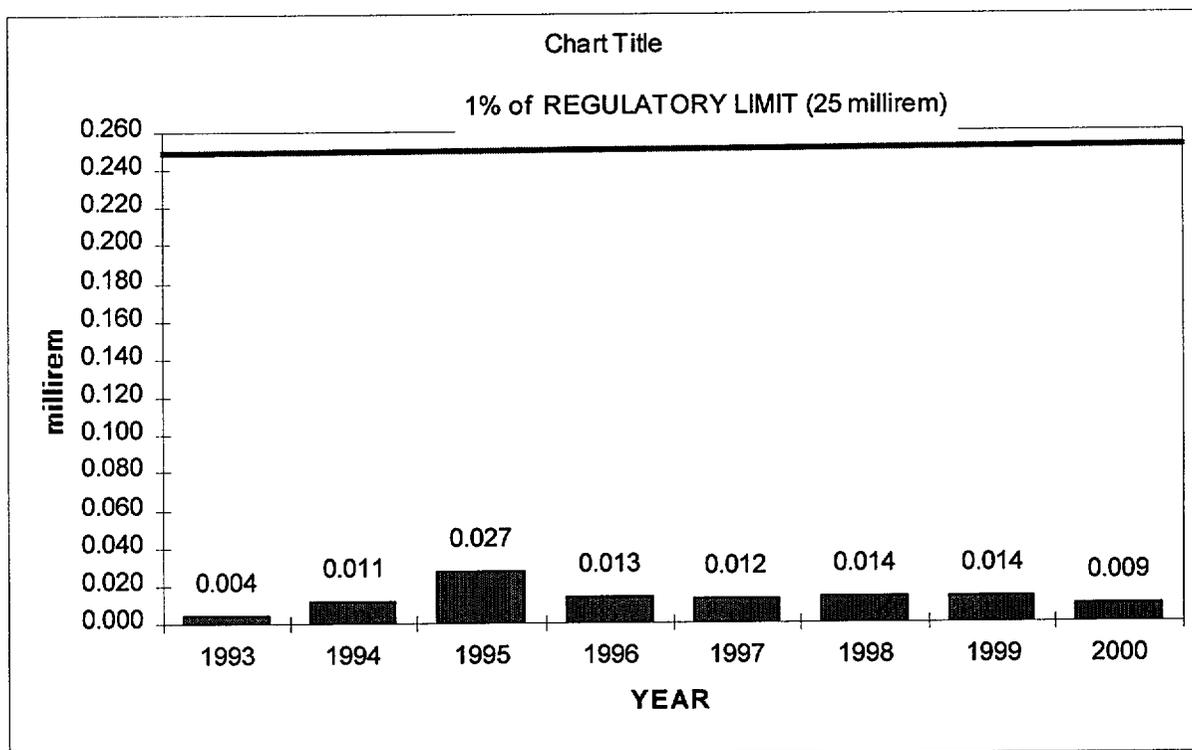
\*NCRP (1987). National Council on Radiation Protection and Measurements, *Ionizing Radiation Exposure of the Population of the United States*, (Bethesda, Maryland), NCRP Report No. 93.

During 2000, the total body dose to the most exposed individual from radioactive effluents and direct radiation was 0.01 millirem. This total represents approximately 0.04% of the limits of 40 C.F.R. §190. This theoretical individual, an adult, resides in the North by North-West Sector, approximately 5,600 meters (3.5 miles) from the site. For dose calculating purposes, this theoretical individual is characterized as the most exposed with regard to food consumption, occupancy, and other uses of the areas in the plant vicinity. This theoretical individual is not a real person and the dose model assumes that this theoretical individual may consume the

maximum amount of food with all the food being grown or grazed at the residence. This theoretical individual receives shoreline exposure from Little Robbins Slough for 12 hours per year and consumes 21 kilograms (48 pounds) of fish taken from Little Robbins Slough. This theoretical individual receives a submersion dose from noble gases and dose from inhaled radioactive particulates, radioiodines, and tritium. This adult consumes 64 kilograms (150 pounds) of vegetables grown at the residence and consumes 110 kilograms (250 pounds) of meat grazed at the residence.

Releases to the environment at the South Texas Project Electric Generating Station have historically been and continue to be well below regulatory limits as shown in the following table. Members of the public received negligible additional radiation due to the operation of the South Texas Project. This Annual Radioactive Effluent Release Report summarizes the data describing the radioactive liquid and gaseous releases from the South Texas Project Electric Generating Station during 2000. The radioactive effluents from the South Texas Project are effectively monitored and controlled in accordance with regulatory requirements.

THEORETICAL TOTAL BODY DOSE FOR ALL PATHWAYS



Liquid and gaseous discharges from the South Texas Project are continuously monitored for radioactive content. Samples are also collected from ventilation systems and liquid discharges and analyzed for radioactivity. The sample and analysis methods are verified and augmented using an environmental laboratory. Radioactivity monitors continuously sample the ventilation exhaust systems. On the liquid discharge lines, radioactivity monitors automatically divert or isolate liquid

effluents if the radioactivity is higher than expected. These monitors are also equipped with remote alarm indications in the control rooms and health physics offices.

The radiation monitors, and the sampling and analysis program, provide an accurate determination of the type and quantity of radioactive materials released in plant effluents. Liquid effluents are directed to the Main Cooling Reservoir that is located entirely within the site boundary. The South Texas Project continues to aggressively pursue the reduction of radioactive material in liquid effluents consistent with prudent industry practices.

Each year, the effluent monitoring results are summarized in this report and a hypothetical radiation dose to the population in the surrounding area is calculated based on gaseous radioactive effluents, meteorological conditions and liquid radioactive effluents. The hypothetical dose assumes all credible paths for radioactivity to reach a member of the public, such as consumption of vegetables from a garden, fish from the river, inhalation, and direct exposure. The highest potential hypothetical dose to an individual at the site boundary was calculated to be less than 1 millirem which is significantly less than an average person receives from natural sources annually. The information presented in this report demonstrates that plant operation is consistently controlled to ensure that radioactive effluents remain below regulatory limits and to ensure protection of the public and the environment.

## INTRODUCTION

This Annual Radioactive Effluent Release Report is submitted for the period January 1, 2000, through December 31, 2000, in accordance with Appendix A of License Nos. NPF-76 and NPF-80, Technical Specifications and the Offsite Dose Calculation Manual.

A single submittal is made for both units combining those sections that are common. Separate tables of releases and release totals are included where separate processing systems exist.

This report includes an annual summary of hourly meteorological measurements taken during each quarter. This data appears as tables of wind direction and wind speed by atmospheric stability class. All assessments of radiation doses are performed in accordance with the Offsite Dose Calculation Manual.

Minimal quantities of radioactivity were released during 2000. Liquid effluents are discharged to the on-site Main Cooling Reservoir and subsequently released offsite. The radioactivity released in liquids beyond the site boundary was estimated using the South Texas Project Electric Generating Station Offsite Dose Calculation Manual. Solid radioactive waste is shipped offsite for disposal. The following table is a brief summary of the radioactive effluents and solid waste attributable to the station.

TYPE OF RADIOACTIVE MATERIAL	EFFLUENT TYPE	DESTINATION	VOLUME CUBIC METER	CURIES
NOBLE GAS	GAS	OFFSITE	6.0E+09	4.7E+2
PARTICULATE AND IODINES	GAS	OFFSITE	6.0E+09	1.9E-03
TRITIUM	GAS	OFFSITE	6.0E+09	5.0E+01
TRITIUM	LIQUID	OFFSITE	4.8E+06	1.6E+02
FISSION AND ACTIVATION PRODUCTS	LIQUID	OFFSITE	4.8E+06	1.6E-03
TRITIUM	LIQUID	ON-SITE	4.6E+04	1.3E+03
FISSION AND ACTIVATION PRODUCTS <sup>(1)</sup>	LIQUID	ON-SITE	4.6E+04	3.2E-01
SPENT RESINS AND FILTERS	SOLID	FOR BURIAL	4.0E+01	3.5E+02
DRY COMPRESSIBLE WASTE	SOLID	FOR BURIAL	2.6E+02	5.3E+00
OTHER WASTE (SECONDARY RESIN AND FILTER CAKE)	SOLID	FOR BURIAL	2.2E+02	2.0E-04

<sup>(1)</sup>Excludes 1.4 curies of dissolved and entrained gases.

Tritium accounted for the largest fraction of the radioactive effluents both liquid and gaseous. Tritium was the largest contributor to the offsite doses from radioactive effluents. The offsite doses are well below any regulatory limit and significantly less than the average annual radiation exposure to people in the United States from all sources (360 millirem).

## **Supplemental Information for Effluent and Waste Disposal**

## Supplemental Information for Effluent and Waste Disposal

The South Texas Project Electric Generating Station is located on 49,800,000 square meters (12,300 acres) in Matagorda County, Texas, approximately 24,000 meters (15 miles) southwest of Bay City along the west bank of the Colorado River. The South Texas Project is jointly owned by Reliant Energy HL&P, Central Power & Light Company, the City of Austin, and the City of San Antonio. Until late 1997, Reliant Energy HL&P was the designated licensee for the owners. On November 14, 1997, the station owners changed the licensee to STP Nuclear Operating Company which is responsible for implementation of the Radioactive Effluent Control Program.

The South Texas Project Electric Generating Station consists of two 1,250 megawatt-electric Westinghouse pressurized water reactors. Unit 1 received a low-power testing license on August 21, 1987, obtained initial criticality on March 8, 1988, and was declared commercially operational on August 25, 1988. Unit 2 received a low-power testing license on December 16, 1988, obtained initial criticality on March 12, 1989, and was declared commercially operational on June 19, 1989. Both units together produce enough electricity to serve half-a-million homes.

### Regulatory Limits

#### Fission and Activation Gases

The **air dose** due to noble gases released in gaseous effluents from each unit to areas at and beyond the Site Boundary shall be limited to the following:

During any calendar quarter: Less than or equal to 5 millirads for gamma radiation and less than or equal to 10 millirads for beta radiation, and

During any calendar year: Less than or equal to 10 millirads for gamma radiation and less than or equal to 20 millirads for beta radiation.

#### Iodines and Particulates, Half-Lives > 8 days

The **dose** to a Member of the Public from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released, from each unit, to areas at and beyond the Site Boundary shall be limited to the following:

During any calendar quarter: Less than or equal to 7.5 millirems to any organ; and

During any calendar year: Less than or equal to 15 millirems to any organ.

#### Liquid Effluents

The **dose or dose commitment** to a Member of the Public from radioactive materials in liquid effluents released from each unit to Unrestricted Areas shall be limited to:

During any calendar quarter: Less than or equal to 1.5 millirems to the whole body and to less than or equal to 5 millirems to any organ; and

During any calendar year: Less than or equal to 3 millirems to the whole body and to less than or equal to 10 millirems to any organ.

**Effluent Concentrations Limits**

**Gaseous Effluents**

The **dose rate** due to radioactive materials released in gaseous effluents from the site to areas at and beyond the Site Boundary shall be limited to the following:

For noble gases: Less than or equal to 500 millirems/year to the whole body and less than or equal to 3000 millirems/year to the skin; and

For Iodine-131, Iodine-133, tritium and all radionuclides in particulate form with half-lives greater than eight days: Less than or equal to 1500 millirems/year to any organ.

**Liquid Effluents**

The concentration of radioactive material released in liquid effluents to Unrestricted Areas shall be limited to 10 times the concentrations specified in 10CFR, Part 20, Appendix B, Table II, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2.0E-04 microcurie/milliliter total activity.

**Average Energy (Million Electron Volts/Disintegration)**

The **Average Energy** (or E-bar) shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration for the isotopes other than Iodines, with half-lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant. The following average energy values are based on grab sample analyses from both reactor coolant systems with Unit 1 being collected during October of 2000 and with Unit 2's sample being collected during November of 2000.

E-bar (Million Electron Volts/Disintegration)	<u>0.129</u> *	Unit 1
	<u>0.163</u> *	Unit 2

\* Includes tritium

The average energy (E-bar) values of the radionuclide mixture in gaseous releases of fission and activation gases are based on noble gases released during the reporting period.

E-bar (Million Electron Volts/Disintegration)	<u>0.120</u>	Unit 1
	<u>0.693</u>	Unit 2

## Measurement and Approximations of Total Activity

The following discussions detail the methods used to measure and approximate total activity for the following:

Gaseous Effluents: Fission and Activation Gases, Iodines and Particulates  
Liquid Effluents

Tables A3-1 and A4-1 of the South Texas Project Electric Generating Station Offsite Dose Calculation Manual give sampling frequencies and lower limit of detection requirements for the analysis of liquid and gaseous effluent streams.

### Gaseous Effluents

#### Analytical Methods For Batch Gaseous Releases

Monthly pre-release grab samples are collected from the plant Reactor Containment Building atmosphere. These samples are analyzed on a Gamma Spectroscopy System utilizing high purity germanium detectors for noble gas, iodine and particulate activity. Tritium specific radioactivities are measured using Liquid Scintillation Counting techniques.

The radionuclide concentrations obtained are used in conjunction with the gross noble gas release rate monitoring data collected by the radiation monitoring system to estimate the release rate of each radionuclide in the effluent streams. The noble gas release rate data collected by the unit vent radiation monitor is quantified and reported as continuous mode of release. The data from the unit vent radiation monitor in conjunction with the grabs sample results of the Reactor Containment Building atmosphere are used to quantify the radioactivity released.

#### Analytical Methods For Continuous Gaseous Releases

Periodic noble gas and tritium grab samples are taken from the continuous release points such as the Unit Vent. Periodic tritium grab samples are used for quantifying secondary steam releases. Continuous sampling for particulates and iodine is also performed on the effluent streams. These samples are analyzed for tritium and gamma radionuclides, as described above for batch releases. Strontium-89, Strontium-90, and gross alpha analyses were performed by the on-site Radiological Services Laboratory.

Using noble gas grab sample results and the gross noble gas release rate monitor, the noble gases in effluent streams are quantified by the plant radiation monitoring system.

### Liquid Effluents

#### Analytical Methods For Liquid Releases

Liquid effluents that are processed by the liquid waste processing system are released as batches. Liquid effluents resulting from primary to secondary leakage or other plant

operations are tracked as continuous releases. For batch releases, representative pre-release grab samples are taken and analyzed in accordance with Table A3-1 of the Offsite Dose Calculation Manual. For continuous releases, representative samples are collected weekly and analyzed. Radionuclide analyses are performed using a Gamma Spectroscopy System. Aliquots of each pre-release batch sample and of representative samples for continuous releases are composited in accordance with the requirements in Table A3-1 of the Offsite Dose Calculation Manual. Tritium concentrations are determined using Liquid Scintillation Counting techniques. Dissolved and entrained gas concentrations are determined by counting grab samples on the Gamma Spectroscopy System. Strontium-89, Strontium-90, gross alpha, and Iron-55 determinations are performed by the on-site Radiological Services Laboratory. The radionuclide concentrations obtained are used with the total volume for each batch release.

### **Batch Releases**

Liquid and gaseous summaries are compiled from permits generated using computer-based effluent management system and plant procedures. Liquid batch releases are accounted for by individual permits. Gaseous batch releases are accounted for by monthly permits and consist of reactor containment purges for the purpose of reducing radioactivity concentrations. Batch times represent the actual period of releases and the periods that the purge valves were open.

### **Liquid (Unit 1)**

<b>Liquid (Unit 1)</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
a. Number of batch releases	39	41	18	11
b. Total time period for batch releases (minutes)	2420	2502	1100	688
c. Maximum time period for a batch release (minutes)	71	68	67	70
d. Average time period for batch releases (minutes)	62	61	61	63
e. Minimum time period for a batch release (minutes)	45	44	50	49

Gaseous (Unit 1)

<b>Gaseous (Unit 1)</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
a. Number of batch releases	31	14	1	0
b. Total time period for batch releases (minutes)	54399	60326	74	0
c. Maximum time period for a batch release (minutes)	17810	21790	74	0
d. Average time period for batch releases (minutes)	1755	4309	74	0
e. Minimum time period for a batch release (minutes)	49	68	74	0

Liquid (Unit 2)

<b>Liquid (Unit 2)</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
a. Number of batch releases	20	17	18	38
b. Total time period for batch releases (minutes)	1399	1188	1328	2767
c. Maximum time period for a batch release (minutes)	81	82	79	81
d. Average time period for batch releases (minutes)	70	70	74	73
e. Minimum time period for a batch release (minutes)	49	49	44	4

Gaseous (Unit 2)

<b>Gaseous (Unit 2)</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
a. Number of batch releases	0	1	0	0
b. Total time period for batch releases (minutes)	0	137	0	0
c. Maximum time period for a batch release (minutes)	0	137	0	0
d. Average time period for batch releases (minutes)	0	137	0	0
e. Minimum time period for a batch release (minutes)	0	137	0	0

**Abnormal (Unplanned) Releases**

No abnormal releases occurred during this reporting period.

**Estimate of Total Error**

### Estimate of Error for Liquid Effluents

The **maximum error** associated with volume and flow measurements, based upon plant calibration practice, is estimated to be  $\pm 1.27\%$ . The error associated with the flow measurement is small in relation to the counting uncertainty of the radionuclide concentration analysis.

The **average uncertainty** associated with counting measurements is 10% or less at the 95% confidence level.

The **error** associated with dilution volume is estimated to be  $\pm 10\%$ .

Estimate of Error for Gaseous Effluents

The **maximum error** associated with monitor readings, sample flow, vent flow, sample collection, monitor calibration and laboratory procedures are collectively estimated to be:

Fission and Activation Gases Low Activity (less than 10 microcurie per second)	$\pm 100\%$
Fission and Activation Gases High Activity (greater than or equal to 10 microcurie per second)	$\pm 20\%$
Iodines	$\pm 25\%$
Particulates	$\pm 25\%$
Tritium	$\pm 50\%$

The **average uncertainty** associated with counting measurements is 10% or less at the 95% confidence level for fission and activation gases, iodines, particulates and tritium.

Estimate of Error for Solid Radioactive Waste

The **error** associated in determining the volume of solid radioactive waste shipments is estimated to be  $\pm 1\%$ . The **error** associated in determining the filter media, spent primary resins, and spent secondary resins radioactivity is estimated to be within a factor of two of the real value and is due primarily to waste stream sampling uncertainty. The **error** associated in determining the radioactivity of other solid radioactive waste shipments is estimated to be within a factor of three of the real value.

Solid Waste Shipments

A total of twenty-seven shipments of radioactive filter media, spent resins, dry active and other wastes were made during the reporting period. A summary of the data is provided in the Section 6, Solid Waste and Irradiated Fuel Shipments.

Radiological Impact on Man

The data for the period January 1, 2000, through December 31, 2000, is provided in the Dose Accumulation (Section 7) and the Summary of Direct Radiation Table 8-1 (Section 8). The following dilution factors and dilution water flows were used for assessing the radiation doses due to radioactive liquid effluents released to unrestricted areas.

Receptor Location	ODCM <sup>(1)</sup> Dilution Factor	Dilution Water Flow Cubic Feet/Second	Dilution Water Flow Liters/Year	Dilution Water Flow Liters/Quarter
Colorado River	1.00E+00	6.00E+02	5.36E+11	1.34E+11
Matagorda Bay	1.63E+02	9.78E+04	8.73E+13	2.18E+13
Little Robbins Slough Area	3.05E-02	1.83E+01	1.63E+10	4.08E+09

<sup>(1)</sup> Offsite Dose Calculation Manual factor

The dilution water flow used to estimate the individual dose due to ingestion of saltwater fish and saltwater invertebrates (shrimp) harvested from the Colorado River was 5.36E+11 liters per year for the years of 1989 through 2000. The dilution water flow used to estimate the individual dose due to ingestion of saltwater fish and saltwater invertebrates harvested from the Matagorda Bay was 8.73E+13 liters per year for the years of 1993 through 2000 as the result of a diversion channel that routes the Colorado River into Matagorda Bay. The dilution water flow used to estimate the individual dose due to ingestion of freshwater fish from the Little Robbins Slough Area was 1.63E+10 liters per year for the years 1989 through 2000. These dilution water flows were also used for estimating individual dose due to shoreline deposits. The radioactivity reported in the Liquid Effluent tables is the amount released to the Main Cooling Reservoir and does not contribute to dose until the radioactivity is released to unrestricted areas. In order to estimate the doses due to liquid effluents, the radioactivity reported must be adjusted by the values listed in the Offsite Dose Calculation Manual, Table B4-1, "Radionuclide Fraction Leaving STPEGS Via Liquid Routes".

### Meteorological Data

The **2000 meteorological data** is presented in the form of joint frequency tables. Each quarter contains eight tables, one for each stability class and one for all classes combined.

A second set of joint frequency tables is provided for time periods when the gaseous effluent release rate was higher than background levels. Typical noble gas release rates seldom exceed 30 microcurie per second. These tables contain meteorological conditions during periods when the noble gas release rate exceeded 30 microcurie per second, which typically occurs during releases from the Reactor Containment Building. Most of the radioactivity released is quantified by the unit vent noble gas radiation monitor and is reported in the continuous mode rather the batch mode. If the unit vent radiation monitoring system does not account for the estimated total radioactivity released the estimated amount based on the batch release is reported in batch mode. No batches are reported for the fourth quarter since no unusual releases were observed.

## Lower Limit of Detection

The **Lower Limit of Detection** (an a priori limit) is defined as the smallest concentration of radioactive material in a sample that will yield a net count above system background that will be detected with 95% probability, and only a 5% probability of falsely concluding that a blank observation represents a "real" signal. A zero (0) value in the attached tables indicates no activity detected.

## Dose to Member of the Public

### Dose to Member of the Public from Direct Radiation

The Offsite Dose Calculation Manual includes the direct radiation from plant structures as a component to the dose to a hypothetical, highest exposed Member of the Public located off site due to plant operations. The only source of plant related direct radiation in 2000 originated from radioactive waste storage tanks south of Units 1 and 2 and the movement of radioactive waste in the same area. No dose due to direct radiation in 2000 was delivered to a Member of the Public located off site.

The Offsite Dose Calculation Manual allows measurements made near the plant structures to be used in these calculations following suitable adjustments for distance and exposure time. In 2000, numerous Thermoluminescent Dosimeters were placed along the protected area fence surrounding Units 1 and 2 of the South Texas Project as pictured in Figure 8-1 of Section 8. The results of these measurements are summarized in Table 8-1 of Section 8. The table shows that in 2000 two Thermoluminescent Dosimeter stations measured more exposure than typical of natural background determined prior to operation in the vicinity of the South Texas Project. These two measurements were on the south side of the protected area. Since no other dosimeters indicated exposure above natural background, only individuals south of the plant would be exposed. However, the reservoir embankment acts as a shield and blocks radiation directed south of the units from reaching any offsite person.

Hence no dose due to direct radiation in 2000 was delivered to a Member of the Public located off site.

A Member of the Public on site, but outside the protected area fence, could not have received more than about 1.6 millirem of direct radiation as calculated below (most exposed individual):

$$\text{direct radiation dose} = 0.00079 \text{ mR/hour} * 1 \text{ mrem/mR} * 2000 \text{ hours/year}$$

$$\text{direct radiation dose} = 1.6 \text{ mrem/year}$$

Where: mR = milliroentgen, a unit of exposure for X and gamma rays.

### Dose to Member of the Public from Radioactive Effluents

During 2000, the total body dose to the most exposed individual from radioactive effluents and direct radiation was 0.01 millirem. This total represents approximately 0.04% of the limits of 40 C.F.R. §190. This theoretical individual, an adult, resides in the North by North-West Sector, approximately 5,600 meters (3.5 miles) from the site. For dose calculating purposes, this theoretical individual is characterized as the most exposed with regard to food consumption, occupancy, and other uses of the areas in the plant vicinity. This theoretical individual is not a real person and the dose model assumes that this theoretical individual may consume the maximum amount of food with all the food being grown or grazed at the residence. This theoretical individual receives shoreline exposure from Little Robbins Slough for 12 hours per year and consumes 21 kilograms (48 pounds) of fish taken from Little Robbins Slough. This theoretical individual receives a submersion dose from noble gases and dose from inhaled radioactive particulates, radioiodines, and tritium. This adult consumes 64 kilograms (150 pounds) of vegetables grown at the residence and consumes 110 kilograms (250 pounds) of meat grazed at the residence.

A hypothetical Member of the Public outside the protected area fence but inside the site boundary could receive approximately 0.13 millirem from radioactive effluents due to inhalation and immersion. This dose plus the direct radiation dose would yield 1.7 millirem, a small fraction of 10 C.F.R. §20.1301 annual limit.

### **Sewage Sludge Land Farming**

Sewage sludge removed from the West Sanitary Waste Treatment System was beneficially land applied onsite during 2000. This beneficial land application is not an radioactive effluent and is reported for documenting this activity. The amount of radioactivity contained in the sludge was 5 microcuries of Cobalt-60. In accordance with Texas Natural Resource Conservation Commission Registration No. 710645, the sludge is incorporated into the soil after application. A soil sample collected from the area in November 2000 indicated no activity above background, confirming that the concentration in the soil is below the limits established in Title 25 of the Texas Administrative Code Section 289.202 (ddd).

**Technical Specifications and Offsite Dose Calculation Manual  
Controls Reporting Requirements**

**Offsite Dose Calculation Manual Changes (reference, Technical Specifications, 6.13)**

There were no changes to the Offsite Dose Calculation Manual during this reporting period.

**Annual Land Use Census (reference, Offsite Dose Calculation Manual Controls, 3.12.2.a)**

The Land Use Census did not identify any new locations for dose calculations.

**Radioactive Waste Treatment System Design Modification Description (reference, Offsite Dose Calculation Manual Controls, 6.15)**

No major design modifications were made to the gaseous, liquid, or solid radioactive waste treatment systems during this reporting period.

**Inoperable Effluent Monitoring Instrumentation Explanation (reference, Offsite Dose Calculation Manual Controls, 6.9.1.4)**

For 2000, inoperable liquid effluent monitoring instruments were corrected within the time specified in Sections 3.3.3.10 of Offsite Dose Calculation Manual Controls.

For 2000, inoperable gaseous effluent monitoring instruments were corrected within the time specified in Sections 3.3.3.11 of Offsite Dose Calculation Manual Controls.

**Gas Storage Tank Curie Limit Violation Description (reference, Offsite Dose Calculation Manual Controls, 6.9.1.4)**

The Reactor Coolant System Vacuum Degassing System was not used during this reporting period. Therefore, the quantity of radioactive material in the Reactor Coolant System Vacuum Degassing System Storage Tanks did not exceed the limits set forth in Section 3.11.2.6 of Technical Specifications.

**Unprotected Outdoor Tank Curie Limit Violation Description (reference, Offsite Dose Calculation Manual Controls, 6.9.1.4)**

There are no Unprotected Outdoor Tanks at South Texas Project Electric Generating Station.

**Abnormal (Unplanned) Release Description (reference, Offsite Dose Calculation Manual, 6.9.1.4)**

No abnormal (unplanned) releases occurred during this reporting period.

**Radioactive Waste Process Control Program Changes (reference, Technical Specifications, 6.13)**

There were no changes to the Radioactive Waste Process Control Program during this reporting period.

## **GASEOUS EFFLUENTS**

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL AIRBORNE EFFLUENTS**

**Unit: 1**

Starting : 1-Jan-2000    Ending : 30-Jun-2000

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE	CURIES	1.878E+02	1.119E+02	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.388E+01	1.424E+01	
3. PERCENT OF LIMIT (2.70E+05 uCi/sec)	%	8.684E-03	5.177E-03	
<b>B. RADIOIODINES</b>				
1. TOTAL IODINE-131 + IODINE-133	CURIES	1.212E-03	8.879E-05	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.542E-04	1.129E-05	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	3.855E-01	2.823E-02	
<b>C. PARTICULATES</b>				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	3.718E-04	1.095E-04	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	4.729E-05	1.392E-05	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	1.576E-02	4.641E-03	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.000E+00	1.407E-07	
<b>D. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	5.720E+00	3.877E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	7.275E-01	4.931E-01	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	4.042E-04	2.740E-04	

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 1

REPORT CATEGORY: SEMIANNUAL AIRBORNE GROUND LEVEL  
CONTINUOUS AND BATCH RELEASES. TOTALS  
FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: FISSION GASES, IODINES, AND PARTICULATES

REPORTING PERIOD: QUARTER # 1 AND QUARTER # 2 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
Argon-41	CURIES	9.43E-01	6.56E-03	0.00E+00	2.03E-08
Krypton-85m	CURIES	2.08E-01	0.00E+00	0.00E+00	0.00E+00
Krypton-88	CURIES	2.83E-02	0.00E+00	0.00E+00	0.00E+00
Xenon-131m	CURIES	9.83E-01	0.00E+00	0.00E+00	0.00E+00
Xenon-133	CURIES	1.81E+02	1.12E+02	0.00E+00	4.05E-07
Xenon-133m	CURIES	1.45E+00	6.68E-03	0.00E+00	5.54E-09
Xenon-135	CURIES	3.56E+00	4.80E-04	0.00E+00	2.29E-09
TOTAL FOR PERIOD	CURIES	1.88E+02	1.12E+02	0.00E+00	4.33E-07
IODINES					
Iodine-131	CURIES	8.48E-04	6.62E-05	3.18E-04	2.26E-05
Iodine-133	CURIES	4.59E-05	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	8.94E-04	6.62E-05	3.18E-04	2.26E-05
PARTICULATES					
Cerium-143	CURIES	0.00E+00	0.00E+00	1.99E-09	9.03E-08
Cobalt-57	CURIES	0.00E+00	0.00E+00	1.61E-07	1.04E-07
Cobalt-58	CURIES	9.37E-05	2.51E-05	7.95E-06	0.00E+00
Cobalt-60	CURIES	2.74E-05	6.50E-06	4.98E-08	2.26E-06
Chromium-51	CURIES	1.57E-04	0.00E+00	1.79E-05	1.46E-05
Cesium-134	CURIES	0.00E+00	0.00E+00	9.95E-09	4.52E-07
Cesium-137	CURIES	0.00E+00	0.00E+00	7.96E-08	3.61E-06
Iron-59	CURIES	7.09E-06	0.00E+00	4.47E-06	4.86E-07
Manganese-54	CURIES	1.30E-05	1.98E-06	5.18E-06	2.15E-05
Niobium-95	CURIES	2.59E-05	2.35E-06	2.99E-07	1.52E-05
Zirconium-95	CURIES	1.16E-05	0.00E+00	2.99E-07	1.53E-05
TOTAL FOR PERIOD	CURIES	3.35E-04	3.59E-05	3.64E-05	7.36E-05
OTHER					
Gross Alpha	CURIES	0.00E+00	1.41E-07	0.00E+00	0.00E+00

Hydrogen-3 (Tritium)	CURIES	5.34E+00	3.44E+00	3.81E-01	4.33E-01
TOTAL FOR PERIOD	CURIES	5.34E+00	3.44E+00	3.81E-01	4.33E-01

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL AIRBORNE EFFLUENTS**

**Unit: 1**

Starting : 1-Jul-2000    Ending : 31-Dec-2000

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE	CURIES	3.908E+00	8.954E+01	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	4.916E-01	1.126E+01	
3. PERCENT OF LIMIT (2.70E+05 uCi/sec)	%	1.788E-04	4.096E-03	
<b>B. RADIOIODINES</b>				
1. TOTAL IODINE-131 + IODINE-133	CURIES	3.937E-05	1.021E-04	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	4.953E-06	1.284E-05	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	1.238E-02	3.210E-02	
<b>C. PARTICULATES</b>				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	1.596E-06	0.000E+00	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.007E-07	0.000E+00	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	6.691E-05	0.000E+00	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.000E+00	0.000E+00	
<b>D. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	8.834E+00	1.312E+01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.111E+00	1.650E+00	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	6.175E-04	9.168E-04	

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 1

REPORT CATEGORY: SEMIANNUAL AIRBORNE GROUND LEVEL  
CONTINUOUS AND BATCH RELEASES. TOTALS  
FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: FISSION GASES, IODINES, AND PARTICULATES

REPORTING PERIOD: QUARTER # 3 AND QUARTER # 4 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
Argon-41	CURIES	8.27E-02	8.49E-02	0.00E+00	2.09E-08
Xenon-131m	CURIES	6.63E-03	0.00E+00	0.00E+00	0.00E+00
Xenon-133	CURIES	3.82E+00	8.94E+01	0.00E+00	6.51E-08
Xenon-135	CURIES	1.76E-03	2.70E-03	0.00E+00	1.09E-09
TOTAL FOR PERIOD	CURIES	3.91E+00	8.95E+01	0.00E+00	8.72E-08
IODINES					
Iodine-131	CURIES	9.24E-06	5.04E-05	0.00E+00	0.00E+00
Iodine-133	CURIES	3.01E-05	5.17E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.94E-05	1.02E-04	0.00E+00	0.00E+00
PARTICULATES					
Cobalt-58	CURIES	5.66E-07	0.00E+00	0.00E+00	0.00E+00
Cobalt-60	CURIES	1.03E-06	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.60E-06	0.00E+00	0.00E+00	0.00E+00
OTHER					
Hydrogen-3 (Tritium)	CURIES	8.83E+00	1.31E+01	0.00E+00	1.93E-07
TOTAL FOR PERIOD	CURIES	8.83E+00	1.31E+01	0.00E+00	1.93E-07

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL AIRBORNE EFFLUENTS**

**Unit: 2**

Starting : 1-Jan-2000    Ending : 30-Jun-2000

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE	CURIES	1.353E+01	1.640E+01	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.721E+00	2.085E+00	
3. PERCENT OF LIMIT (2.70E+05 uCi/sec)	%	6.260E-04	7.583E-04	
<b>B. RADIOIODINES</b>				
1. TOTAL IODINE-131 + IODINE-133	CURIES	6.536E-07	9.145E-07	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	8.313E-08	1.163E-07	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	2.078E-04	2.908E-04	
<b>C. PARTICULATES</b>				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	1.357E-06	6.561E-06	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.725E-07	8.344E-07	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	5.751E-05	2.781E-04	
4. GROSS ALPHA RADIOACTIVITY	CURIES	1.889E-07	0.000E+00	
<b>D. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	2.290E+00	4.094E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.913E-01	5.206E-01	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	1.618E-04	2.892E-04	

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 2

REPORT CATEGORY: SEMIANNUAL AIRBORNE GROUND LEVEL  
CONTINUOUS AND BATCH RELEASES. TOTALS  
FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: FISSION GASES, IODINES, AND PARTICULATES

REPORTING PERIOD: QUARTER # 1 AND QUARTER # 2 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
Argon-41	CURIES	9.27E-02	1.12E-01	2.91E-08	1.18E-02
Xenon-133	CURIES	1.34E+01	1.63E+01	0.00E+00	1.65E-03
TOTAL FOR PERIOD	CURIES	1.35E+01	1.64E+01	2.91E-08	1.34E-02
IODINES					
Iodine-131	CURIES	6.54E-07	9.14E-07	0.00E+00	0.00E+00
Iodine-133	CURIES				
TOTAL FOR PERIOD	CURIES	6.54E-07	9.14E-07	0.00E+00	0.00E+00
PARTICULATES					
Cobalt-58	CURIES	1.36E-06	2.74E-06	0.00E+00	0.00E+00
Cobalt-60	CURIES	0.00E+00	3.82E-06	0.00E+00	0.00E+00
Cesium-134	CURIES	2.73E-10	0.00E+00	0.00E+00	0.00E+00
Cesium-137	CURIES	2.22E-10	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.36E-06	6.56E-06	0.00E+00	0.00E+00
OTHER					
Gross Alpha	CURIES	1.89E-07	0.00E+00	0.00E+00	0.00E+00
Hydrogen-3 (Tritium)	CURIES	2.29E+00	4.08E+00	1.35E-09	0.00E+00
TOTAL FOR PERIOD	CURIES	2.29E+00	4.08E+00	1.35E-09	8.57E-03

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL AIRBORNE EFFLUENTS**

**Unit: 2**

Starting : 1-Jul-2000    Ending : 31-Dec-2000

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE	CURIES	1.523E+01	2.782E+01	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.916E+00	3.500E+00	
3. PERCENT OF LIMIT (2.70E+05 uCi/sec)	%	6.968E-04	1.273E-03	
<b>B. RADIOIODINES</b>				
1. TOTAL IODINE-131 + IODINE-133	CURIES	4.330E-06	4.569E-06	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	5.448E-07	5.748E-07	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	1.362E-03	1.437E-03	
<b>C. PARTICULATES</b>				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	2.132E-06	0.000E+00	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.682E-07	0.000E+00	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	8.939E-05	0.000E+00	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.000E+00	0.000E+00	
<b>D. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	5.299E+00	6.969E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	6.666E-01	8.768E-01	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	3.703E-04	4.871E-04	

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 2

REPORT CATEGORY: SEMIANNUAL AIRBORNE GROUND LEVEL  
CONTINUOUS AND BATCH RELEASES. TOTALS  
FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: FISSION GASES, IODINES, AND PARTICULATES

REPORTING PERIOD: QUARTER # 3 AND QUARTER # 4 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
Argon-41	CURIES	8.27E-01	1.24E-01	0.00E+00	3.37E-08
Xenon-133	CURIES	1.43E+01	2.77E+01	0.00E+00	0.00E+00
Xenon-135	CURIES	1.09E-01	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.52E+01	2.78E+01	0.00E+00	3.37E-08
IODINES					
Iodine-131	CURIES	2.02E-09	1.02E-08	0.00E+00	0.00E+00
Iodine-133	CURIES	4.33E-06	4.56E-06	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.33E-06	4.57E-06	0.00E+00	0.00E+00
PARTICULATES					
Cobalt-60	CURIES	2.13E-06	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	2.13E-06	0.00E+00	0.00E+00	0.00E+00
OTHER					
Hydrogen-3 (Tritium)	CURIES	5.30E+00	6.97E+00	0.00E+00	6.37E-10
TOTAL FOR PERIOD	CURIES	5.30E+00	6.97E+00	0.00E+00	6.37E-10

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 1 plus 2 Total

REPORT CATEGORY: ANNUAL AIRBORNE GROUND LEVEL RELEASES.  
TOTALS FOR EACH NUCLIDE RELEASED. FOR  
ALL OF 2000

NUCLIDES RELEASED	UNIT	UNIT 1 2000	UNIT 2 2000	TOTAL 2000
<b>FISSION GASES</b>				
Argon-41	CURIES	1.12E+00	1.17E+00	2.28E+00
Krypton-85m	CURIES	2.08E-01	0.00E+00	2.08E-01
Krypton-88	CURIES	2.83E-02	0.00E+00	2.83E-02
Xenon-131m	CURIES	9.90E-01	0.00E+00	9.90E-01
Xenon-133	CURIES	3.86E+02	7.17E+01	4.58E+02
Xenon-133m	CURIES	1.46E+00	0.00E+00	1.46E+00
Xenon-135	CURIES	3.56E+00	1.09E-01	3.67E+00
TOTAL FOR PERIOD	CURIES	3.93E+02	7.29E+01	4.66E+02
<b>IODINES</b>				
Iodine-131	CURIES	1.31E-03	1.58E-06	1.32E-03
Iodine-133	CURIES	1.28E-04	0.00E+00	1.28E-04
TOTAL FOR PERIOD	CURIES	1.44E-03	1.05E-05	1.45E-03
<b>PARTICULATES</b>				
Cerium-143	CURIES	9.23E-08	0.00E+00	9.23E-08
Cobalt-57	CURIES	2.65E-07	0.00E+00	2.65E-07
Cobalt-58	CURIES	1.27E-04	4.10E-06	1.31E-04
Cobalt-60	CURIES	3.72E-05	5.95E-06	4.32E-05
Chromium-51	CURIES	1.90E-04	0.00E+00	1.90E-04
Cesium-134	CURIES	4.62E-07	2.73E-10	4.62E-07
Cesium-137	CURIES	3.69E-06	2.22E-10	3.69E-06
Iron-59	CURIES	1.20E-05	0.00E+00	1.20E-05
Manganese-54	CURIES	4.17E-05	0.00E+00	4.17E-05
Niobium-95	CURIES	4.37E-05	0.00E+00	4.37E-05
Zirconium-95	CURIES	2.72E-05	0.00E+00	2.72E-05
TOTAL FOR PERIOD	CURIES	4.83E-04	1.01E-05	4.93E-04
<b>OTHER</b>				
Gross Alpha	CURIES	1.41E-07	1.89E-07	3.30E-07
Hydrogen-3 (Tritium)	CURIES	3.15E+01	1.86E+01	5.02E+01
TOTAL FOR PERIOD	CURIES	3.15E+01	1.86E+01	5.02E+01

## **LIQUID EFFLUENTS**

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL LIQUID EFFLUENTS**

**Unit: 1**

Starting : 1-Jan-2000    Ending : 30-Jun-2000

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	6.09E-02	3.97E-02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	2.03E-08	1.09E-08	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	2.88E+00	4.31E-02	
<b>B. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	1.59E+02	3.45E+01	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	5.30E-05	9.45E-06	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	5.30E-01	9.45E-02	
<b>C. DISSOLVED AND ENTRAINED GASES</b>				
1. TOTAL RELEASE	CURIES	1.14E+00	1.17E-03	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	3.80E-07	3.19E-10	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	1.90E-01	1.59E-04	
<b>D. GROSS ALPHA RADIOACTIVITY</b>				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	10
<b>E. WASTE VOL RELEASED</b>				
1. TOTAL PRE-DILUTION VOLUME	LITERS	5.35E+06	4.55E+06	1
2. BATCH PRE-DILUTION VOLUME	LITERS	1.97E+06	1.92E+06	1
F. VOLUME OF DILUTION WATER USED**	LITERS	2.99E+09	3.65E+09	10

\*EC= Effluent Concentration

\*\*"Volume of dilution water used" means the volume of water circulated through the main condenser during the actual time of release. Liquid effluent releases ultimately dilute into the volume of the onsite main cooling reservoir and then into offsite water bodies as described in Section 2, subsection Radiological Impact on Man of this report.

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 1

REPORT CATEGORY: SEMIANNUAL LIQUID CONTINUOUS AND BATCH  
RELEASES. TOTALS FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: ALL RADIONUCLIDES

REPORTING PERIOD: QUARTER # 1 AND QUARTER # 2 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS RELEASES		BATCH RELEASES	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
ALL NUCLIDES					
Silver-110m	CURIES	0.00E+00	0.00E+00	1.27E-04	9.44E-04
Cobalt-57	CURIES	0.00E+00	0.00E+00	8.84E-06	5.03E-05
Cobalt-58	CURIES	0.00E+00	6.19E-06	1.30E-03	1.45E-02
Cobalt-60	CURIES	0.00E+00	1.23E-05	5.07E-03	2.86E-03
Chromium-51	CURIES	0.00E+00	0.00E+00	5.35E-04	6.14E-03
Cesium-134	CURIES	4.31E-05	0.00E+00	1.91E-04	5.44E-05
Cesium-137	CURIES	6.25E-05	0.00E+00	2.86E-04	8.41E-05
Iron-55	CURIES	0.00E+00	0.00E+00	7.08E-03	2.84E-03
Iron-59	CURIES	0.00E+00	0.00E+00	0.00E+00	2.53E-04
Hydrogen-3 (Tritium)	CURIES	2.66E-02	1.08E-02	1.59E+02	3.45E+01
Iodine-131	CURIES	4.79E-05	0.00E+00	2.54E-02	3.18E-04
Iodine-132	CURIES	0.00E+00	0.00E+00	1.34E-04	0.00E+00
Iodine-133	CURIES	1.67E-05	0.00E+00	6.37E-04	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	1.29E-02	7.16E-04
Krypton-85m	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese-54	CURIES	0.00E+00	1.02E-05	5.77E-04	2.43E-03
Molybdenum-99	CURIES	0.00E+00	0.00E+00	2.39E-04	0.00E+00
Sodium-24	CURIES	0.00E+00	0.00E+00	1.71E-06	5.98E-06
Niobium-95	CURIES	0.00E+00	1.56E-06	2.65E-04	1.72E-03
Antimony-122	CURIES	0.00E+00	0.00E+00	1.64E-03	0.00E+00
Antimony-124	CURIES	0.00E+00	0.00E+00	4.69E-03	2.19E-03
Antimony-125	CURIES	0.00E+00	0.00E+00	7.38E-03	3.70E-03
Antimony-126	CURIES	0.00E+00	0.00E+00	1.48E-05	0.00E+00
Selenium-75	CURIES	0.00E+00	0.00E+00	0.00E+00	1.04E-05
Tin-113	CURIES	0.00E+00	0.00E+00	8.11E-07	4.10E-06
Tin-117m	CURIES	0.00E+00	0.00E+00	2.43E-03	6.43E-04
Strontium-89	CURIES	0.00E+00	0.00E+00	6.33E-05	6.76E-06
Strontium-90	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Technetium-99m	CURIES	0.00E+00	0.00E+00	1.45E-04	0.00E+00
Tellurium-125m	CURIES	0.00E+00	0.00E+00	2.30E-03	0.00E+00
Tellurium-132	CURIES	0.00E+00	0.00E+00	9.93E-05	0.00E+00
Xenon-131m	CURIES	0.00E+00	0.00E+00	2.27E-02	6.47E-05
Xenon-133	CURIES	0.00E+00	0.00E+00	1.09E+00	3.84E-04

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 1

REPORT CATEGORY: SEMIANNUAL LIQUID CONTINUOUS AND BATCH  
RELEASES. TOTALS FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: ALL RADIONUCLIDES

REPORTING PERIOD: QUARTER # 1 AND QUARTER # 2 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS RELEASES		BATCH RELEASES	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
ALL NUCLIDES					
Xenon-133m	CURIES	0.00E+00	0.00E+00	7.66E-03	0.00E+00
Xenon-135	CURIES	0.00E+00	0.00E+00	2.43E-04	0.00E+00
Zirconium-95	CURIES	0.00E+00	0.00E+00	7.25E-05	9.16E-04
TOTAL FOR PERIOD	CURIES	2.68E-02	1.08E-02	1.60E+02	3.45E+01

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL LIQUID EFFLUENTS**

**Unit: 1**

Starting : 1-Jul-2000    Ending : 31-Dec-2000

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	2.65E-02	1.05E-02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.40E-08	1.19E-08	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	1.78E-02	1.97E-02	
<b>B. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	4.33E+01	9.04E+01	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	2.30E-05	1.02E-04	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	2.30E-01	1.02E+00	
<b>C. DISSOLVED AND ENTRAINED GASES</b>				
1. TOTAL RELEASE	CURIES	3.02E-03	3.12E-05	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.60E-09	3.52E-11	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	8.00E-04	1.76E-05	
<b>D. GROSS ALPHA RADIOACTIVITY</b>				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	10
<b>E. WASTE VOL RELEASED</b>				
1. TOTAL PRE-DILUTION VOLUME	LITERS	3.37E+06	2.57E+06	1
2. BATCH PRE-DILUTION VOLUME	LITERS	8.83E+05	5.30E+05	1
F. VOLUME OF DILUTION WATER USED**	LITERS	1.88E+09	8.83E+08	10

\*EC= Effluent Concentration

\*\*"Volume of dilution water used" means the volume of water circulated through the main condenser during the actual time of release. Liquid effluent releases ultimately dilute into the volume of the onsite main cooling reservoir and then into offsite water bodies as described in Section 2, subsection Radiological Impact on Man of this report.

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 1

REPORT CATEGORY: SEMIANNUAL LIQUID CONTINUOUS AND BATCH  
RELEASES. TOTALS FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: ALL RADIONUCLIDES

REPORTING PERIOD: QUARTER # 3 AND QUARTER # 4 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS RELEASES		BATCH RELEASES	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
ALL NUCLIDES					
Silver-110m	CURIES	0.00E+00	0.00E+00	1.04E-04	1.50E-05
Cobalt-57	CURIES	0.00E+00	0.00E+00	4.43E-05	1.96E-05
Cobalt-58	CURIES	0.00E+00	0.00E+00	6.49E-03	1.36E-03
Cobalt-60	CURIES	0.00E+00	0.00E+00	2.98E-03	1.20E-03
Chromium-51	CURIES	0.00E+00	0.00E+00	8.59E-04	7.35E-05
Cesium-134	CURIES	0.00E+00	0.00E+00	2.00E-04	8.32E-05
Cesium-137	CURIES	0.00E+00	0.00E+00	2.78E-04	7.39E-05
Iron-55	CURIES	0.00E+00	0.00E+00	6.06E-03	1.73E-03
Iron-59	CURIES	0.00E+00	0.00E+00	9.90E-05	0.00E+00
Hydrogen-3 (Tritium)	CURIES	6.22E-02	1.12E-01	4.32E+01	9.03E+01
Krypton-85	CURIES	0.00E+00	0.00E+00	1.72E-03	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	2.44E-03	1.95E-03
Niobium-95	CURIES	0.00E+00	0.00E+00	1.15E-03	2.20E-05
Antimony-124	CURIES	0.00E+00	0.00E+00	3.01E-04	1.17E-04
Antimony-125	CURIES	0.00E+00	0.00E+00	4.70E-03	3.82E-03
Tin-113	CURIES	0.00E+00	0.00E+00	1.93E-05	0.00E+00
Tin-117m	CURIES	0.00E+00	0.00E+00	1.57E-04	6.35E-05
Strontium-89	CURIES	0.00E+00	0.00E+00	2.94E-06	1.63E-05
Strontium-90	CURIES	0.00E+00	0.00E+00	1.49E-06	1.05E-05
Xenon-133	CURIES	0.00E+00	0.00E+00	1.30E-03	3.12E-05
TOTAL FOR PERIOD	CURIES	6.22E-02	1.12E-01	4.32E+01	9.03E+01

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL LIQUID EFFLUENTS**

**Unit: 2**

Starting : 1-Jan-2000    Ending : 30-Jun-2000

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	3.47E-02	3.12E-02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	2.00E-08	1.71E-08	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	2.54E-02	1.20E-02	
<b>B. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	1.89E+02	2.34E+02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.09E-04	1.29E-04	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	1.09E+00	1.29E+00	
<b>C. DISSOLVED AND ENTRAINED GASES</b>				
1. TOTAL RELEASE	CURIES	1.88E-02	9.42E-02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.09E-08	5.17E-08	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	5.43E-03	2.58E-02	
<b>D. GROSS ALPHA RADIOACTIVITY</b>				
1. TOTAL RELEASE	CURIES	0.000E+00	0.000E+00	10
<b>E. WASTE VOL RELEASED</b>				
1. TOTAL PRE-DILUTION VOLUME	LITERS	4.02E+06	3.79E+06	1
2. BATCH PRE-DILUTION VOLUME	LITERS	9.44E+05	8.24E+05	1
F. VOLUME OF DILUTION WATER USED**	LITERS	1.73E+09	1.82E+09	10

\*EC= Effluent Concentration

\*\*"Volume of dilution water used" means the volume of water circulated through the main condenser during the actual time of release. Liquid effluent releases ultimately dilute into the volume of the onsite main cooling reservoir and then into offsite water bodies as described in Section 2, subsection Radiological Impact on Man of this report.

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 2

REPORT CATEGORY: SEMIANNUAL LIQUID CONTINUOUS AND BATCH  
RELEASES. TOTALS FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: ALL RADIONUCLIDES

REPORTING PERIOD: QUARTER # 1 AND QUARTER # 2 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS RELEASES		BATCH RELEASES	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
ALL NUCLIDES					
Silver-110m	CURIES	0.00E+00	0.00E+00	7.97E-05	8.11E-05
Cobalt-57	CURIES	0.00E+00	0.00E+00	2.23E-05	1.42E-05
Cobalt-58	CURIES	0.00E+00	0.00E+00	3.05E-03	2.46E-03
Cobalt-60	CURIES	0.00E+00	0.00E+00	1.91E-03	1.84E-03
Chromium-51	CURIES	0.00E+00	0.00E+00	1.29E-03	4.48E-04
Cesium-134	CURIES	9.13E-07	5.09E-05	2.43E-06	8.69E-06
Cesium-137	CURIES	7.40E-07	3.60E-05	7.67E-06	1.19E-05
Iron-55	CURIES	0.00E+00	0.00E+00	4.34E-03	3.08E-03
Iron-59	CURIES	0.00E+00	0.00E+00	2.15E-05	1.84E-05
Hydrogen-3 (Tritium)	CURIES	6.45E-02	1.04E-01	1.89E+02	2.34E+02
Iodine-131	CURIES	0.00E+00	0.00E+00	9.36E-06	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	5.35E-04	3.34E-02
Manganese-54	CURIES	0.00E+00	0.00E+00	2.48E-04	2.99E-04
Niobium-95	CURIES	0.00E+00	0.00E+00	3.35E-04	2.75E-04
Antimony-124	CURIES	0.00E+00	0.00E+00	1.52E-03	7.03E-04
Antimony-125	CURIES	0.00E+00	0.00E+00	1.91E-02	2.17E-02
Tin-117m	CURIES	0.00E+00	0.00E+00	6.42E-05	1.87E-06
Strontium-89	CURIES	0.00E+00	0.00E+00	5.07E-06	5.07E-06
Tellurium-125m	CURIES	0.00E+00	0.00E+00	2.49E-03	0.00E+00
Tellurium-132	CURIES	0.00E+00	0.00E+00	6.48E-06	5.45E-06
Xenon-131m	CURIES	0.00E+00	0.00E+00	2.43E-04	2.85E-03
Xenon-133	CURIES	0.00E+00	0.00E+00	1.71E-02	5.75E-02
Xenon-133m	CURIES	0.00E+00	0.00E+00	4.08E-04	3.77E-04
Xenon-135	CURIES	0.00E+00	0.00E+00	5.34E-04	9.10E-06
Zirconium-95	CURIES	0.00E+00	0.00E+00	1.43E-04	1.35E-04
TOTAL FOR PERIOD	CURIES	6.45E-02	1.04E-01	1.89E+02	2.34E+02

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY  
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER  
ALL LIQUID EFFLUENTS**

**Unit: 2**

Starting : 1-Jul-2000    Ending : 31-Dec-2000

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
<b>A. FISSION &amp; ACTIVATION PRODUCTS</b>				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	4.23E-02	7.40E-02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.86E-08	2.07E-08	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	2.08E-02	3.18E-02	
<b>B. TRITIUM</b>				
1. TOTAL RELEASE	CURIES	7.37E+01	4.29E+02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	3.24E-05	1.20E-04	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	3.24E-01	1.20E+00	
<b>C. DISSOLVED AND ENTRAINED GASES</b>				
1. TOTAL RELEASE	CURIES	1.41E-03	1.26E-01	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	6.18E-10	3.54E-08	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	3.09E-04	1.77E-02	
<b>D. GROSS ALPHA RADIOACTIVITY</b>				
1. TOTAL RELEASE	CURIES	0.000E+00	0.000E+00	10
<b>E. WASTE VOL RELEASED</b>				
1. TOTAL PRE-DILUTION VOLUME	LITERS	4.72E+06	1.69E+07	1
2. BATCH PRE-DILUTION VOLUME	LITERS	9.71E+05	2.07E+06	1
F. VOLUME OF DILUTION WATER USED**	LITERS	2.27E+09	3.55E+09	10

\*EC= Effluent Concentration

\*\*"Volume of dilution water used" means the volume of water circulated through the main condenser during the actual time of release. Liquid effluent releases ultimately dilute into the volume of the onsite main cooling reservoir and then into offsite water bodies as described in Section 2, subsection Radiological Impact on Man of this report.

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

## Unit 2

REPORT CATEGORY: SEMIANNUAL LIQUID CONTINUOUS AND BATCH  
RELEASES. TOTALS FOR EACH NUCLIDE RELEASED.

TYPE OF ACTIVITY: ALL RADIONUCLIDES

REPORTING PERIOD: QUARTER # 3 AND QUARTER # 4 YEAR 2000

NUCLIDES RELEASED	UNIT	CONTINUOUS RELEASES		BATCH RELEASES	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
ALL NUCLIDES					
Silver-110m	CURIES	0.00E+00	0.00E+00	7.98E-06	6.19E-05
Cobalt-57	CURIES	0.00E+00	0.00E+00	2.00E-05	6.66E-05
Cobalt-58	CURIES	0.00E+00	0.00E+00	1.04E-03	2.26E-03
Cobalt-60	CURIES	0.00E+00	0.00E+00	1.85E-03	7.22E-03
Chromium-51	CURIES	0.00E+00	0.00E+00	5.52E-05	3.51E-04
Cesium-134	CURIES	1.39E-05	1.26E-05	1.37E-04	3.10E-04
Cesium-137	CURIES	1.49E-05	1.19E-05	1.09E-04	3.41E-04
Iron-55	CURIES	0.00E+00	0.00E+00	2.10E-03	8.45E-03
Hydrogen-3 (Tritium)	CURIES	6.30E-01	3.57E+00	7.31E+01	4.25E+02
Iodine-131	CURIES	0.00E+00	1.88E-07	0.00E+00	7.13E-05
Iodine-132	CURIES	0.00E+00	1.51E-07	0.00E+00	0.00E+00
Iodine-133	CURIES	6.72E-07	3.39E-06	0.00E+00	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	7.74E-04	5.33E-02
Krypton-85m	CURIES	0.00E+00	0.00E+00	0.00E+00	7.54E-06
Manganese-54	CURIES	0.00E+00	0.00E+00	1.04E-03	2.60E-03
Niobium-95	CURIES	0.00E+00	0.00E+00	5.40E-05	1.25E-04
Antimony-124	CURIES	0.00E+00	0.00E+00	8.35E-05	7.77E-05
Antimony-125	CURIES	0.00E+00	0.00E+00	9.08E-03	1.94E-02
Tin-117m	CURIES	0.00E+00	0.00E+00	2.22E-04	1.04E-04
Strontium-89	CURIES	0.00E+00	0.00E+00	7.81E-06	3.18E-05
Technetium-99m	CURIES	0.00E+00	0.00E+00	0.00E+00	7.17E-06
Tellurium-125m	CURIES	0.00E+00	0.00E+00	2.64E-02	3.24E-02
Tellurium-132	CURIES	0.00E+00	0.00E+00	3.71E-06	0.00E+00
Xenon-131m	CURIES	0.00E+00	0.00E+00	0.00E+00	1.66E-03
Xenon-133	CURIES	0.00E+00	0.00E+00	6.33E-04	6.97E-02
Xenon-133m	CURIES	0.00E+00	0.00E+00	0.00E+00	8.25E-04
Xenon-135	CURIES	0.00E+00	0.00E+00	0.00E+00	8.21E-04
Zirconium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	1.77E-05
TOTAL FOR PERIOD	CURIES	6.30E-01	3.57E+00	7.31E+01	4.25E+02

**SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY**  
**Unit 1 plus 2 Total**  
**REPORT CATEGORY: ANNUAL LIQUID RELEASES. TOTALS FOR**  
**EACH NUCLIDE RELEASED. FOR ALL OF**  
**2000**

NUCLIDES RELEASED	UNIT	UNIT 1 2000	UNIT 2 2000	TOTAL 2000
<b>ALL NUCLIDES</b>				
Silver-110m	CURIES	1.190E-03	2.307E-04	1.421E-03
Cobalt-57	CURIES	1.231E-04	1.232E-04	2.463E-04
Cobalt-58	CURIES	2.362E-02	8.802E-03	3.242E-02
Cobalt-60	CURIES	1.212E-02	1.283E-02	2.494E-02
Chromium-51	CURIES	7.609E-03	2.140E-03	9.749E-03
Cesium-134	CURIES	5.724E-04	5.363E-04	1.109E-03
Cesium-137	CURIES	7.847E-04	5.337E-04	1.318E-03
Iron-55	CURIES	1.771E-02	1.797E-02	3.568E-02
Iron-59	CURIES	3.521E-04	3.986E-05	3.920E-04
Hydrogen-3 (Tritium)	CURIES	3.272E+02	9.255E+02	1.253E+03
Iodine-131	CURIES	2.577E-02	8.082E-05	2.585E-02
Iodine-132	CURIES	1.344E-04	1.509E-07	1.346E-04
Iodine-133	CURIES	6.532E-04	4.066E-06	6.573E-04
Krypton-85	CURIES	1.537E-02	8.797E-02	1.033E-01
Krypton-85m	CURIES	0.000E+00	7.537E-06	7.537E-06
Manganese-54	CURIES	7.401E-03	4.185E-03	1.159E-02
Molybdenum-99	CURIES	2.385E-04	0.000E+00	2.385E-04
Sodium-24	CURIES	7.694E-06	0.000E+00	7.694E-06
Niobium-95	CURIES	3.152E-03	7.882E-04	3.940E-03
Antimony-122	CURIES	1.637E-03	0.000E+00	1.637E-03
Antimony-124	CURIES	7.298E-03	2.383E-03	9.680E-03
Antimony-125	CURIES	1.959E-02	6.927E-02	8.886E-02
Antimony-126	CURIES	1.476E-05	0.000E+00	1.476E-05
Selenium-75	CURIES	1.037E-05	0.000E+00	1.037E-05
Tin-113	CURIES	2.423E-05	0.000E+00	2.423E-05
Tin-117m	CURIES	3.290E-03	3.924E-04	3.682E-03
Strontium-89	CURIES	8.930E-05	4.975E-05	1.391E-04
Strontium-90	CURIES	1.199E-05	0.000E+00	1.199E-05
Technetium-99m	CURIES	1.445E-04	7.165E-06	1.517E-04
Tellurium-125m	CURIES	2.304E-03	6.136E-02	6.367E-02
Tellurium-132	CURIES	9.933E-05	1.564E-05	1.150E-04
Xenon-131m	CURIES	2.276E-02	4.750E-03	2.752E-02
Xenon-133	CURIES	1.096E+00	1.449E-01	1.241E+00
Xenon-133m	CURIES	7.655E-03	1.610E-03	9.265E-03
Xenon-135	CURIES	2.434E-04	1.364E-03	1.607E-03
Zirconium-95	CURIES	1.575E-03	2.962E-04	1.871E-03

## SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

**Unit 1 plus 2 Total**

REPORT CATEGORY: ANNUAL LIQUID RELEASES. TOTALS FOR  
EACH NUCLIDE RELEASED. FOR ALL OF  
2000

<b>NUCLIDES RELEASED</b>	<b>UNIT</b>	<b>UNIT 1 2000</b>	<b>UNIT 2 2000</b>	<b>TOTAL 2000</b>
ALL NUCLIDES				
TOTAL	CURIES	3.285E+02	9.259E+02	1.254E+03
TOTAL Noble Gases	CURIES	1.142E+00	2.406E-01	1.382E+00
TOTAL Excluding Tritium & Noble Gases	CURIES	1.375E-01	1.820E-01	3.196E-01

## **Solid Waste and Irradiated Fuel Shipments**

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

1. Type of Waste	Units	12-Month Period Shipped	12-Month Period Buried	Est. Total Error, %	
a. Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup>	4.03E+01	4.03E+01	-1.0E+00	+1.0E+00
	Ci	3.52E+02	3.52E+02	-5.0E+01	+1.0E+02
b. Dry compressible waste, contaminated equip., etc.	m <sup>3</sup>	7.09E+02	2.57E+02	-1.0E+00	+1.0E+00
	Ci	5.92E+00	5.32E+00	-6.6E+01	+2.0E+02
c. Irradiated components, control rods, etc.	m <sup>3</sup>	0.00E+00	0.00E+00	N/A	N/A
	Ci	0.00E+00	0.00E+00		
d. Other (low level secondary resin)	m <sup>3</sup>	2.17E+2	2.17E+02	-1.0E+00	+1.0E+00
	Ci	1.99E-04	1.99E-04	-5.0E+01	+1.0E+02

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

a. Spent resins, filter sludges, evaporator bottoms, etc.		
Iron-55	%	1.37E+01
Nickel-63	%	6.21E+01
Cobalt-60	%	1.08E+01
Cobalt-58	%	2.86E+00
Tritium	%	3.68E+00
Cesium-134	%	1.84E+00
Cesium-137	%	1.93E+00
Manganese-54	%	1.18E+00
b. Dry compressible waste, contaminated equip., etc.		
Cobalt-58	%	3.49E+01
Iron-55	%	2.03E+01
Chromium-51	%	2.10E+01
Nickel-63	%	9.21E+00
Cobalt-60	%	4.80E+00
Niobium-95	%	2.27E+00
Zirconium-95	%	2.14E+00
Antimony-124	%	1.94E+00
Manganese-54	%	1.37E+00
c. N/A		
d. Other (low level secondary resin)		
Cobalt-60	%	2.40E+01
Cesium-137	%	4.38E+01
Cesium-134	%	2.45E+01
Cobalt-58	%	1.04E+00
Manganese-54	%	5.98E+00

## 3. Solid Waste Disposition:

Number of Shipments	Mode of Transportation	Destination
10	Truck	Chem-Nuclear Systems Barnwell Waste Management Facility 740 Osborn Rd. Barnwell, SC 29812
4	Truck	US Ecology Nuclear Mtis. Mgt. Center 109 Flint Road Oak ridge, TN 37830
7	Truck	GTS-Duratek 1560 Bear Creek Road Oak Ridge, TN 37830
6	Truck	GTS-Duratek Gallaher Road Facility 628 Gallaher Rd. Kingston, TN 37763

## 4. Class of Solid Waste:

A, B &amp; C

## 5. Type of Containers Used for Shipment:

Strong Tight, High-Integrity Containers, Type A and B casks

## 6. Solidifying Agent:

N/A

## B. IRRADIATED FUEL SHIPMENTS (Disposal)

No shipments made during this period.

## **Solid Waste and Irradiated Fuel Shipments**

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

1. Type of Waste	Units	12-Month Period Shipped	12-Month Period Buried	Est. Total Error, %	
a. Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup>	4.03E+01	4.03E+01	-1.0E+00	+1.0E+00
	Ci	3.52E+02	3.52E+02	-5.0E+01	+1.0E+02
b. Dry compressible waste, contaminated equip., etc.	m <sup>3</sup>	7.09E+02	2.57E+02	-1.0E+00	+1.0E+00
	Ci	5.92E+00	5.32E+00	-6.6E+01	+2.0E+02
c. Irradiated components, control rods, etc.	m <sup>3</sup>	0.00E+00	0.00E+00	N/A	N/A
	Ci	0.00E+00	0.00E+00		
d. Other (low level secondary resin)	m <sup>3</sup>	2.17E+2	2.17E+02	-1.0E+00	+1.0E+00
	Ci	1.99E-04	1.99E-04	-5.0E+01	+1.0E+02

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

a. Spent resins, filter sludges, evaporator bottoms, etc.		
Iron-55	%	1.37E+01
Nickel-63	%	6.21E+01
Cobalt-60	%	1.08E+01
Cobalt-58	%	2.86E+00
Tritium	%	3.68E+00
Cesium-134	%	1.84E+00
Cesium-137	%	1.93E+00
Manganese-54	%	1.18E+00
b. Dry compressible waste, contaminated equip., etc.		
Cobalt-58	%	3.49E+01
Iron-55	%	2.03E+01
Chromium-51	%	2.10E+01
Nickel-63	%	9.21E+00
Cobalt-60	%	4.80E+00
Niobium-95	%	2.27E+00
Zirconium-95	%	2.14E+00
Antimony-124	%	1.94E+00
Manganese-54	%	1.37E+00
c. N/A		
d. Other (low level secondary resin)		
Cobalt-60	%	2.40E+01
Cesium-137	%	4.38E+01
Cesium-134	%	2.45E+01
Cobalt-58	%	1.04E+00
Manganese-54	%	5.98E+00

3. Solid Waste Disposition:

Number of Shipments	Mode of Transportation	Destination
10	Truck	Chem-Nuclear Systems Barnwell Waste Management Facility 740 Osborn Rd. Barnwell, SC 29812
4	Truck	US Ecology Nuclear Mtls. Mgt. Center 109 Flint Road Oak ridge, TN 37830
7	Truck	GTS-Duratek 1560 Bear Creek Road Oak Ridge, TN 37830
6	Truck	GTS-Duratek Gallaher Road Facility 628 Gallaher Rd. Kingston, TN 37763

4. Class of Solid Waste:  
 A, B & C

5. Type of Containers Used for Shipment:  
 Strong Tight, High-Integrity Containers, Type A and B casks

6. Solidifying Agent:  
 N/A

B. IRRADIATED FUEL SHIPMENTS (Disposal)  
 No shipments made during this period.

## DOSE ACCUMULATIONS

STP NUCLEAR OPERATING COMPANY  
SUMMARY OF MAXIMUM INDIVIDUAL DOSES

Unit: 1

TOTAL ACCUMULATION FOR PERIODS:

for LIQUID, GASEOUS AND AIR

Starting: 1-Jan-2000 Ending: 31-Dec-2000

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (m) (TOWARD)	% OF APPLICABLE LIMIT	LIMIT (mrad or mrem)
LIQUID	TOTAL BODY	1.94E-03	ADULT	RECEPTOR 3 <sup>(5)</sup>	6.5E-02	3.0
LIQUID	GI-TRACT	2.35E-03	ADULT	RECEPTOR 3 <sup>(5)</sup>	2.3E-02	10.0
NOBLE GAS	AIR DOSE (gamma-mrad)	1.17E-02		1850m WNW	1.2E-01	10.0
NOBLE GAS	AIR DOSE (beta-mrad)	3.24E-02		1850m WNW	1.6E-01	20.0
NOBLE GAS	TOTAL BODY	7.18E-03	ALL <sup>(1)</sup>	1540m NNW	1.4E-01	5.0
NOBLE GAS	TOTAL BODY	9.68E-04	ALL <sup>(2)</sup>	5600m NNW	1.9E-02	5.0
NOBLE GAS	SKIN	1.67E-02	ALL <sup>(1)</sup>	1540m NNW	1.1E-01	15.0
NOBLE GAS	SKIN	2.29E-03	ALL <sup>(2)</sup>	5600m NNW	1.5E-02	15.0
IODINE, PARTICULATES & TRITIUM	THYROID	2.45E-02	INFANT <sup>(1)</sup>	1540m NNW	1.6E-01	15.0
IODINE, PARTICULATES & TRITIUM	THYROID	1.14E-03	CHILD <sup>(2)</sup>	5600m NNW	7.6E-03	15.0

SUMMARY OF POPULATION DOSES FOR 2000			
EFFLUENT	APPLICABLE ORGAN	ESTIMATED POPULATION DOSE (person-rem)	AVERAGE DOSE TO POPULATION (rem per person)
LIQUID	TOTAL BODY	8.0E-04	3.2E-08 <sup>(3)</sup>
GASEOUS	TOTAL BODY	8.2E-03	2.8E-08 <sup>(4)</sup>

NOTES:

<sup>(1)</sup>Doses were calculated for HYPOTHETICAL receptors at the site boundary.

<sup>(2)</sup>Highest dose for REAL individual or receptor.

<sup>(3)</sup> Calculation based on a population of 303,500 for shore line exposure and for salt water invertebrate ingestion and 18,500 for salt water sport fish ingestion.

<sup>(4)</sup> Calculation based on a population of 299,000 within fifty (50) miles of South Texas Project Electric Generating Station.

<sup>(5)</sup>Receptor 3 is an individual ingesting fresh water sport fish and receiving shoreline exposure from the Little Robbins Slough Area.

STP NUCLEAR OPERATING COMPANY  
SUMMARY OF MAXIMUM INDIVIDUAL DOSES

Unit: 2

TOTAL ACCUMULATION FOR PERIODS:

for LIQUID, GASEOUS, AND AIR

Starting: 1-Jan-2000 Ending: 31-Dec-2000

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (m) (TOWARD)	% OF APPLICABLE LIMIT	LIMIT (mrad or mrem)
LIQUID	TOTAL BODY	5.37E-03	ADULT	RECEPTOR 3(5)	1.8E-01	3.0
LIQUID	GI-TRACT	5.65E-03	ADULT	RECEPTOR 3(5)	5.6E-02	10.0
NOBLE GAS	AIR DOSE (gamma-mrad)	2.51E-03		1720m NW	2.5E-02	10.0
NOBLE GAS	AIR DOSE (beta-mrad)	5.52E-03		1720m NW	2.8E-02	20.0
NOBLE GAS	TOTAL BODY	7.60E-04	ALL(1)	1540m NNW	1.5E-02	5.0
NOBLE GAS	TOTAL BODY	1.04E-04	ALL(2)	5600m NNW	2.1E-03	5.0
NOBLE GAS	SKIN	1.75E-03	ALL(1)	1540m NNW	1.2E-02	15.0
NOBLE GAS	SKIN	2.42E-04	ALL(2)	5600m NNW	1.6E-03	15.0
IODINE, PARTICULATES & TRITIUM	THYROID	3.29E-03	CHILD(1)	1540m NNW	2.2E-02	15.0
IODINE, PARTICULATES & TRITIUM	THYROID	3.17E-04	CHILD(2)	5600m NNW	2.1E-03	15.0

SUMMARY OF POPULATION DOSES FOR 2000			
EFFLUENT	APPLICABLE ORGAN	ESTIMATED POPULATION DOSE (person-rem)	AVERAGE DOSE TO POPULATION (rem per person)
LIQUID	TOTAL BODY	1.8E-03	8.4E-08(3)
GASEOUS	TOTAL BODY	2.3E-03	7.5E-09(4)

NOTES:

- (1) Doses were calculated for HYPOTHETICAL receptors at the site boundary.
- (2) Highest dose for REAL individual or receptor.
- (3) Calculation based on a population of 303,500 for shore line exposure and for salt water invertebrate ingestion and 18,500 for salt water sport fish ingestion.
- (4) Calculation based on a population of 299,000 within fifty (50) miles of South Texas Project Electric Generating Station.
- (5) Receptor 3 is an individual ingesting fresh water sport fish and receiving shoreline exposure from the Little Robbins Slough Area.

STP NUCLEAR OPERATING COMPANY  
SUMMARY OF MAXIMUM INDIVIDUAL DOSES

Unit: 1 PLUS 2

TOTAL ACCUMULATION FOR PERIODS:

for LIQUID, GASEOUS, AND AIR

Starting: 1-Jan-2000 Ending: 31-Dec-2000

EFFLUENT	APPLICABLE ORGAN	UNIT 1 ESTIMATED DOSE (mrem)	UNIT 2 ESTIMATED DOSE (mrem)	TOTAL 1+2 ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (m) (TOWARD)
LIQUID	TOTAL BODY	1.94E-03	5.37E-03	7.30E-03	ADULT	RECEPTOR 3 <sup>(5)</sup>
LIQUID	GI-TRACT	2.35E-03	5.65 E-03	8.00E-03	ADULT	RECEPTOR 3 <sup>(5)</sup>
NOBLE GAS	AIR DOSE (gamma-mrad)	1.12E-02	2.51E-03	1.37E-02		1720m NW
NOBLE GAS	AIR DOSE (beta-mrad)	3.24E-02	4.40E-03	3.68E-02		1850m WNW
NOBLE GAS	TOTAL BODY	7.18-03	7.60E-04	7.94E-03	ALL <sup>(1)</sup>	1540m NNW
NOBLE GAS	TOTAL BODY	9.68E-04	1.04E-04	1.06E-03	ALL <sup>(2)</sup>	5600m NNW
NOBLE GAS	SKIN	1.67E-02	1.75E-03	1.85E-02	ALL <sup>(1)</sup>	1540m NNW
NOBLE GAS	SKIN	2.29E-03	2.42E-04	2.53E-03	ALL <sup>(2)</sup>	5600m NNW
IODINE, PARTICULATES & TRITIUM	THYROID	2.45E-02	2.60E-03	2.71E-02	INFANT <sup>(1)</sup>	1540m NNW
IODINE, PARTICULATES & TRITIUM	THYROID	1.14E-03	3.17E-04	1.46E-03	CHILD <sup>(2)</sup>	5600m NNW
IODINE, PARTICULATES & TRITIUM	TOTAL BODY	7.80E-04	2.38E-04	1.02E-03	ADULT <sup>(2)</sup>	5600m NNW

SUMMARY OF POPULATION DOSES FOR 2000			
EFFLUENT	APPLICABLE ORGAN	TOTAL 1+2 ESTIMATED POPULATION DOSE (person-rem)	TOTAL 1+2 AVERAGE DOSE TO POPULATION (rem per person)
LIQUID	TOTAL BODY	2.6E-03	1.2E-07 <sup>(3)</sup>
GASEOUS	TOTAL BODY	1.0E-02	3.5E-08 <sup>(4)</sup>

NOTES:

- <sup>(1)</sup>Doses were calculated for HYPOTHETICAL receptors at the site boundary.
- <sup>(2)</sup>Highest dose for REAL individual or receptor.
- <sup>(3)</sup> Calculation based on a population of 303,500 for shore line exposure and for salt water invertebrate ingestion and 18,500 for salt water sport fish ingestion.
- <sup>(4)</sup> Calculation based on a population of 299,000 within fifty (50) miles of South Texas Project Electric Generating Station.
- <sup>(5)</sup>Receptor 3 is an individual ingesting fresh water sport fish and receiving shoreline exposure from the Little Robbins Slough Area.

**RESULTS OF THE PROTECTED AREA DIRECT RADIATION  
MEASUREMENTS PROGRAM**

Table 8-1

2000 STPEGS PROTECTED AREA THERMOLUMINESCENT DOSIMETER MONITORING STATIONS						
Station Number	1st Qtr Average	2nd Qtr Average	3rd Qtr Average	4th Qtr Average	Average Rate	Average <sup>(1)</sup> Net Rate
	<sup>(2)</sup> (mR)	(mR/hour)				
1	14.4	13.1	12.7	13.6	13.4	-0-
2	12.3	12.0	12.1	13.0	12.3	-0-
3	12.6	12.7	12.7	13.3	12.8	-0-
4	13.3	15.2	12.8	13.2	13.6	-0-
5	14.9	14.7	16.1	14.1	15.0	-0-
6	15.4	16.4	19.4	17.3	17.1	0.00079
7	15.3	15.7	18.7	16.6	16.6	0.00055
8	13.4	13.8	14.5	14.2	14.0	-0-
9	13.4	12.6	13.0	13.7	13.2	-0-
10	12.9	12.2	12.1	12.8	12.5	-0-
11	11.6	11.3	11.3	11.4	11.4	-0-
12	12.7	12.1	12.5	12.8	12.5	-0-
13	12.6	12.1	12.1	12.9	12.4	-0-
14	12.6	12.0	12.3	12.7	12.4	-0-
15	13.5	12.8	13.1	13.8	13.3	-0-
16	13.0	12.5	12.2	14.6	13.1	-0-

## Notes:

Individual values normalized to a 91 day quarter.

Only the calcium sulfate elements were used in these averages.

## (1) Net Rate:

Difference between the exposure rate in 2000 and the rate measured in 1986 due to natural background  

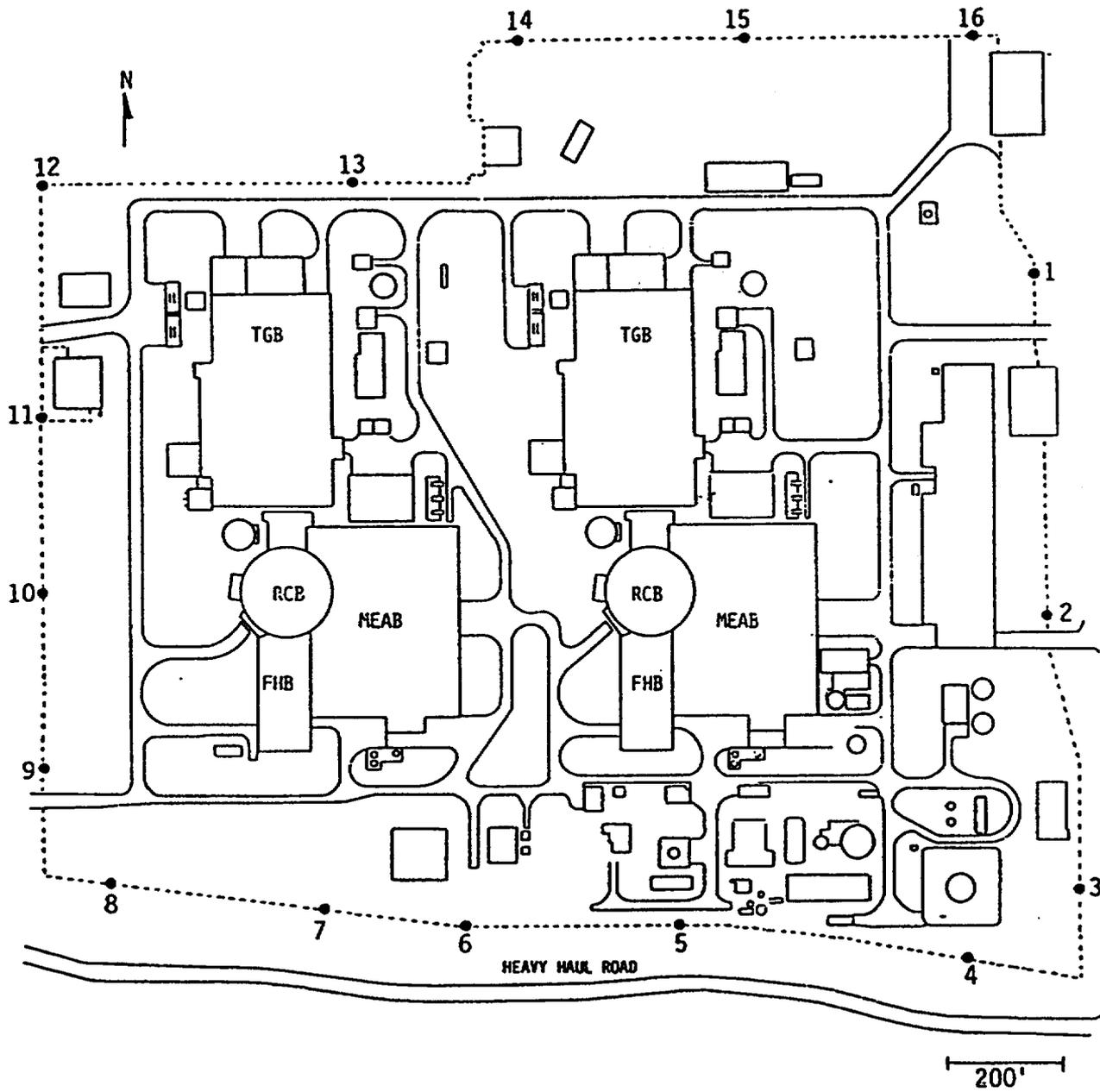
$$([\text{average rate}] - 15.4 \text{ mR background}) / 91 \text{ days} / 24 \text{ hours per day}$$

The 1986 background rate of 15.4 milliroentgen per quarter at the site boundary has been used to reflect the pre-operational baseline exposure rate for STP. Historically the exposure rate measured near the protected area fence has been lower than the site boundary's historical background. This year, dosimeter stations 6 and 7 had exposure rates above the site boundary's background rate. These two stations typically have the highest rates due to radioactive waste handling activities on the south sides of the Units.

Zero (0) indicates background levels.

(2) mR = milliroentgen, a unit of exposure for X and gamma rays

FIGURE 8-1  
PROTECTED AREA MONITORING STATIONS



## JOINT FREQUENCY TABLES

**First Quarter 2000**  
**Joint Frequency Tables**

## JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -A-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	4	2	0	0	0	7	2.5	10.4
NNE	0	0	2	6	3	0	0	0	11	3.9	10.3
NE	0	0	0	1	3	0	0	0	4	1.4	14.2
ENE	0	0	1	2	2	1	0	0	6	2.1	12.5
E	0	0	1	1	6	0	0	0	8	2.8	14.6
ESE	0	0	1	3	7	1	0	0	12	4.2	13.5
SE	0	0	0	5	16	17	0	0	38	13.4	17.4
SSE	0	0	0	8	17	12	0	0	37	13.0	15.7
S	0	0	3	25	31	2	0	0	61	21.5	13.0
SSW	0	0	0	9	26	3	0	0	38	13.4	14.6
SW	0	0	2	7	5	2	0	0	16	5.6	12.6
WSW	0	0	2	1	2	0	0	0	5	1.8	9.9
W	0	0	3	1	0	0	0	0	4	1.4	7.3
WNW	0	0	4	0	0	0	0	0	4	1.4	5.0
NW	0	0	2	0	1	3	0	0	6	2.1	14.8
NNW	0	1	1	11	3	11	0	0	27	9.5	14.5
TOTAL	0	1	23	84	124	52	0	0	284	100.0	
%	0.0	0.4	8.1	29.6	43.7	18.3	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 14.0 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 125  
TOTAL NUMBER OF VALID HOURS= 2059  
TOTAL NUMBER OF HOURS FOR PERIOD= 2184

## JOINT FREQUENCY TABLE

STABILITY CLASS -B-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	3	1	0	0	0	5	4.7	9.5
NNE	0	0	0	1	0	0	0	0	1	0.9	8.3
NE	0	0	0	0	2	0	0	0	2	1.9	15.8
ENE	0	0	0	8	2	0	0	0	10	9.4	11.4
E	0	0	0	1	2	3	0	0	6	5.7	17.1
ESE	0	0	2	4	11	1	0	0	18	17.0	13.5
SE	0	0	0	1	8	4	0	0	13	12.3	16.3
SSE	0	0	1	14	2	1	0	0	18	17.0	11.4
S	0	0	3	9	6	0	0	0	18	17.0	11.0
SSW	0	0	1	1	4	0	0	0	6	5.7	12.9
SW	0	0	0	0	1	0	0	0	1	0.9	15.8
WSW	0	0	1	0	1	0	0	0	2	1.9	10.8
W	0	0	1	0	0	0	0	0	1	0.9	6.8
WNW	0	0	2	0	0	0	0	0	2	1.9	5.2
NW	0	0	0	0	0	1	0	0	1	0.9	19.6
NNW	0	0	0	1	0	1	0	0	2	1.9	15.1
TOTAL	0	0	12	43	40	11	0	0	106	100.0	
%	0.0	0.0	11.3	40.6	37.7	10.4	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 12.7 MPH

HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0

TOTAL NUMBER OF CALMS= 0

TOTAL NUMBER OF INVALID HOURS= 125

TOTAL NUMBER OF VALID HOURS= 2059

TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

STABILITY CLASS -C-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	3	3	0	0	0	6	5.1	12.2
NNE	0	0	0	6	0	0	0	0	6	5.1	9.1
NE	0	0	1	3	2	0	0	0	6	5.1	11.6
ENE	0	0	2	3	1	0	0	0	6	5.1	10.3
E	0	0	1	1	8	1	3	0	14	11.9	17.0
ESE	0	0	0	1	6	6	0	0	13	11.0	17.9
SE	0	0	0	4	7	5	0	0	16	13.6	15.4
SSE	0	0	3	4	7	3	0	0	17	14.4	13.3
S	0	0	2	6	1	0	0	0	9	7.6	9.4
SSW	0	0	1	0	0	0	0	0	1	0.8	3.7
SW	0	0	1	4	0	0	0	0	5	4.2	7.1
WSW	0	0	0	1	1	0	0	0	2	1.7	12.7
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	0	0	0	0	0	1	0.8	4.3
NW	0	1	2	1	0	0	0	0	4	3.4	6.1
NNW	0	0	0	3	7	2	0	0	12	10.2	14.9
TOTAL	0	1	14	40	43	17	3	0	118	100.0	
%	0.0	0.8	11.9	33.9	36.4	14.4	2.5	0.0	100.0		

AVE SPEED FOR THIS TABLE= 13.2 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 125  
 TOTAL NUMBER OF VALID HOURS= 2059  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -D-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	1	3	26	34	5	0	0	69	12.1	13.3
NNE	0	1	4	19	7	0	0	0	31	5.5	10.0
NE	0	1	6	19	5	0	0	0	31	5.5	9.6
ENE	0	0	5	18	12	0	0	0	35	6.2	10.8
E	0	0	8	14	41	7	0	0	70	12.3	13.8
ESE	0	2	4	22	49	7	0	0	84	14.8	13.7
SE	0	0	6	31	28	3	0	0	68	12.0	12.2
SSE	0	0	7	25	18	4	0	0	54	9.5	12.1
S	0	2	4	17	6	0	0	0	29	5.1	9.5
SSW	0	0	3	6	3	0	0	0	12	2.1	10.0
SW	0	0	3	4	2	0	0	0	9	1.6	9.7
WSW	0	0	3	1	0	0	0	0	4	0.7	7.3
W	0	0	1	0	0	0	0	0	1	0.2	5.7
WNW	0	2	1	0	0	0	0	0	3	0.5	4.2
NW	0	1	6	3	0	0	0	0	10	1.8	7.0
NNW	0	1	7	22	20	8	0	0	58	10.2	12.9
TOTAL	0	11	71	227	225	34	0	0	568	100.0	
%	0.0	1.9	12.5	40.0	39.6	6.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 12.1 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 125  
TOTAL NUMBER OF VALID HOURS= 2059  
TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -E-  
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PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	1	12	23	7	0	0	0	43	6.0	9.8
NNE	0	1	16	25	2	0	0	0	44	6.2	8.1
NE	0	1	20	22	4	0	0	0	47	6.6	7.9
ENE	0	7	15	22	10	0	0	0	54	7.6	8.5
E	0	1	18	17	9	1	0	0	46	6.4	9.4
ESE	0	1	28	35	2	0	0	0	66	9.2	8.4
SE	0	3	22	43	11	0	0	0	79	11.0	9.0
SSE	0	2	30	53	37	2	0	0	124	17.3	10.6
S	0	1	18	55	3	0	0	0	77	10.8	8.8
SSW	0	2	15	27	3	0	0	0	47	6.6	8.7
SW	0	1	8	14	0	0	0	0	23	3.2	7.8
WSW	0	3	4	3	1	1	0	0	12	1.7	7.7
W	0	3	2	0	0	0	0	0	5	0.7	3.8
WNW	0	3	4	0	0	0	0	0	7	1.0	4.0
NW	0	4	6	1	3	0	0	0	14	2.0	7.2
NNW	0	2	3	15	7	0	0	0	27	3.8	10.6
TOTAL	0	36	221	355	99	4	0	0	715	100.0	
%	0.0	5.0	30.9	49.7	13.8	0.6	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 9.0 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 125  
TOTAL NUMBER OF VALID HOURS= 2059  
TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -F-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	9	6	0	0	0	0	15	10.3	7.5
NNE	0	1	8	1	0	0	0	0	10	6.9	6.0
NE	0	1	10	3	0	0	0	0	14	9.7	5.8
ENE	0	3	10	0	0	0	0	0	13	9.0	5.4
E	0	3	12	1	0	0	0	0	16	11.0	5.6
ESE	0	0	9	2	1	0	0	0	12	8.3	7.0
SE	0	0	11	3	0	0	0	0	14	9.7	6.3
SSE	0	0	10	2	0	0	0	0	12	8.3	6.2
S	0	0	8	2	0	0	0	0	10	6.9	6.8
SSW	0	1	3	0	0	0	0	0	4	2.8	6.0
SW	0	0	1	3	0	0	0	0	4	2.8	8.9
WSW	0	1	2	2	0	0	0	0	5	3.4	5.7
W	0	0	3	0	0	0	0	0	3	2.1	4.1
WNW	0	2	4	0	0	0	0	0	6	4.1	3.7
NW	0	0	3	0	0	0	0	0	3	2.1	5.1
NNW	0	0	3	1	0	0	0	0	4	2.8	7.1
TOTAL	0	12	106	26	1	0	0	0	145	100.0	
%	0.0	8.3	73.1	17.9	0.7	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 6.2 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 125  
TOTAL NUMBER OF VALID HOURS= 2059  
TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -G-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	2	0	0	0	0	0	2	1.6	6.2
NNE	0	2	6	0	0	0	0	0	8	6.5	5.0
NE	0	1	21	0	0	0	0	0	22	17.9	5.6
ENE	0	5	23	0	0	0	0	0	28	22.8	4.5
E	0	4	12	1	0	0	0	0	17	13.8	4.5
ESE	0	3	13	0	0	0	0	0	16	13.0	4.5
SE	0	5	5	0	0	0	0	0	10	8.1	4.1
SSE	0	1	2	0	0	0	0	0	3	2.4	3.7
S	0	1	1	0	0	0	0	0	2	1.6	3.7
SSW	0	2	2	0	0	0	0	0	4	3.3	3.9
SW	0	1	0	0	0	0	0	0	1	0.8	1.2
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	2	0	0	0	0	0	2	1.6	4.6
WNW	0	2	0	0	0	0	0	0	2	1.6	1.8
NW	0	3	1	0	0	0	0	0	4	3.3	2.7
NNW	0	0	1	1	0	0	0	0	2	1.6	7.9
TOTAL	0	30	91	2	0	0	0	0	123	100.0	
%	0.0	24.4	74.0	1.6	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.6 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 125  
TOTAL NUMBER OF VALID HOURS= 2059  
TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

ALL CLASSES COMBINED

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	2	28	65	47	5	0	0	147	7.1	11.3
NNE	0	5	36	58	12	0	0	0	111	5.4	8.5
NE	0	4	58	48	16	0	0	0	126	6.1	8.2
ENE	0	15	56	53	27	1	0	0	152	7.4	8.5
E	0	8	52	36	66	12	3	0	177	8.6	11.4
ESE	0	6	57	67	76	15	0	0	221	10.7	11.3
SE	0	8	44	87	70	29	0	0	238	11.6	11.7
SSE	0	3	53	106	81	22	0	0	265	12.9	11.6
S	0	4	39	114	47	2	0	0	206	10.0	10.2
SSW	0	5	25	43	36	3	0	0	112	5.4	10.8
SW	0	2	15	32	8	2	0	0	59	2.9	9.4
WSW	0	4	12	8	5	1	0	0	30	1.5	8.2
W	0	3	12	1	0	0	0	0	16	0.8	5.1
WNW	0	9	16	0	0	0	0	0	25	1.2	4.0
NW	0	9	20	5	4	4	0	0	42	2.0	7.8
NNW	0	4	15	54	37	22	0	0	132	6.4	12.7
TOTAL	0	91	538	777	532	118	3	0	2059	100.0	
%	0.0	4.4	26.1	37.7	25.8	5.7	0.1	0.0	100.0		

AVE SPEED FOR THIS TABLE= 10.5 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 125  
 TOTAL NUMBER OF VALID HOURS= 2059  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2184

**Second Quarter 2000**  
**Joint Frequency Tables**

JOINT FREQUENCY TABLE

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STABILITY CLASS -A-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	8	4	0	0	0	12	2.9	12.4
NNE	0	0	0	1	3	0	0	0	4	1.0	15.4
NE	0	0	1	6	2	0	0	0	9	2.2	10.2
ENE	0	0	1	0	1	0	0	0	2	0.5	9.1
E	0	0	1	1	2	0	0	0	4	1.0	12.8
ESE	0	0	0	2	5	0	0	0	7	1.7	15.1
SE	0	0	1	10	31	3	0	0	45	11.0	14.6
SSE	0	0	1	20	51	7	0	0	79	19.4	14.8
S	0	0	1	91	102	7	0	0	201	49.3	13.0
SSW	0	0	3	16	8	0	0	0	27	6.6	10.6
SW	0	0	2	4	0	0	0	0	6	1.5	7.7
WSW	0	0	0	1	0	0	0	0	1	0.2	8.3
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	1	0	0	0	0	2	0.5	8.1
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	7	2	0	0	0	9	2.2	11.8
TOTAL	0	0	12	168	211	17	0	0	408	100.0	
%	0.0	0.0	2.9	41.2	51.7	4.2	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 13.2 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 41  
 TOTAL NUMBER OF VALID HOURS= 2143  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

STABILITY CLASS -B-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	5	2	0	0	0	8	4.9	10.3
NNE	0	0	2	6	0	0	0	0	8	4.9	8.8
NE	0	0	0	4	1	0	0	0	5	3.0	10.5
ENE	0	0	0	3	1	0	0	0	4	2.4	10.6
E	0	0	1	0	0	0	0	0	1	0.6	5.9
ESE	0	0	0	2	9	0	0	0	11	6.7	15.8
SE	0	0	3	16	18	5	0	0	42	25.6	13.5
SSE	0	0	2	12	21	0	0	0	35	21.3	13.1
S	0	0	1	15	12	1	0	0	29	17.7	11.8
SSW	0	0	1	6	0	0	0	0	7	4.3	8.3
SW	0	0	2	1	0	0	0	0	3	1.8	6.1
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	0	0	0	0	0	1	0.6	5.3
NW	0	0	1	3	0	0	0	0	4	2.4	9.4
NNW	0	0	2	4	0	0	0	0	6	3.7	8.6
TOTAL	0	0	17	77	64	6	0	0	164	100.0	
%	0.0	0.0	10.4	47.0	39.0	3.7	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 12.0 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 41  
 TOTAL NUMBER OF VALID HOURS= 2143  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2184

## JOINT FREQUENCY TABLE

STABILITY CLASS -C-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	3	7	0	0	0	0	10	5.7	8.6
NNE	0	0	2	3	0	0	0	0	5	2.9	7.4
NE	0	0	0	4	1	0	0	0	5	2.9	10.7
ENE	0	1	0	2	0	0	0	0	3	1.7	7.1
E	0	0	1	2	0	0	0	0	3	1.7	8.9
ESE	0	0	0	0	3	1	0	0	4	2.3	17.3
SE	0	0	2	26	26	3	0	0	57	32.6	12.9
SSE	0	0	1	17	28	1	0	0	47	26.9	12.9
S	0	0	4	12	4	0	0	0	20	11.4	9.8
SSW	0	0	2	1	0	0	0	0	3	1.7	8.1
SW	0	0	1	1	0	0	0	0	2	1.1	6.7
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	4	0	0	0	0	0	4	2.3	6.2
NW	0	1	3	1	0	0	0	0	5	2.9	6.4
NNW	0	0	4	3	0	0	0	0	7	4.0	7.8
TOTAL	0	2	27	79	62	5	0	0	175	100.0	
%	0.0	1.1	15.4	45.1	35.4	2.9	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.3 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 1  
TOTAL NUMBER OF INVALID HOURS= 41  
TOTAL NUMBER OF VALID HOURS= 2143  
TOTAL NUMBER OF HOURS FOR PERIOD= 2184

## JOINT FREQUENCY TABLE

STABILITY CLASS -D-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	8	14	10	1	0	0	33	5.5	11.0
NNE	0	0	11	12	4	0	0	0	27	4.5	8.6
NE	0	2	10	9	0	0	0	0	21	3.5	7.3
ENE	0	0	11	11	0	0	0	0	22	3.6	7.6
E	0	1	3	6	5	0	0	0	15	2.5	9.8
ESE	0	0	2	18	17	1	0	0	38	6.3	12.4
SE	0	0	6	59	59	5	0	0	129	21.4	12.6
SSE	0	0	7	86	103	2	1	0	199	32.9	12.8
S	0	0	6	46	27	2	0	0	81	13.4	11.4
SSW	0	0	3	7	2	0	0	0	12	2.0	9.5
SW	0	0	1	3	0	0	0	0	4	0.7	8.2
WSW	0	0	2	0	0	0	0	0	2	0.3	6.3
W	0	0	1	0	0	0	0	0	1	0.2	7.0
WNW	0	0	1	1	0	0	0	0	2	0.3	6.8
NW	0	0	2	1	2	0	0	0	5	0.8	10.6
NNW	0	1	6	2	3	1	0	0	13	2.2	9.5
TOTAL	0	4	80	275	232	12	1	0	604	100.0	
%	0.0	0.7	13.2	45.5	38.4	2.0	0.2	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.6 MPH

HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0

TOTAL NUMBER OF CALMS= 1

TOTAL NUMBER OF INVALID HOURS= 41

TOTAL NUMBER OF VALID HOURS= 2143

TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

STABILITY CLASS -E-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	2	17	6	1	1	0	0	27	4.6	7.3
NNE	0	2	13	10	0	0	0	0	25	4.2	6.5
NE	0	0	23	7	0	0	0	0	30	5.1	6.6
ENE	0	3	4	2	0	0	0	0	9	1.5	5.3
E	0	1	12	2	0	0	0	0	15	2.5	6.2
ESE	0	2	28	10	0	0	0	0	40	6.8	6.4
SE	0	2	62	52	5	0	0	0	121	20.5	8.0
SSE	0	0	68	104	13	0	0	0	185	31.4	8.7
S	0	0	18	61	15	0	0	0	94	16.0	9.7
SSW	0	0	8	16	0	0	0	0	24	4.1	8.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	1	0	0	0	0	0	1	0.2	5.3
WNW	0	2	2	0	0	0	0	0	4	0.7	4.6
NW	0	2	1	1	0	0	0	0	4	0.7	4.3
NNW	0	1	5	4	0	0	0	0	10	1.7	7.7
TOTAL	0	17	262	275	34	1	0	0	589	100.0	
%	0.0	2.9	44.5	46.7	5.8	0.2	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 8.0 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 41  
 TOTAL NUMBER OF VALID HOURS= 2143  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

STABILITY CLASS -F-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	1	7	0	1	0	0	0	9	7.4	6.8
NNE	0	3	4	0	0	0	0	0	7	5.7	4.5
NE	0	3	9	0	0	0	0	0	12	9.8	4.2
ENE	0	2	3	0	0	0	0	0	5	4.1	3.7
E	0	4	7	0	0	0	0	0	11	9.0	4.5
ESE	0	8	11	0	0	0	0	0	19	15.6	4.0
SE	0	4	28	0	0	0	0	0	32	26.2	4.5
SSE	0	0	11	1	0	0	0	0	12	9.8	5.5
S	0	1	1	0	0	0	0	0	2	1.6	3.5
SSW	0	0	1	0	0	0	0	0	1	0.8	4.9
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	1	1	0	0	0	0	0	2	1.6	4.4
NW	0	2	5	0	0	0	0	0	7	5.7	4.1
NNW	0	1	2	0	0	0	0	0	3	2.5	5.1
TOTAL	0	30	90	1	1	0	0	0	122	100.0	
%	0.0	24.6	73.8	0.8	0.8	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.6 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 41  
 TOTAL NUMBER OF VALID HOURS= 2143  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2184

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -G-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	5	2	1	0	0	0	0	8	9.9	3.9
NNE	0	4	5	4	0	0	0	0	13	16.0	4.9
NE	1	8	12	3	0	0	0	0	24	29.6	4.7
ENE	0	5	3	0	0	0	0	0	8	9.9	3.4
E	0	4	0	0	0	0	0	0	4	4.9	2.5
ESE	0	6	8	1	0	0	0	0	15	18.5	4.1
SE	0	1	3	0	0	0	0	0	4	4.9	4.2
SSE	0	0	1	0	0	0	0	0	1	1.2	5.9
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	3	0	0	0	0	0	0	3	3.7	3.2
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	1	0	0	0	0	0	1	1.2	4.0
TOTAL	1	36	35	9	0	0	0	0	81	100.0	
%	1.2	44.4	43.2	11.1	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.2 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 41  
 TOTAL NUMBER OF VALID HOURS= 2143  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2184

## JOINT FREQUENCY TABLE

-----  
ALL CLASSES COMBINED

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	8	38	41	18	2	0	0	107	5.0	9.1
NNE	0	9	37	36	7	0	0	0	89	4.2	7.4
NE	1	13	55	33	4	0	0	0	106	4.9	6.7
ENE	0	11	22	18	2	0	0	0	53	2.5	6.5
E	0	10	25	11	7	0	0	0	53	2.5	7.2
ESE	0	16	49	33	34	2	0	0	134	6.3	9.0
SE	0	7	105	163	139	16	0	0	430	20.1	11.0
SSE	0	0	91	240	216	10	1	0	558	26.0	11.6
S	0	1	31	225	160	10	0	0	427	19.9	11.7
SSW	0	0	18	46	10	0	0	0	74	3.5	9.2
SW	0	0	6	9	0	0	0	0	15	0.7	7.4
WSW	0	0	2	1	0	0	0	0	3	0.1	6.9
W	0	0	2	0	0	0	0	0	2	0.1	6.2
WNW	0	6	10	2	0	0	0	0	18	0.8	5.3
NW	0	5	12	6	2	0	0	0	25	1.2	6.8
NNW	0	3	20	20	5	1	0	0	49	2.3	8.8
TOTAL	1	89	523	884	604	41	1	0	2143	100.0	
%	0.0	4.2	24.4	41.3	28.2	1.9	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 10.2 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 1  
TOTAL NUMBER OF INVALID HOURS= 41  
TOTAL NUMBER OF VALID HOURS= 2143  
TOTAL NUMBER OF HOURS FOR PERIOD= 2184

**Third Quarter 2000**  
**Joint Frequency Tables**

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -A-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	4	3	1	1	0	0	9	1.8	9.8
NNE	0	0	1	4	2	0	0	0	7	1.4	10.1
NE	0	0	6	13	1	0	0	0	20	4.0	9.1
ENE	0	0	1	5	1	0	0	0	7	1.4	9.6
E	0	0	1	1	0	0	0	0	2	0.4	7.1
ESE	0	0	2	1	5	2	0	0	10	2.0	14.4
SE	0	0	2	27	11	1	0	0	41	8.2	11.4
SSE	0	0	4	29	15	0	0	0	48	9.7	11.6
S	0	0	11	151	47	0	0	0	209	42.1	11.2
SSW	0	0	13	76	4	0	0	0	93	18.7	9.8
SW	0	0	6	17	1	0	0	0	24	4.8	9.1
WSW	0	0	2	7	0	0	0	0	9	1.8	8.8
W	0	0	2	1	0	0	0	0	3	0.6	6.9
WNW	0	0	7	2	0	0	0	0	9	1.8	6.3
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	1	0	0	2	3	0	0	6	1.2	15.9
TOTAL	0	1	62	337	90	7	0	0	497	100.0	
%	0.0	0.2	12.5	67.8	18.1	1.4	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 10.7 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 77  
TOTAL NUMBER OF VALID HOURS= 2131  
TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

STABILITY CLASS -B-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	1	0	0	0	0	2	1.6	7.3
NNE	0	0	1	3	2	0	0	0	6	4.7	10.3
NE	0	0	1	7	2	0	0	0	10	7.8	9.8
ENE	0	0	1	5	0	0	0	0	6	4.7	9.3
E	0	0	1	0	1	0	0	0	2	1.6	9.3
ESE	0	0	2	2	1	0	0	0	5	3.9	8.7
SE	0	0	1	11	7	0	0	0	19	14.8	11.9
SSE	0	0	3	12	5	0	0	0	20	15.6	10.7
S	0	0	11	14	6	0	0	0	31	24.2	9.4
SSW	0	0	5	2	0	0	0	0	7	5.5	6.9
SW	0	0	0	4	0	0	0	0	4	3.1	8.4
WSW	0	0	4	3	0	0	0	0	7	5.5	7.4
W	0	0	2	2	0	0	0	0	4	3.1	6.2
WNW	0	0	2	0	0	0	0	0	2	1.6	5.3
NW	0	0	1	1	0	0	0	0	2	1.6	7.0
NNW	0	0	0	1	0	0	0	0	1	0.8	9.4
TOTAL	0	0	36	68	24	0	0	0	128	100.0	
%	0.0	0.0	28.1	53.1	18.8	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 9.5 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 77  
 TOTAL NUMBER OF VALID HOURS= 2131  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -C-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	2	1	0	1	0	0	4	3.5	10.0
NNE	0	0	3	3	0	0	0	0	6	5.3	8.3
NE	0	0	0	9	1	0	0	0	10	8.8	9.7
ENE	0	0	1	3	1	0	0	0	5	4.4	10.8
E	0	0	3	0	0	0	0	0	3	2.7	4.9
ESE	0	0	5	1	5	1	0	0	12	10.6	11.6
SE	0	0	4	11	4	0	0	0	19	16.8	10.1
SSE	0	0	0	6	1	0	0	0	7	6.2	11.1
S	0	0	7	12	2	0	0	0	21	18.6	9.0
SSW	0	0	3	5	0	0	0	0	8	7.1	8.5
SW	0	0	2	3	1	0	0	0	6	5.3	8.6
WSW	0	0	3	0	0	0	0	0	3	2.7	6.0
W	0	1	1	0	0	0	0	0	2	1.8	5.1
WNW	0	0	5	0	0	0	0	0	5	4.4	5.8
NW	0	0	1	0	0	0	0	0	1	0.9	5.3
NNW	0	0	0	0	1	0	0	0	1	0.9	16.3
TOTAL	0	1	40	54	16	2	0	0	113	100.0	
%	0.0	0.9	35.4	47.8	14.2	1.8	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 9.3 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 77  
TOTAL NUMBER OF VALID HOURS= 2131  
TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -D-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	1	5	5	1	2	0	0	14	4.2	9.8
NNE	0	0	4	13	1	0	0	0	18	5.4	9.0
NE	0	5	1	8	0	0	0	0	14	4.2	7.5
ENE	0	1	2	7	2	0	0	0	12	3.6	9.9
E	0	1	4	9	1	0	0	0	15	4.5	8.8
ESE	0	0	4	13	9	2	0	0	28	8.4	11.7
SE	0	1	8	28	6	0	0	0	43	13.0	9.8
SSE	0	2	12	57	5	0	0	0	76	22.9	9.4
S	0	1	6	55	3	0	0	0	65	19.6	9.8
SSW	0	0	2	11	0	0	0	0	13	3.9	9.8
SW	0	1	2	6	0	0	0	0	9	2.7	8.4
WSW	0	1	2	3	0	0	0	0	6	1.8	7.1
W	0	0	2	0	0	0	0	0	2	0.6	6.5
WNW	0	0	7	0	0	0	0	0	7	2.1	5.1
NW	0	0	1	0	0	0	0	0	1	0.3	6.4
NNW	0	0	2	0	7	0	0	0	9	2.7	13.4
TOTAL	0	14	64	215	35	4	0	0	332	100.0	
%	0.0	4.2	19.3	64.8	10.5	1.2	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 9.6 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 77  
 TOTAL NUMBER OF VALID HOURS= 2131  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -E-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	2	7	3	0	0	0	0	12	1.8	6.4
NNE	0	3	17	8	0	0	0	0	28	4.1	5.9
NE	0	3	15	6	1	0	0	0	25	3.7	6.5
ENE	0	3	7	3	0	0	0	0	13	1.9	5.6
E	0	5	15	4	0	0	0	0	24	3.5	5.5
ESE	0	3	19	3	0	0	0	0	25	3.7	5.3
SE	0	2	76	12	1	0	0	0	91	13.3	6.3
SSE	0	2	97	61	0	0	0	0	160	23.4	7.2
S	0	0	43	79	0	0	0	0	122	17.9	8.1
SSW	0	1	21	62	2	0	0	0	86	12.6	8.7
SW	0	1	4	32	0	0	0	0	37	5.4	9.6
WSW	0	2	4	11	0	0	0	0	17	2.5	7.5
W	0	0	14	1	0	0	0	0	15	2.2	5.8
WNW	0	1	6	0	0	0	0	0	7	1.0	4.3
NW	0	1	3	0	0	0	0	0	4	0.6	4.6
NNW	0	3	8	6	0	0	0	0	17	2.5	6.5
TOTAL	0	32	356	291	4	0	0	0	683	100.0	
%	0.0	4.7	52.1	42.6	0.6	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 7.2 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 77  
TOTAL NUMBER OF VALID HOURS= 2131  
TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

STABILITY CLASS -F-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	6	2	0	0	0	0	0	8	3.4	3.1
NNE	0	4	6	8	0	0	0	0	18	7.7	6.2
NE	0	11	9	0	0	0	0	0	20	8.5	3.7
ENE	0	8	4	0	0	0	0	0	12	5.1	3.3
E	0	7	6	1	0	0	0	0	14	6.0	3.9
ESE	0	22	18	0	0	0	0	0	40	17.0	3.7
SE	0	15	49	0	0	0	0	0	64	27.2	4.2
SSE	0	2	30	0	0	0	0	0	32	13.6	5.0
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	1	0	0	0	0	0	0	1	0.4	3.4
WSW	0	0	1	0	0	0	0	0	1	0.4	5.0
W	0	0	6	0	0	0	0	0	6	2.6	5.0
WNW	0	2	4	0	0	0	0	0	6	2.6	4.1
NW	0	1	4	0	0	0	0	0	5	2.1	4.1
NNW	0	3	5	0	0	0	0	0	8	3.4	3.7
TOTAL	0	82	144	9	0	0	0	0	235	100.0	
%	0.0	34.9	61.3	3.8	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.2 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 77  
 TOTAL NUMBER OF VALID HOURS= 2131  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -G-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	5	10	2	0	0	0	0	17	11.9	4.8
NNE	0	16	25	4	0	0	0	0	45	31.5	4.5
NE	0	13	6	0	0	0	0	0	19	13.3	3.4
ENE	0	13	1	0	0	0	0	0	14	9.8	2.9
E	0	11	12	1	0	0	0	0	24	16.8	3.8
ESE	0	5	2	0	0	0	0	0	7	4.9	3.2
SE	0	1	3	0	0	0	0	0	4	2.8	3.9
SSE	0	0	2	0	0	0	0	0	2	1.4	4.7
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	1	0	0	0	0	0	1	0.7	3.6
WNW	0	0	1	0	0	0	0	0	1	0.7	3.7
NW	0	3	1	0	0	0	0	0	4	2.8	3.7
NNW	0	1	4	0	0	0	0	0	5	3.5	4.1
TOTAL	0	68	68	7	0	0	0	0	143	100.0	
%	0.0	47.6	47.6	4.9	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.0 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 77  
TOTAL NUMBER OF VALID HOURS= 2131  
TOTAL NUMBER OF HOURS FOR PERIOD= 2208

## JOINT FREQUENCY TABLE

-----  
ALL CLASSES COMBINED

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	14	31	15	2	4	0	0	66	3.1	7.0
NNE	0	23	57	43	5	0	0	0	128	6.0	6.4
NE	0	32	38	43	5	0	0	0	118	5.5	6.6
ENE	0	25	17	23	4	0	0	0	69	3.2	6.5
E	0	24	42	16	2	0	0	0	84	3.9	5.4
ESE	0	30	52	20	20	5	0	0	127	6.0	7.5
SE	0	19	143	89	29	1	0	0	281	13.2	7.7
SSE	0	6	148	165	26	0	0	0	345	16.2	8.3
S	0	1	78	311	58	0	0	0	448	21.0	9.9
SSW	0	1	44	156	6	0	0	0	207	9.7	9.2
SW	0	3	14	62	2	0	0	0	81	3.8	9.1
WSW	0	3	16	24	0	0	0	0	43	2.0	7.5
W	0	1	28	4	0	0	0	0	33	1.5	5.7
WNW	0	3	32	2	0	0	0	0	37	1.7	5.2
NW	0	5	11	1	0	0	0	0	17	0.8	4.7
NNW	0	8	19	7	10	3	0	0	47	2.2	8.5
TOTAL	0	198	770	981	169	13	0	0	2131	100.0	
%	0.0	9.3	36.1	46.0	7.9	0.6	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 8.1 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 77  
TOTAL NUMBER OF VALID HOURS= 2131  
TOTAL NUMBER OF HOURS FOR PERIOD= 2208

**Fourth Quarter 2000**  
**Joint Frequency Tables**

## JOINT FREQUENCY TABLE

STABILITY CLASS -A-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	2	0	0	0	0	2	3.4	11.4
NNE	0	0	0	1	0	0	0	0	1	1.7	11.7
NE	0	0	1	0	0	0	0	0	1	1.7	7.1
ENE	0	0	0	1	0	0	0	0	1	1.7	10.6
E	0	0	0	0	2	0	0	0	2	3.4	13.1
ESE	0	0	0	0	1	0	0	0	1	1.7	13.9
SE	0	0	0	3	0	0	0	0	3	5.1	10.5
SSE	0	0	0	8	1	0	0	0	9	15.3	10.7
S	0	0	1	14	5	1	0	0	21	35.6	11.9
SSW	0	0	0	3	1	0	0	0	4	6.8	11.3
SW	0	0	1	0	0	0	0	0	1	1.7	7.4
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	1	0	0	0	0	0	1	1.7	6.7
WNW	0	0	2	1	3	0	0	0	6	10.2	11.1
NW	0	0	2	2	0	0	0	0	4	6.8	8.0
NNW	0	0	0	1	1	0	0	0	2	3.4	11.6
TOTAL	0	0	8	36	14	1	0	0	59	100.0	
%	0.0	0.0	13.6	61.0	23.7	1.7	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.0 MPH

HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0

TOTAL NUMBER OF CALMS= 0

TOTAL NUMBER OF INVALID HOURS= 0

TOTAL NUMBER OF VALID HOURS= 2208

TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

STABILITY CLASS -B-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	1	2	0	0	0	3	3.1	12.9
NNE	0	0	0	1	3	0	0	0	4	4.1	15.1
NE	0	0	0	1	1	0	0	0	2	2.0	13.1
ENE	0	0	0	3	1	0	0	0	4	4.1	10.6
E	0	0	0	5	0	0	0	0	5	5.1	9.9
ESE	0	0	1	3	10	0	0	0	14	14.3	12.5
SE	0	0	2	6	8	0	0	0	16	16.3	11.6
SSE	0	0	0	6	0	0	0	0	6	6.1	9.9
S	0	0	1	18	1	0	0	0	20	20.4	10.8
SSW	0	0	2	1	0	0	0	0	3	3.1	7.0
SW	0	0	1	1	0	0	0	0	2	2.0	7.1
WSW	0	0	1	1	0	0	0	0	2	2.0	7.1
W	0	0	0	1	0	0	0	0	1	1.0	11.3
WNW	0	0	2	1	1	0	0	0	4	4.1	9.4
NW	0	0	0	1	1	2	0	0	4	4.1	17.8
NNW	0	0	0	3	4	1	0	0	8	8.2	14.3
TOTAL	0	0	10	53	32	3	0	0	98	100.0	
%	0.0	0.0	10.2	54.1	32.7	3.1	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.6 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 2208  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

STABILITY CLASS -C-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	1	7	0	0	0	9	6.9	13.4
NNE	0	0	0	4	2	0	0	0	6	4.6	11.3
NE	0	1	1	6	0	0	0	0	8	6.2	7.8
ENE	0	0	5	7	1	0	0	0	13	10.0	9.0
E	0	0	1	4	3	0	0	0	8	6.2	10.6
ESE	0	0	0	0	12	0	0	0	12	9.2	15.1
SE	0	0	1	9	15	0	0	0	25	19.2	12.9
SSE	0	0	1	3	2	0	0	0	6	4.6	11.7
S	0	0	1	2	4	0	0	0	7	5.4	12.1
SSW	0	0	6	1	0	0	0	0	7	5.4	6.0
SW	0	0	2	0	0	0	0	0	2	1.5	6.3
WSW	0	0	1	0	0	0	0	0	1	0.8	4.5
W	0	0	1	1	0	0	0	0	2	1.5	7.3
WNW	0	0	5	0	1	0	0	0	6	4.6	7.0
NW	0	0	2	2	3	2	0	0	9	6.9	12.5
NNW	0	0	0	3	4	2	0	0	9	6.9	14.1
TOTAL	0	1	28	43	54	4	0	0	130	100.0	
%	0.0	0.8	21.5	33.1	41.5	3.1	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.3 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 2208  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -D-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	22	72	55	9	0	0	158	18.7	11.8
NNE	0	0	24	77	51	2	0	0	154	18.2	11.2
NE	0	0	20	30	13	0	0	0	63	7.5	9.7
ENE	0	0	9	26	7	0	0	0	42	5.0	9.8
E	0	1	8	34	24	1	0	0	68	8.1	11.4
ESE	0	0	5	25	21	0	0	0	51	6.0	11.5
SE	0	2	12	31	27	0	0	0	72	8.5	10.9
SSE	0	0	7	16	23	0	0	0	46	5.5	11.5
S	0	0	4	15	13	0	0	0	32	3.8	11.3
SSW	0	0	5	2	0	0	0	0	7	0.8	7.4
SW	0	1	1	7	1	0	0	0	10	1.2	9.3
WSW	0	0	0	1	2	0	0	0	3	0.4	12.3
W	0	1	2	1	1	0	0	0	5	0.6	7.4
WNW	0	1	4	6	1	0	0	0	12	1.4	7.6
NW	0	0	6	10	16	2	0	0	34	4.0	12.7
NNW	0	2	11	32	38	4	0	0	87	10.3	12.1
TOTAL	0	8	140	385	293	18	0	0	844	100.0	
%	0.0	0.9	16.6	45.6	34.7	2.1	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.2 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 0  
TOTAL NUMBER OF VALID HOURS= 2208  
TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -E-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	3	21	15	9	1	0	0	49	7.4	8.9
NNE	0	3	21	25	3	0	0	0	52	7.9	8.0
NE	0	5	18	20	2	0	0	0	45	6.8	7.3
ENE	0	4	29	24	0	0	0	0	57	8.7	6.9
E	0	1	45	23	0	0	0	0	69	10.5	7.0
ESE	0	2	47	34	4	0	0	0	87	13.2	7.6
SE	0	3	48	38	0	0	0	0	89	13.5	7.0
SSE	0	1	41	35	12	0	0	0	89	13.5	8.7
S	0	2	7	14	5	0	0	0	28	4.3	9.0
SSW	0	1	6	0	0	0	0	0	7	1.1	5.7
SW	0	0	3	4	1	0	0	0	8	1.2	8.8
WSW	0	0	2	1	0	0	0	0	3	0.5	5.4
W	0	1	4	1	0	0	0	0	6	0.9	5.5
WNW	0	0	5	1	0	0	0	0	6	0.9	5.5
NW	0	0	10	13	0	0	0	0	23	3.5	8.0
NNW	0	5	10	20	5	0	0	0	40	6.1	8.5
TOTAL	0	31	317	268	41	1	0	0	658	100.0	
%	0.0	4.7	48.2	40.7	6.2	0.2	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 7.7 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 0  
TOTAL NUMBER OF VALID HOURS= 2208  
TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -F-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	2	1	0	0	0	0	0	3	1.4	3.6
NNE	0	5	11	6	0	0	0	0	22	10.0	6.1
NE	0	5	13	1	0	0	0	0	19	8.7	4.5
ENE	0	6	19	2	0	0	0	0	27	12.3	4.7
E	0	7	20	0	0	0	0	0	27	12.3	4.8
ESE	0	8	24	1	0	0	0	0	33	15.1	4.5
SE	0	7	32	1	0	0	0	0	40	18.3	4.5
SSE	0	0	11	2	0	0	0	0	13	5.9	6.4
S	0	0	10	0	0	0	0	0	10	4.6	5.8
SSW	0	0	1	0	0	0	0	0	1	0.5	5.1
SW	0	0	1	0	0	0	0	0	1	0.5	5.4
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	2	0	0	0	0	0	2	0.9	4.0
WNW	0	3	2	0	0	0	0	0	5	2.3	3.1
NW	0	2	9	1	0	0	0	0	12	5.5	5.0
NNW	0	3	1	0	0	0	0	0	4	1.8	3.4
TOTAL	0	48	157	14	0	0	0	0	219	100.0	
%	0.0	21.9	71.7	6.4	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.9 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 2208  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -G-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	8	2	0	0	0	0	0	10	5.0	3.2
NNE	0	6	8	0	0	0	0	0	14	7.0	3.9
NE	0	18	18	0	0	0	0	0	36	18.0	3.9
ENE	0	15	18	0	0	0	0	0	33	16.5	3.8
E	0	8	18	1	0	0	0	0	27	13.5	4.7
ESE	0	11	19	0	0	0	0	0	30	15.0	4.0
SE	0	6	8	0	0	0	0	0	14	7.0	3.9
SSE	0	0	3	1	0	0	0	0	4	2.0	5.8
S	0	1	1	0	0	0	0	0	2	1.0	3.9
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	1	0	0	0	0	0	0	1	0.5	2.3
W	0	0	1	0	0	0	0	0	1	0.5	4.7
WNW	0	6	6	0	0	0	0	0	12	6.0	3.4
NW	0	4	5	0	0	0	0	0	9	4.5	3.7
NNW	0	5	2	0	0	0	0	0	7	3.5	3.4
TOTAL	0	89	109	2	0	0	0	0	200	100.0	
%	0.0	44.5	54.5	1.0	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 3.9 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 2208  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

JOINT FREQUENCY TABLE

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ALL CLASSES COMBINED

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	13	47	91	73	10	0	0	234	10.6	10.8
NNE	0	14	64	114	59	2	0	0	253	11.5	9.8
NE	0	29	71	58	16	0	0	0	174	7.9	7.2
ENE	0	25	80	63	9	0	0	0	177	8.0	6.9
E	0	17	92	67	29	1	0	0	206	9.3	8.1
ESE	0	21	96	63	48	0	0	0	228	10.3	8.3
SE	0	18	103	88	50	0	0	0	259	11.7	8.4
SSE	0	1	63	71	38	0	0	0	173	7.8	9.5
S	0	3	25	63	28	1	0	0	120	5.4	10.2
SSW	0	1	20	7	1	0	0	0	29	1.3	7.0
SW	0	1	9	12	2	0	0	0	24	1.1	8.4
WSW	0	1	4	3	2	0	0	0	10	0.5	7.4
W	0	2	11	4	1	0	0	0	18	0.8	6.4
WNW	0	10	26	9	6	0	0	0	51	2.3	6.4
NW	0	6	34	29	20	6	0	0	95	4.3	9.7
NNW	0	15	24	59	52	7	0	0	157	7.1	10.8
TOTAL	0	177	769	801	434	27	0	0	2208	100.0	
%	0.0	8.0	34.8	36.3	19.7	1.2	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 8.9 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 2208  
 TOTAL NUMBER OF HOURS FOR PERIOD= 2208

**First Quarter 2000**  
**Batch Release**  
**Joint Frequency Table**

The following periods represent times during which the release rates from one of the units was significantly higher than normal. Consequently, these meteorological data are submitted as batch release periods.

FROM	1/10/00	4:00	TO	1/10/00	16:00
FROM	1/11/00	5:00	TO	1/11/00	16:00
FROM	1/12/00	4:00	TO	1/12/00	17:00
FROM	1/13/00	1:00	TO	1/13/00	17:00
FROM	1/17/00	4:00	TO	1/17/00	17:00
FROM	1/18/00	4:00	TO	1/18/00	17:00
FROM	1/19/00	6:00	TO	1/19/00	17:00
FROM	2/07/00	9:00	TO	2/07/00	16:00
FROM	2/08/00	3:00	TO	2/08/00	17:00
FROM	2/09/00	5:00	TO	2/09/00	17:00
FROM	2/10/00	4:00	TO	2/10/00	7:00
FROM	2/14/00	11:00	TO	2/14/00	16:00
FROM	2/17/00	13:00	TO	2/17/00	16:00
FROM	2/21/00	8:00	TO	2/21/00	12:00
FROM	2/21/00	21:00	TO	2/22/00	1:00
FROM	2/22/00	10:00	TO	2/22/00	16:00
FROM	2/23/00	7:00	TO	2/23/00	17:00
FROM	2/27/00	21:00	TO	2/28/00	16:00
FROM	2/29/00	3:00	TO	2/29/00	13:00
FROM	3/01/00	9:00	TO	3/31/00	23:00

## JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -A-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	3	1	0	0	0	5	3.3	9.8
NNE	0	0	1	0	0	0	0	0	1	0.7	6.8
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	1	0	0	0	1	0.7	18.2
ESE	0	0	0	0	5	1	0	0	6	3.9	16.0
SE	0	0	0	2	8	17	0	0	27	17.6	18.8
SSE	0	0	0	6	13	5	0	0	24	15.7	14.9
S	0	0	3	23	22	1	0	0	49	32.0	12.4
SSW	0	0	0	3	8	1	0	0	12	7.8	14.9
SW	0	0	2	3	5	2	0	0	12	7.8	13.9
WSW	0	0	2	0	0	0	0	0	2	1.3	5.1
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	3	0	0	0	0	0	3	2.0	4.4
NW	0	0	2	0	1	3	0	0	6	3.9	14.8
NNW	0	0	0	0	1	4	0	0	5	3.3	19.7
TOTAL	0	0	14	40	65	34	0	0	153	100.0	
%	0.0	0.0	9.2	26.1	42.5	22.2	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 14.4 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 27  
TOTAL NUMBER OF VALID HOURS= 913  
TOTAL NUMBER OF HOURS FOR PERIOD= 940

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -B-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	3	1	0	0	0	5	7.1	9.5
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	2	1	0	0	0	3	4.3	11.4
E	0	0	0	1	1	2	0	0	4	5.7	15.5
ESE	0	0	1	3	8	1	0	0	13	18.6	14.1
SE	0	0	0	0	6	4	0	0	10	14.3	17.4
SSE	0	0	1	10	2	0	0	0	13	18.6	10.5
S	0	0	3	7	2	0	0	0	12	17.1	9.7
SSW	0	0	1	0	2	0	0	0	3	4.3	12.6
SW	0	0	0	0	1	0	0	0	1	1.4	15.8
WSW	0	0	1	0	0	0	0	0	1	1.4	6.6
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	2	0	0	0	0	0	2	2.9	5.2
NW	0	0	0	0	0	1	0	0	1	1.4	19.6
NNW	0	0	0	1	0	1	0	0	2	2.9	15.1
TOTAL	0	0	10	27	24	9	0	0	70	100.0	
%	0.0	0.0	14.3	38.6	34.3	12.9	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 12.5 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 27  
TOTAL NUMBER OF VALID HOURS= 913  
TOTAL NUMBER OF HOURS FOR PERIOD= 940

JOINT FREQUENCY TABLE

STABILITY CLASS -C-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	2	1	0	0	0	3	4.8	10.9
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	1	2	1	0	0	0	4	6.3	10.3
ENE	0	0	1	0	0	0	0	0	1	1.6	7.0
E	0	0	0	0	2	1	0	0	3	4.8	15.5
ESE	0	0	0	1	4	6	0	0	11	17.5	18.5
SE	0	0	0	3	6	4	0	0	13	20.6	15.6
SSE	0	0	3	4	3	1	0	0	11	17.5	11.2
S	0	0	1	5	0	0	0	0	6	9.5	8.7
SSW	0	0	1	0	0	0	0	0	1	1.6	3.7
SW	0	0	1	3	0	0	0	0	4	6.3	7.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	0	0	0	0	0	1	1.6	4.3
NW	0	0	1	1	0	0	0	0	2	3.2	7.8
NNW	0	0	0	0	1	2	0	0	3	4.8	19.0
TOTAL	0	0	10	21	18	14	0	0	63	100.0	
%	0.0	0.0	15.9	33.3	28.6	22.2	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 13.0 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 27  
TOTAL NUMBER OF VALID HOURS= 913  
TOTAL NUMBER OF HOURS FOR PERIOD= 940

JOINT FREQUENCY TABLE

STABILITY CLASS -D-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	1	3	10	12	2	0	0	28	8.9	12.7
NNE	0	1	4	3	4	0	0	0	12	3.8	9.3
NE	0	1	6	5	1	0	0	0	13	4.2	7.5
ENE	0	0	3	9	5	0	0	0	17	5.4	10.9
E	0	0	5	11	11	0	0	0	27	8.6	11.2
ESE	0	2	3	17	38	6	0	0	66	21.1	13.7
SE	0	0	6	23	16	1	0	0	46	14.7	11.4
SSE	0	0	6	18	8	1	0	0	33	10.5	10.5
S	0	2	3	12	4	0	0	0	21	6.7	9.3
SSW	0	0	2	5	3	0	0	0	10	3.2	10.7
SW	0	0	2	3	1	0	0	0	6	1.9	9.6
WSW	0	0	1	0	0	0	0	0	1	0.3	6.7
W	0	0	1	0	0	0	0	0	1	0.3	5.7
WNW	0	1	0	0	0	0	0	0	1	0.3	3.2
NW	0	1	2	2	0	0	0	0	5	1.6	7.3
NNW	0	1	1	6	11	7	0	0	26	8.3	14.9
TOTAL	0	10	48	124	114	17	0	0	313	100.0	
%	0.0	3.2	15.3	39.6	36.4	5.4	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.6 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 27  
 TOTAL NUMBER OF VALID HOURS= 913  
 TOTAL NUMBER OF HOURS FOR PERIOD= 940

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -E-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	3	9	3	0	0	0	15	6.7	10.2
NNE	0	0	4	2	0	0	0	0	6	2.7	6.7
NE	0	0	3	5	0	0	0	0	8	3.6	7.4
ENE	0	2	3	4	0	0	0	0	9	4.0	6.4
E	0	1	8	9	0	0	0	0	18	8.0	7.3
ESE	0	1	11	20	0	0	0	0	32	14.3	8.1
SE	0	3	10	17	3	0	0	0	33	14.7	8.0
SSE	0	2	20	19	9	0	0	0	50	22.3	8.6
S	0	1	9	9	0	0	0	0	19	8.5	7.3
SSW	0	2	6	2	0	0	0	0	10	4.5	6.1
SW	0	0	2	4	0	0	0	0	6	2.7	7.8
WSW	0	0	1	0	0	0	0	0	1	0.4	5.7
W	0	1	2	0	0	0	0	0	3	1.3	4.2
WNW	0	2	0	0	0	0	0	0	2	0.9	2.5
NW	0	3	0	1	0	0	0	0	4	1.8	4.1
NNW	0	1	1	6	0	0	0	0	8	3.6	8.8
TOTAL	0	19	83	107	15	0	0	0	224	100.0	
%	0.0	8.5	37.1	47.8	6.7	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 7.8 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 27  
TOTAL NUMBER OF VALID HOURS= 913  
TOTAL NUMBER OF HOURS FOR PERIOD= 940

JOINT FREQUENCY TABLE

STABILITY CLASS -F-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	1	3	1	0	0	0	0	5	12.2	5.2
NE	0	0	3	1	0	0	0	0	4	9.8	5.4
ENE	0	0	6	0	0	0	0	0	6	14.6	6.3
E	0	3	1	0	0	0	0	0	4	9.8	3.6
ESE	0	0	4	0	1	0	0	0	5	12.2	7.0
SE	0	0	7	0	0	0	0	0	7	17.1	5.0
SSE	0	0	3	2	0	0	0	0	5	12.2	6.5
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	1	0	0	0	0	0	0	1	2.4	3.5
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	2	0	0	0	0	0	2	4.9	4.8
W	0	0	1	0	0	0	0	0	1	2.4	4.1
WNW	0	1	0	0	0	0	0	0	1	2.4	2.7
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	6	30	4	1	0	0	0	41	100.0	
%	0.0	14.6	73.2	9.8	2.4	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 5.4 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 27  
 TOTAL NUMBER OF VALID HOURS= 913  
 TOTAL NUMBER OF HOURS FOR PERIOD= 940

JOINT FREQUENCY TABLE

STABILITY CLASS -G-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	3	0	0	0	0	0	3	6.1	6.4
NE	0	1	5	0	0	0	0	0	6	12.2	4.4
ENE	0	1	3	0	0	0	0	0	4	8.2	4.6
E	0	4	4	0	0	0	0	0	8	16.3	4.0
ESE	0	3	8	0	0	0	0	0	11	22.4	4.4
SE	0	4	4	0	0	0	0	0	8	16.3	4.2
SSE	0	1	0	0	0	0	0	0	1	2.0	1.7
S	0	1	0	0	0	0	0	0	1	2.0	3.3
SSW	0	2	0	0	0	0	0	0	2	4.1	2.5
SW	0	1	0	0	0	0	0	0	1	2.0	1.2
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	2	0	0	0	0	0	0	2	4.1	1.8
NW	0	2	0	0	0	0	0	0	2	4.1	1.8
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	22	27	0	0	0	0	0	49	100.0	
%	0.0	44.9	55.1	0.0	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.0 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 27  
 TOTAL NUMBER OF VALID HOURS= 913  
 TOTAL NUMBER OF HOURS FOR PERIOD= 940

JOINT FREQUENCY TABLE

ALL CLASSES COMBINED

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	1	8	27	18	2	0	0	56	6.1	11.4
NNE	0	2	15	6	4	0	0	0	27	3.0	7.5
NE	0	2	18	13	2	0	0	0	35	3.8	7.0
ENE	0	3	16	15	6	0	0	0	40	4.4	8.5
E	0	8	18	21	15	3	0	0	65	7.1	9.3
ESE	0	6	27	41	56	14	0	0	144	15.8	12.0
SE	0	7	27	45	39	26	0	0	144	15.8	12.1
SSE	0	3	33	59	35	7	0	0	137	15.0	10.4
S	0	4	19	56	28	1	0	0	108	11.8	10.3
SSW	0	5	10	10	13	1	0	0	39	4.3	10.1
SW	0	1	7	13	7	2	0	0	30	3.3	10.5
WSW	0	0	7	0	0	0	0	0	7	0.8	5.5
W	0	1	4	0	0	0	0	0	5	0.5	4.5
WNW	0	6	6	0	0	0	0	0	12	1.3	3.5
NW	0	6	5	4	1	4	0	0	20	2.2	9.0
NNW	0	2	2	13	13	14	0	0	44	4.8	14.6
TOTAL	0	57	222	323	237	74	0	0	913	100.0	
%	0.0	6.2	24.3	35.4	26.0	8.1	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 10.6 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 27  
 TOTAL NUMBER OF VALID HOURS= 913  
 TOTAL NUMBER OF HOURS FOR PERIOD= 940

**Second Quarter 2000**  
**Batch Release**  
**Joint Frequency Table**

The following periods represent times during which the release rates from one of the units was significantly higher than normal. Consequently, these meteorological data are submitted as batch release periods.

FROM	4/01/00	0:00	TO	4/25/00	7:00
FROM	4/25/00	11:00	TO	4/28/00	7:00
FROM	4/28/00	13:00	TO	5/02/00	8:00
FROM	5/02/00	11:00	TO	5/13/00	17:00
FROM	6/11/00	14:00	TO	6/11/00	16:00

JOINT FREQUENCY TABLE

STABILITY CLASS -A-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	8	4	0	0	0	12	6.7	12.4
NNE	0	0	0	1	3	0	0	0	4	2.2	15.4
NE	0	0	0	1	2	0	0	0	3	1.7	13.3
ENE	0	0	1	0	1	0	0	0	2	1.1	9.1
E	0	0	1	1	2	0	0	0	4	2.2	12.8
ESE	0	0	0	0	4	0	0	0	4	2.2	16.4
SE	0	0	1	4	14	2	0	0	21	11.7	14.5
SSE	0	0	1	12	37	3	0	0	53	29.6	14.8
S	0	0	1	13	46	0	0	0	60	33.5	13.6
SSW	0	0	1	2	1	0	0	0	4	2.2	9.7
SW	0	0	1	0	0	0	0	0	1	0.6	5.1
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	1	0	0	0	0	2	1.1	8.1
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	7	2	0	0	0	9	5.0	11.8
TOTAL	0	0	8	50	116	5	0	0	179	100.0	
%	0.0	0.0	4.5	27.9	64.8	2.8	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 13.7 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 30  
 TOTAL NUMBER OF VALID HOURS= 989  
 TOTAL NUMBER OF HOURS FOR PERIOD= 1019

JOINT FREQUENCY TABLE

STABILITY CLASS -B-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	1	5	2	0	0	0	8	10.3	10.3
NNE	0	0	0	2	0	0	0	0	2	2.6	10.3
NE	0	0	0	1	1	0	0	0	2	2.6	11.2
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	1	0	0	0	0	0	1	1.3	5.9
ESE	0	0	0	0	5	0	0	0	5	6.4	17.2
SE	0	0	3	5	8	4	0	0	20	25.6	13.7
SSE	0	0	2	6	13	0	0	0	21	26.9	13.1
S	0	0	0	4	5	0	0	0	9	11.5	12.2
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	1	0	0	0	0	0	1	1.3	4.1
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	0	0	0	0	0	1	1.3	5.3
NW	0	0	1	2	0	0	0	0	3	3.8	9.8
NNW	0	0	1	4	0	0	0	0	5	6.4	9.2
TOTAL	0	0	11	29	34	4	0	0	78	100.0	
%	0.0	0.0	14.1	37.2	43.6	5.1	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 12.3 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 30  
 TOTAL NUMBER OF VALID HOURS= 989  
 TOTAL NUMBER OF HOURS FOR PERIOD= 1019

JOINT FREQUENCY TABLE

STABILITY CLASS -C-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	2	7	0	0	0	0	9	11.7	9.1
NNE	0	0	0	2	0	0	0	0	2	2.6	8.9
NE	0	0	0	1	0	0	0	0	1	1.3	9.3
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	1	1	0	0	0	0	2	2.6	7.3
ESE	0	0	0	0	3	0	0	0	3	3.9	16.6
SE	0	0	2	11	14	2	0	0	29	37.7	12.7
SSE	0	0	0	9	14	0	0	0	23	29.9	12.8
S	0	0	0	1	1	0	0	0	2	2.6	11.1
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	0	0	0	0	0	1	1.3	7.5
NW	0	0	1	0	0	0	0	0	1	1.3	7.2
NNW	0	0	2	2	0	0	0	0	4	5.2	8.6
TOTAL	0	0	9	34	32	2	0	0	77	100.0	
%	0.0	0.0	11.7	44.2	41.6	2.6	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.8 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 30  
 TOTAL NUMBER OF VALID HOURS= 989  
 TOTAL NUMBER OF HOURS FOR PERIOD= 1019

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -D-  
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PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	6	13	10	1	0	0	30	9.6	11.5
NNE	0	0	8	7	4	0	0	0	19	6.1	9.1
NE	0	1	6	3	0	0	0	0	10	3.2	6.5
ENE	0	0	8	6	0	0	0	0	14	4.5	7.5
E	0	1	1	4	3	0	0	0	9	2.9	10.2
ESE	0	0	2	9	13	1	0	0	25	8.0	12.6
SE	0	0	3	37	30	0	0	0	70	22.4	12.2
SSE	0	0	5	36	48	0	1	0	90	28.8	12.7
S	0	0	3	14	10	0	0	0	27	8.6	10.9
SSW	0	0	0	3	0	0	0	0	3	1.0	9.9
SW	0	0	1	0	0	0	0	0	1	0.3	6.7
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	1	0	0	0	0	0	1	0.3	7.0
WNW	0	0	0	1	0	0	0	0	1	0.3	8.2
NW	0	0	2	1	2	0	0	0	5	1.6	10.6
NNW	0	1	1	2	3	1	0	0	8	2.6	11.9
TOTAL	0	3	47	136	123	3	1	0	313	100.0	
%	0.0	1.0	15.0	43.5	39.3	1.0	0.3	0.0	100.0		

AVE SPEED FOR THIS TABLE= 11.5 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 1  
TOTAL NUMBER OF INVALID HOURS= 30  
TOTAL NUMBER OF VALID HOURS= 989  
TOTAL NUMBER OF HOURS FOR PERIOD= 1019

JOINT FREQUENCY TABLE

STABILITY CLASS -E-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	1	12	5	1	1	0	0	20	9.3	8.0
NNE	0	2	8	0	0	0	0	0	10	4.7	5.1
NE	0	0	11	2	0	0	0	0	13	6.1	6.3
ENE	0	1	2	0	0	0	0	0	3	1.4	4.7
E	0	1	6	0	0	0	0	0	7	3.3	5.6
ESE	0	1	4	6	0	0	0	0	11	5.1	7.0
SE	0	0	22	30	3	0	0	0	55	25.7	8.4
SSE	0	0	17	27	5	0	0	0	49	22.9	9.1
S	0	0	7	18	0	0	0	0	25	11.7	8.9
SSW	0	0	3	4	0	0	0	0	7	3.3	7.3
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	1	2	0	0	0	0	0	3	1.4	5.2
NW	0	1	0	1	0	0	0	0	2	0.9	5.1
NNW	0	0	5	4	0	0	0	0	9	4.2	8.1
TOTAL	0	8	99	97	9	1	0	0	214	100.0	
%	0.0	3.7	46.3	45.3	4.2	0.5	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 8.0 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 30  
 TOTAL NUMBER OF VALID HOURS= 989  
 TOTAL NUMBER OF HOURS FOR PERIOD= 1019

JOINT FREQUENCY TABLE

STABILITY CLASS -F-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	7	0	1	0	0	0	8	12.3	7.3
NNE	0	0	3	0	0	0	0	0	3	4.6	5.3
NE	0	2	8	0	0	0	0	0	10	15.4	4.2
ENE	0	2	1	0	0	0	0	0	3	4.6	3.3
E	0	3	3	0	0	0	0	0	6	9.2	4.2
ESE	0	2	5	0	0	0	0	0	7	10.8	4.2
SE	0	2	10	0	0	0	0	0	12	18.5	4.8
SSE	0	0	4	1	0	0	0	0	5	7.7	5.6
S	0	1	1	0	0	0	0	0	2	3.1	3.5
SSW	0	0	1	0	0	0	0	0	1	1.5	4.9
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	1	0	0	0	0	0	1	1.5	6.3
NW	0	0	4	0	0	0	0	0	4	6.2	4.8
NNW	0	1	2	0	0	0	0	0	3	4.6	5.1
TOTAL	0	13	50	1	1	0	0	0	65	100.0	
%	0.0	20.0	76.9	1.5	1.5	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.9 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 30  
 TOTAL NUMBER OF VALID HOURS= 989  
 TOTAL NUMBER OF HOURS FOR PERIOD= 1019

## JOINT FREQUENCY TABLE

STABILITY CLASS -G-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	2	2	1	0	0	0	0	5	7.9	4.5
NNE	0	3	4	4	0	0	0	0	11	17.5	5.2
NE	1	2	9	3	0	0	0	0	15	23.8	5.6
ENE	0	4	3	0	0	0	0	0	7	11.1	3.6
E	0	3	0	0	0	0	0	0	3	4.8	2.5
ESE	0	5	8	1	0	0	0	0	14	22.2	4.1
SE	0	0	3	0	0	0	0	0	3	4.8	4.6
SSE	0	0	1	0	0	0	0	0	1	1.6	5.9
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	3	0	0	0	0	0	0	3	4.8	3.2
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	1	0	0	0	0	0	1	1.6	4.0
TOTAL	1	22	31	9	0	0	0	0	63	100.0	
%	1.6	34.9	49.2	14.3	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 4.6 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 1  
TOTAL NUMBER OF INVALID HOURS= 30  
TOTAL NUMBER OF VALID HOURS= 989  
TOTAL NUMBER OF HOURS FOR PERIOD= 1019

JOINT FREQUENCY TABLE

ALL CLASSES COMBINED

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	3	30	39	18	2	0	0	92	9.3	9.8
NNE	0	5	23	16	7	0	0	0	51	5.2	7.8
NE	1	5	34	11	3	0	0	0	54	5.5	6.4
ENE	0	7	15	6	1	0	0	0	29	2.9	5.9
E	0	8	13	6	5	0	0	0	32	3.2	7.3
ESE	0	8	19	16	25	1	0	0	69	7.0	9.9
SE	0	2	44	87	69	8	0	0	210	21.2	11.1
SSE	0	0	30	91	117	3	1	0	242	24.5	12.3
S	0	1	12	50	62	0	0	0	125	12.6	11.8
SSW	0	0	5	9	1	0	0	0	15	1.5	8.3
SW	0	0	3	0	0	0	0	0	3	0.3	5.3
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	1	0	0	0	0	0	1	0.1	7.0
WNW	0	4	6	2	0	0	0	0	12	1.2	5.7
NW	0	1	8	4	2	0	0	0	15	1.5	7.9
NNW	0	2	12	19	5	1	0	0	39	3.9	9.6
TOTAL	1	46	255	356	315	15	1	0	989	100.0	
%	0.1	4.7	25.8	36.0	31.9	1.5	0.1	0.0	100.0		

AVE SPEED FOR THIS TABLE= 10.3 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 1  
 TOTAL NUMBER OF INVALID HOURS= 30  
 TOTAL NUMBER OF VALID HOURS= 989  
 TOTAL NUMBER OF HOURS FOR PERIOD= 1019

**Third Quarter 2000**  
**Batch Release**  
**Joint Frequency Table**

The following periods represent times during which the release rates from one of the units was significantly higher than normal. Consequently, these meteorological data are submitted as batch release periods.

FROM 9/12/00 12:00 TO 9/12/00 14:00

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -A-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0	0.0
S	0	0	1	0	0	0	0	0	1	50.0	6.5
SSW	0	0	1	0	0	0	0	0	1	50.0	7.2
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	2	0	0	0	0	0	2	100.0	
%	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 6.8 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 0  
TOTAL NUMBER OF VALID HOURS= 3  
TOTAL NUMBER OF HOURS FOR PERIOD= 3

JOINT FREQUENCY TABLE

STABILITY CLASS -B-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0	0.0
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	0	0	0	0	0	0	0	0.0	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

AVE SPEED FOR THIS TABLE= 0.0 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 3  
 TOTAL NUMBER OF HOURS FOR PERIOD= 3

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -C-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	1	0	0	0	0	1	100.0	8.9
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	0	1	0	0	0	0	1	100.0	
%	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 8.9 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 3  
 TOTAL NUMBER OF HOURS FOR PERIOD= 3

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -D-  
-----

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5 -	3.6 - 7.5 -	7.6 -12.5 -	12.6 -18.5 -	18.6 -24.5 -	24.6 -32.5 -	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0	0.0
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	0	0	0	0	0	0	0	0.0	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

AVE SPEED FOR THIS TABLE= 0.0 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 0  
TOTAL NUMBER OF VALID HOURS= 3  
TOTAL NUMBER OF HOURS FOR PERIOD= 3

JOINT FREQUENCY TABLE

STABILITY CLASS -E-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0	0.0
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	0	0	0	0	0	0	0	0.0	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

AVE SPEED FOR THIS TABLE= 0.0 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 3  
 TOTAL NUMBER OF HOURS FOR PERIOD= 3

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -F-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0	0.0
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	0	0	0	0	0	0	0	0.0	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

AVE SPEED FOR THIS TABLE= 0.0 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 3  
 TOTAL NUMBER OF HOURS FOR PERIOD= 3

JOINT FREQUENCY TABLE

-----  
STABILITY CLASS -G-

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0	0.0
S	0	0	0	0	0	0	0	0	0	0.0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	0	0	0	0	0	0	0	0.0	
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

AVE SPEED FOR THIS TABLE= 0.0 MPH  
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
TOTAL NUMBER OF CALMS= 0  
TOTAL NUMBER OF INVALID HOURS= 0  
TOTAL NUMBER OF VALID HOURS= 3  
TOTAL NUMBER OF HOURS FOR PERIOD= 3

JOINT FREQUENCY TABLE

ALL CLASSES COMBINED

PRIMARY TOWER

WIND SPEED (MPH)

DIR (FROM)	CALM	CALM+ - 3.5	3.6 - 7.5	7.6 -12.5	12.6 -18.5	18.6 -24.5	24.6 -32.5	32.6+	TOTAL	%	AVE SPEED
N	0	0	0	0	0	0	0	0	0	0.0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0	0.0
NE	0	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0	0.0
E	0	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0	0.0
SE	0	0	0	0	0	0	0	0	0	0.0	0.0
SSE	0	0	0	1	0	0	0	0	1	33.3	8.9
S	0	0	1	0	0	0	0	0	1	33.3	6.5
SSW	0	0	1	0	0	0	0	0	1	33.3	7.2
SW	0	0	0	0	0	0	0	0	0	0.0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0	0.0
W	0	0	0	0	0	0	0	0	0	0.0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0	0.0
TOTAL	0	0	2	1	0	0	0	0	3	100.0	
%	0.0	0.0	66.7	33.3	0.0	0.0	0.0	0.0	100.0		

AVE SPEED FOR THIS TABLE= 7.5 MPH  
 HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION= 0  
 TOTAL NUMBER OF CALMS= 0  
 TOTAL NUMBER OF INVALID HOURS= 0  
 TOTAL NUMBER OF VALID HOURS= 3  
 TOTAL NUMBER OF HOURS FOR PERIOD= 3

**Fourth Quarter 2000**  
**Batch Release**  
**Joint Frequency Table**

No releases were made during the fourth quarter that met the STP definition of a batch release.