STP Nuclear Operating Company

2010

South Texas Project Electric Generating Station

Radioactive Effluent Release Report

STI: 32858313
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Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

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U. S. Nuclear Regulatory Commission
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South Texas Project
Units 1 & 2
Docket Nos. STN 50-498 & 50-499
2010 Radioactive Effluent Release Report

Pursuant to the South Texas Project Technical Specification 6.9.1.4 and 10 CFR 50.36a, STP Nuclear Operating Company provides the attached 2010 Radioactive Effluent Release Report. The report covers the period from January 1, 2010, to December 31, 2010.

There are no commitments included in this report.

If there are any questions on this report, please contact either Philip Walker at (361) 972-8392 or me at (361) 972-7172.

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Attachment: 2010 Radioactive Effluent Release Report

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2010
Radioactive Effluent Release Report

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

Completed by
Generation in accordance with
Technical Specifications
for
United States Nuclear Regulatory Commission
License Nos.
NPF-76 & NPF-80
April 2011

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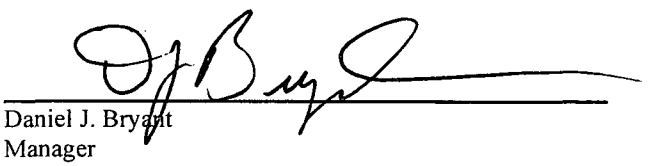
Approved by: 
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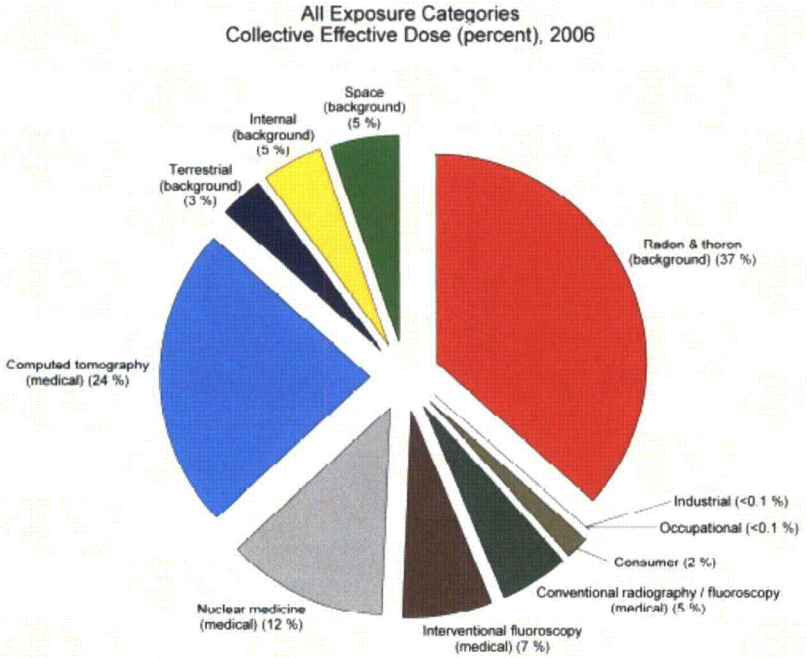
Report Summary

During 2010, 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 2010 due to operation of the South Texas Project was less than one millirem. For reference, this dose may be compared to the average annual radiation exposure of 620 millirem to people in the United States from all sources. Of that 620 millirem, natural radiation sources in the environment accounted for 50% of the radiation exposure, whilst 48% of the exposure occurred from medical procedures. Nuclear power operations contributed less than one millirem.

Figure 1-1



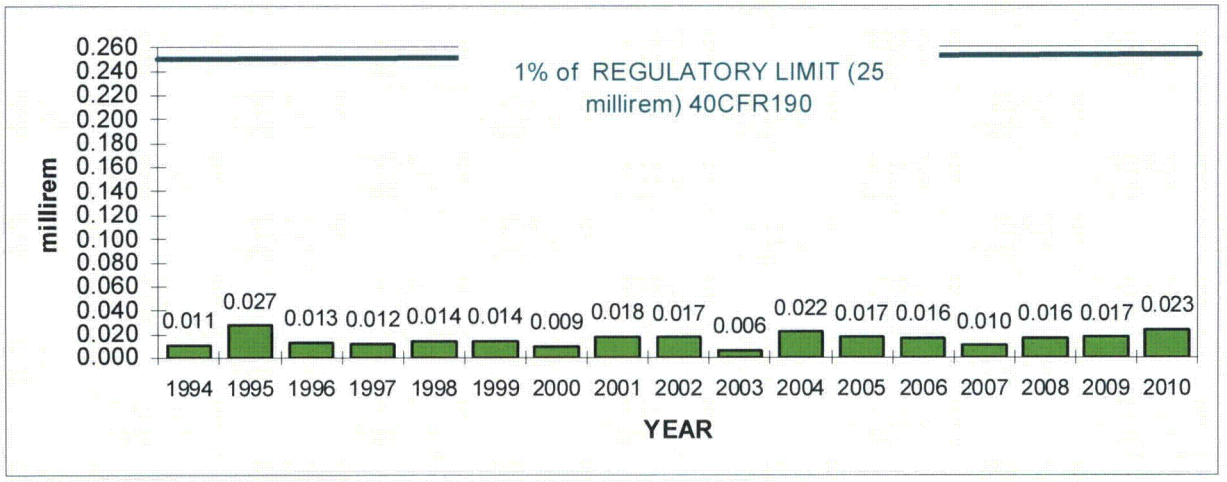
*NCRP (2006). National Council on Radiation Protection and Measurements, *Ionizing Radiation Exposure of the Population of the United States*, (Bethesda, Maryland), NCRP Report No. 160.

During 2010, the estimated total body dose to a hypothetical Member of the Public with the highest probability for exposure from radioactive effluents and direct radiation was 0.023 millirem. This total represents approximately 0.09% of the limits of 40 C.F.R. §190. Based on our 2010 Land Use Census, real individuals reside in the West by Southwest Sector, approximately 4,000 meters (2.5 miles) from the site. For dose calculation purposes, the residents at this location are characterized as the theoretically highest exposed individual with regard to food consumption, occupancy, and other uses of the areas in the plant vicinity. Our dose model assumes that this theoretically highest exposed individual may consume the maximum amount of food with all the food being grown or grazed at the residence. This individual receives shoreline exposure from Little Robbins Slough for 12 hours per year and consumes 21 kilograms (46 pounds) of fish taken from Little Robbins Slough. This individual receives a submersion dose from noble gases and dose from inhaled radioactive particulates, radioiodines, and tritium. This hypothetical adult is assumed to consume 64

kilograms (140 pounds) of vegetables grown at the residence and consumes 110 kilograms (240 pounds) of meat from livestock grazed at the residence. This estimated total body dose is calculated using models and exposure pathways described in our Offsite Dose Calculation Manual for a hypothetical individual offsite. Other dose estimates for Members of the Public on-site are listed in the report using exposure pathways not addressed by standard dose calculation methods.

Doses from 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 figure. A large fraction of the Total Body Dose was due to carbon-14 reported in gaseous effluents. In previous years carbon-14 was not reported. Members of the public received negligible additional radiation due to the operation of the South Texas Project. This Radioactive Effluent Release Report summarizes the data describing the radioactive liquid and gaseous releases from the South Texas Project Electric Generating Station during 2010. The radioactive effluents from the South Texas Project are effectively monitored and controlled in accordance with regulatory requirements.

FIGURE 1-2 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.

Prior to and during power operation, the South Texas Project is required to evaluate radioactive material in the environment. We are committed to sampling and analyzing environmental samples for radioactivity to support our Radiological Environmental Monitoring Program. The results of these environmental samples are reported in our Annual Environmental Operating Report. These environmental measurements affirm the accuracy of our sampling and analysis program.

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 credible paths for radioactive material 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 or approximately an additional day and a half of radiation exposure from natural radiation sources. 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 Radioactive Effluent Release Report is submitted for the period January 1, 2010, through December 31, 2010, 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 2010. 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. Table 1-1 lists a brief summary of the radioactive effluents and solid waste attributable to the station.

Table 1-1

TYPE OF RADIOACTIVE MATERIAL	EFFLUENT TYPE	DESTINATION	VOLUME CUBIC METER	CURIES
NOBLE GAS	GAS	OFFSITE	6.0E+09[2]	3.3E+01
PARTICULATE AND IODINES	GAS	OFFSITE	6.0E+09[2]	1.8E-03
TRITIUM & CARBON-14	GAS	OFFSITE	6.0E+09[2]	8.8E+01
TRITIUM	LIQUID	OFFSITE	4.8E+06[3]	2.8E+02[5]
FISSION AND ACTIVATION PRODUCTS	LIQUID	OFFSITE	4.8E+06[3]	1.8E-04[5]
TRITIUM	LIQUID	ON-SITE	3.0E+04[4]	2.2E+03
FISSION AND ACTIVATION PRODUCTS[1]	LIQUID	ON-SITE	3.0E+04[4]	2.6E-02
SPENT RESINS AND FILTERS	SOLID	FOR BURIAL	0.0E+00	0.0E+00
DRY COMPRESSIBLE WASTE	SOLID	FOR BURIAL	9.4E+01	6.6E-01
OTHER WASTE (LOW LEVEL SECONDARY RESIN, AND SLUDGE)	SOLID	FOR BURIAL	6.48E+01	1.3E-04
[1]Excludes dissolved and entrained gases. [2]Unit Vent Release Volume for Units 1 and 2. [3]Estimated MCR seepage to identified receptors.			[4]Total volume of liquid radioactive effluents discharged to the MCR. [5]Reference ODCM, Table B4-1 for Matagorda Bay.	

Tritium was the largest contributor to the offsite doses from radioactive liquid 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 (620 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 49,500,000 square meters (12,220 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 currently owned by NRG South Texas LP, the City Public Service Board of San Antonio (CPS), and the City of Austin Texas (GOA) as tenants in common. The Houston Lighting & Power Company was the original project manager of the South Texas Project and was responsible for the engineering, design, licensing, construction, startup, and initial operation of the the two unit facility. In 1997, the STP Nuclear Operating Company, assumed operational control South Texas Project and responsibility for implementation of the Radioactive Effluent Control Program.

The South Texas Project has two Westinghouse pressurized water reactors. The nominal net electrical capacity of each unit is 1,250 megawatts-electric (MWe). 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. The South Texas Project initiated project activities in 2008 to pursue renewal of the operating licenses for Units 1 and 2 from the Nuclear Regulatory Commission (NRC). The license renewal application was submitted to the Nuclear Regulatory Commission in October of 2010 to request authorization to operate STP, Units 1 and 2, for an additional 20 years beyond the period specified in the current licenses. The Nuclear Regulatory Commission determined that the South Texas Project submittal was sufficient to enable them to undertake a review of the application. The Nuclear Regulatory Commission review process is intended to ensure that the plant's original design and current conditions and programs can allow the facility to continue operating safely beyond its original license. The combined units currently produce enough electricity to serve more than two million homes and businesses throughout Texas. With nearly 1,200 baseline employees, the STP Nuclear Operating Company is the largest employer and source of revenue for Matagorda County.

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 each reactor coolant system with both samples being collected during August 2010.

Reactor Coolant Liquid including tritium, fission products (excluding radioiodines), and corrosion and activation products

E-bar (Million Electron Volts/Disintegration)	0.074	Unit 1
	0.092	Unit 2

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.

Gaseous Effluents only Noble Gases

E-bar (Million Electron Volts/Disintegration)	0.72	Unit 1
	0.34	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, Tritium, Iodines and Particulates

Liquid Effluents: Fission and Activation Products, Tritium, Dissolved and Entrained Gases

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 Gaseous Releases from the Reactor Containment Building

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 radioactivity is 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 grab sample results of the Reactor Containment Building atmosphere are used to quantify the radioactive material 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. Continuous sampling for particulates and iodine is also performed on effluent streams. These samples are analyzed for tritium and gamma radionuclides, as

described above for gaseous releases. Strontium-89, Strontium-90, and gross alpha analyses were performed by the on-site Radiological Services Laboratory.

Noble gas quantification is performed by the plant radiation monitoring system using noble gas grab sample results and the gross noble gas release rate monitor.

Secondary system liquid grab samples in conjunction with the mass of the secondary coolant lost are used for quantifying secondary steam releases. The radioactive material in the steam is based on grab sample results of the secondary liquid. The secondary liquid is analyzed for gamma emitters and tritium.

Liquid Effluents

Analytical Methods For Liquid Releases

Liquid batch releases include waste liquid treated by the liquid waste processing system and secondary system chemical regeneration waste. Liquid effluents resulting from primary to secondary leakage or other plant operations are continuously monitored and 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 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 a 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 radioactive material concentrations. Batch times represent the actual period of releases and the periods that the purge valves were open.

Liquid (Unit 1)

Liquid (Unit 1)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
a. Number of batch releases	14	9	21	15
b. Total time period for batch releases (minutes)	881	554	1374	945
c. Maximum time period for a batch release (minutes)	69	67	116	69
d. Average time period for batch releases (minutes)	63	62	65	63
e. Minimum time period for a batch release (minutes)	60	54	55	47

Gaseous (Unit 1)

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

Liquid (Unit 2)

Liquid (Unit 2)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
a. Number of batch releases	24	19	9	24
b. Total time period for batch releases (minutes)	1427	1145	535	1455
c. Maximum time period for a batch release (minutes)	64	64	64	64
d. Average time period for batch releases (minutes)	59	60	59	61
e. Minimum time period for a batch release (minutes)	41	47	53	47

Gaseous (Unit 2)

Gaseous (Unit 2)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
a. Number of batch releases	2	7	0	0
b. Total time period for batch releases (minutes)	5880	40440	0	0
c. Maximum time period for a batch release (minutes)	3120	13800	0	0
d. Average time period for batch releases (minutes)	2940	5777	0	0
e. Minimum time period for a batch release (minutes)	2760	1020	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 ± 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 ± 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)	± 100%
Fission and Activation Gases High Activity (greater than or equal to 10 microcurie per second)	± 20%
Iodines	± 25%
Particulates	± 25%
Tritium	± 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 with determining the volume of solid radioactive waste shipments is estimated to be ± 1%. The **error** associated with determining the filter media, spent primary resins, and spent secondary resins radioactivity and radioactivity from other solid radioactive waste shipments 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 with determining the radioactivity of dry active solid radioactive waste shipments is estimated to be within a factor of three of the real value.

Solid Waste Shipments

A total of seventeen 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 Section 6, Solid Waste and Irradiated Fuel Shipments. This data is based upon waste generated from units one and two.

Radiological Impact on Man

The data for the period January 1, 2010, through December 31, 2010, 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[1] 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

[1] 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 2010. 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 2010 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 2010. These dilution water flows were also used for estimating individual dose due to shoreline deposits. The radioactive material reported in the Liquid Effluent tables is the amount released to the Main Cooling Reservoir and does not contribute to dose until the radioactive material is released to unrestricted areas. In order to estimate the doses due to liquid effluents, the radioactive material reported must be adjusted by the values listed in the Offsite Dose Calculation Manual, Table B4-1, "Radionuclide Fractions N(i), Reaching Off-site Bodies of Water".

Meteorological Data

The **2010 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 reactor containment building fans were operating to remove radioactive material from the containment for personnel protection reasons. These containment purges are classified as batch releases.

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 Outside the Site Boundary

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 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 2010, Thermoluminescent Dosimeters were placed along the protected area fence or the concrete intrusion barriers surrounding Units 1 and 2 of the South Texas Project, on the fence of the Onsite Staging Facility (Outside Storage), along the walls of OSF Warehouse D, and around the Old Steam Generator Storage Facility 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 2010, Thermoluminescent Dosimeter measurements were typical of historical background readings.

In accordance with the ODCM, the dose due to direct radiation can be estimated taking the highest TLD measurement, less background, and correcting for the distance to the site boundary using

$$Dose_{direct} = TLD * (PA)^2 / (RD)^2$$

Where

TLD = background corrected TLD annual dose, mR/yr
PA = distance from source of radiation to the TLD location, meters
RD = distance from the source of radiation to the closest site boundary, meters

The TLD average dose rate is the average of the four quarterly values for the highest location less the quarterly average background at the site boundary. The highest average TLD dose rate was 52.4 mR/quarter for station #07 which is located in the vicinity of the Units 1 and 2 old reactor vessel heads stored in the Unit 2 radioactive waste processing yard, as shown in Figure 8-1. The value for TLD may be calculated as shown below where the historical site boundary background of 15.4 mR/quarter is used to find the net rate attributable to waste stored onsite.

TLD = 52.4 – 15.4 = 37 mR/quarter

or

TLD = (37 mR/quarter) * (4 quarters/yr) = 148 mrem/yr assuming a mR is about equal to a mrem

The approximate distances PA and RD are estimated using field measurements and global positioning satellite technology. The total dose to a hypothetical member of the public at the site boundary could be calculated as below:

$Dose_{direct}$ = (148 mrem/yr) * (106meters)^2 / (1600 meters)^2 = 0.650 mrem/yr

This assumes someone is positioned permanently at the fence East of the Units. A real person might traverse this area twice daily (to and from work) for a total exposure time of

Exposure time (hypothetical person) = (250 work days per year) * (1 minutes per trip) * (2 trips per day)

Exposure time (hypothetical person) = 500 minutes = 0.00095 yr

Dosedirect = 0.650 mrem/yr * 0.00095 yr = 0.00062 mrem in 2010

In summary, a realistic dose of 0.00062 mrem was possible to a member of the public offsite in 2010 although a hypothetical maximum annual dose rate of 0.650 mrem/yr was calculated at the nearest offsite location.

Dose to Member of the Public from Direct Radiation Inside the Site Boundary

A hypothetical Member of the Public inside the site boundary but outside the protected area fence could receive less than one millirem from direct radiation. The most exposed employee on site who is also a member of the public would be a grounds keeper whose job required him to work in the vicinity of the Units 1 and 2 old reactor vessel heads stored in the Unit 2 radioactive waste processing yard during 2010. If such an individual worked 10 hours once a quarter at the fence where the dose rate was highest, their direct radiation dose could be calculated as follows:

Dose (mrem) = 40 * [(41.3-15.4)+(65.9-15.4)+(56.9-15.4)+(45.3-15.4)] / 365 / 24 = 0.68

where

40 = 10 hours per quarter times four quarters
41.3 = average dose rate in first quarter, mrem/quarter
65.9 = average dose rate in second quarter, mrem/quarter
56.9 = average dose rate in third quarter, mrem/quarter
45.3= average dose rate in fourth quarter, mrem/quarter

15.4 = average pre-operation dose rate, mrem/quarter
365 = days in a year
24 = hours per day

Hence, in 2010 a hypothetical member of the public with the highest exposure to direct radiation received about 0.68 mrem from direct radiation.

Dose to Member of the Public from Direct Radiation and Radioactive Effluents Inside the Site Boundary

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 0.81 millirem, a small fraction of the 10 C.F.R. §20.1301 annual limit.

Dose to Member of the Public from Radioactive Effluents Outside the Site Boundary using ODCM Exposure Pathways

During 2010, the estimated total body dose to a hypothetical Member of the Public with the highest probability for exposure from radioactive effluents and direct radiation was 0.023 millirem. This total represents approximately 0.09% of the limits of 40 C.F.R. §190. Based on our 2010 Land Use Census, real individuals reside in the West by Southwest Sector, approximately 4,000 meters (2.5 miles) from the site. For dose calculation purposes, the residents at this location are characterized as the theoretically highest exposed individual with regard to food consumption, occupancy, and other uses of the areas in the plant vicinity. Our dose model assumes that this theoretically highest exposed individual may consume the maximum amount of food with all the food being grown or grazed at the residence. This individual receives shoreline exposure from Little Robbins Slough for 12 hours per year and consumes 21 kilograms (46 pounds) of fish taken from Little Robbins Slough. This individual receives a submersion dose from noble gases and dose from inhaled radioactive particulates, radioiodines, and tritium. This hypothetical adult is assumed to consume 64 kilograms (140 pounds) of vegetables grown at the residence and consumes 110 kilograms (240 pounds) of meat from livestock grazed at the residence. This estimated total body dose is calculated using models and exposure pathways described in our Offsite Dose Calculation Manual for a hypothetical individual offsite. Other dose estimates for Members of the Public onsite are listed in the report using exposure pathways not addressed by standard dose calculation methods.

Dose to Member of the Public from Radioactive Effluents Outside the Site Boundary using Liquid to Gaseous Receptor Exposure Pathways

Consistent with normal operation of the units, approximately twenty two hundred curies of tritium were released to the Main Cooling Reservoir during 2010. Since some portion of the tritium released in liquid effluents evaporates from the main cooling reservoir, this section is included to provide an estimate of offsite dose from that gaseous source per section 4.10 of the ODCM. Our main cooling reservoir, with a surface area of about 28,300,000 square meters (7000 acres), is an area source and contributes tritium to the atmosphere. The atmospheric dispersion factor for the WSW sector at 4000 meters was estimated to be 4.01E-

07 seconds per cubic meter using the EPA code Iclt3 and 2004 meteorological data. The product of X/Q, tritium released to the MCR, and the dose factor for a population age group (87.9, 91.7, 114.2 or 20.5 millirem-cubic meter per second-curie for age groups adult, teen, child and infant, respectively) generated an estimated whole body dose of 0.1 millirem for the highest exposed population group, a small fraction of the limits of 40 C.F.R. §190.

Dose to Member of the Public from Radioactive Effluents including Carbon-14

Carbon-14 has not been previously reported as a radioactive effluent. Carbon-14 is a naturally occurring isotope of carbon. Carbon-14 is formed naturally in the upper atmosphere and is also formed in an operating nuclear reactor, primarily through activation of oxygen molecules. The quantity of carbon-14 produced by operating nuclear reactors is significantly less than that produced naturally or from weapons testing.

The NRC published *Regulatory Guide 1.21 Revision 1, Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants* in 1974. This regulatory guidance recommends the content and format of this report. This report follows the recommendations of Regulatory Guide 1.21, Revision 1. In 2009 the NRC published revision 2 of Regulatory Guide 1.21 based on a risk-informed perspective for reporting principal radionuclides . This document recommended methods for estimating and reporting the quantity of carbon-14 released in gaseous effluents. The quantity of carbon-14 released from each unit was estimated using *NUREG-0017, Calculation of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Pressurized Water Reactors PWR-GALE Code,* April 1985. A value of 7.3 curies of carbon-14 was used for each unit. The Semiannual Summation of All Releases by Quarter for All Airborne Effluents found in section 4-2 of this report lists carbon-14 in a similar manner as tritium. In subsequent years, the amount of carbon-14 may be based on measurements in the actual effluents.

ODCM dose factors were used for estimating doses to members of the public and the doses due to carbon-14 are included in the Dose Accumulations, Section 7-1 of this report. *EPRI Report TR-105715, Characterization of Carbon-14 Generated by the Nuclear Power Industry*, November 1995 concluded that the molecular form of carbon-14 produced in gaseous effluent is 75 to 90 percent hydrocarbons (primarily methane) with the remainder in inorganic form (carbon dioxide or carbon monoxide in gas or carbonates in liquid). This report listed the measured molecular forms of carbon-14 in gaseous effluents from two U.S. and six German commercial pressurized water reactors. The average fraction of inorganic carbon-14 was determined to be 20 percent and the average organic fraction was determined to be 80 percent. The pathway doses were calculated using the average ratio of 1:5 for ingestion pathways, as carbon in the form of hydrocarbons is not absorbed by plants. The radiation doses from STPEGS to the public (including carbon-14) are much lower than regulatory limits and are a very small contributor to the total radiation dose the American public receives each year from natural and manmade sources.

Technical Specifications and Offsite Dose Calculation Manual Controls Reporting Requirements

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

The ODCM was not revised in 2010.

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

The Land Use Census identified several changes in the nearest residents within five miles. Distances to the nearest residents were changed in the N, NNW, and SSW sectors only. The Offsite Dose Calculation Manual was revised in 2011 with the distances to these dose pathway receptors being updated. These distances were used for determining the doses to the public.

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

A review of the work history for 2010 for the solid, liquid and gaseous waste processing systems revealed only three minor modifications, none of which affected effluent releases. DCP 05-5003-2 was implemented to finish abandoning in the Unit 1 Desuperheating Water Metering Pumps. DCP 05-2560-6 was implemented to add throttle valves to the seal water lines for waste liquid surge tank pumps 1B, 2A, and 2B. Additional modifications were completed to replace the high integrity container (HIC) fill heads in Unit 1 and Unit 2.

There were no major modifications installed on these systems in 2010.

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

For 2010, inoperable liquid effluent monitoring instruments were corrected within the time specified in Sections 3.3.3.10 of Offsite Dose Calculation Manual Controls.

For 2010, 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. Therefore the quantity of radioactive material in any unprotected outdoor tank did not exceed the limit set forth in Section 3.11.1.4 of Technical Specifications.

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.

2009 Radioactive Effluent Release Report Change

CR 11-6831 documents a typographical error found in the 2009 Radioactive Effluent Release Report. The curie value for *other waste (low level secondary resin, and sludge)* for table 1-1 on page 1-4 should be 5.3E-04 curies. In Table A. Solid Waste Shipped Offsite for Burial or Disposal (Not Irradiated Fuel) found on page 6-2 should list 5.3E-04 curies for both shipped and buried for *other waste (low level secondary resin, and sludge)*. On page 6-3, 3. Solid Waste Disposition should include thirteen additional shipments:

3. Solid Waste Disposition:

Number of Shipments	Mode of Transportation	Destination
3	Truck	Allied Waste Industries, Inc. * Gulf West Landfill 2601 South Jenkins Road Anahuac, TX 77514
10	Truck	Allied Waste Industries, Inc. * Blueridge Landfill 220 FM 521 Fresno, TX 77545

NOTE: * Shipped per Texas Commission on Environmental Quality exemption to industrial landfill.

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GASEOUS EFFLUENTS

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
Unit: 1
Starting : 1-Jan-2010 Ending : 30-Jun-2010

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.55E+00	3.76E-01	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.00E-01	4.78E-02	
3. PERCENT OF LIMIT (9.60E+04 uCi/sec)	%	2.08E-04	4.98E-05	
B. RADIOIODINES				
1. IODINE-131	CURIES	0.00E+00	3.45E-09	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	0.00E+00	4.39E-10	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	0.00E+00	1.10E-06	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	4.64E-05	3.96E-05	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	5.97E-06	5.04E-06	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	1.99E-03	1.68E-03	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	9.00E+00	1.00E+01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.16E+00	1.27E+00	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	6.43E-04	7.07E-04	
E. CARBON-14				
1. TOTAL RELEASE	CURIES	1.90E+00	1.84E+00	None
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.44E-01	2.34E-01	
3. PERCENT OF LIMIT (7.8E+03 uCi/sec)	%	3.13E-03	3.00E-03	

STP 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 2010

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	**UNITS**	**QUARTER 1**	**QUARTER 2**	**QUARTER 1**	**QUARTER 2**
FISSION GASES					
Argon-41	CURIES	2.82E-01	2.05E-01	0.00E+00	0.00E+00
Xenon-133	CURIES	1.27E+00	1.71E-01	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.55E+00	3.76E-01	0.00E+00	0.00E+00
IODINES					
Iodine-131	CURIES	0.00E+00	3.45E-09	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	0.00E+00	3.45E-09	0.00E+00	0.00E+00
PARTICULATES					
Beryllium-7	CURIES	4.49E-05	3.96E-05	0.00E+00	0.00E+00
Cobalt-58	CURIES	1.52E-06	0.00E+00	0.00E+00	0.00E+00
Cobalt-60	CURIES	4.32E-09	0.00E+00	0.00E+00	0.00E+00
Chromium-51	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mercury-203	CURIES	3.28E-09	2.44E-09	0.00E+00	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Niobium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium-75	CURIES	9.82E-10	1.22E-09	0.00E+00	0.00E+00
Zirconium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.64E-05	3.96E-05	0.00E+00	0.00E+00
OTHER					
Carbon-14	CURIES	1.90E+00	1.84E+00	0.00E+00	0.00E+00
Hydrogen-3 (Tritium)	CURIES	9.00E+00	1.00E+01	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.09E+01	1.18E+01	0.00E+00	0.00E+00

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
Unit: 1
Starting : 1-Jul-2010 Ending : 31-Dec-2010

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	3.59E-01	4.35E-01	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	4.52E-02	5.47E-02	
3. PERCENT OF LIMIT (9.60E+04 uCi/sec)	%	4.71E-05	5.70E-05	
B. RADIOIODINES				
1. IODINE-131	CURIES	4.58E-09	0.00E+00	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	5.76E-10	0.00E+00	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	1.44E-06	0.00E+00	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	2.30E-05	3.21E-05	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.89E-06	4.04E-06	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	9.65E-04	1.35E-03	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	7.69E+00	6.87E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	9.68E-01	8.64E-01	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	5.38E-04	4.80E-04	
E. CARBON-14				
1. TOTAL RELEASE	CURIES	1.77E+00	1.78E+00	None
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.23E-01	2.24E-01	
3. PERCENT OF LIMIT (7.8E+03 uCi/sec)	%	2.85E-03	2.87E-03	

STP 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 2010

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	**UNITS**	**QUARTER 3**	**QUARTER 4**	**QUARTER 3**	**QUARTER 4**
FISSION GASES					
Argon-41	CURIES	1.93E-01	2.63E-01	0.00E+00	0.00E+00
Xenon-133	CURIES	1.66E-01	1.72E-01	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.59E-01	4.35E-01	0.00E+00	0.00E+00
IODINES					
Iodine-131	CURIES	4.58E-09	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.58E-09	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
Beryllium-7	CURIES	2.30E-05	3.21E-05	0.00E+00	0.00E+00
Cobalt-58	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt-60	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium-51	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mercury-203	CURIES	1.12E-09	1.14E-09	0.00E+00	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Niobium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium-75	CURIES	1.20E-09	1.95E-09	0.00E+00	0.00E+00
Zirconium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	2.30E-05	3.21E-05	0.00E+00	0.00E+00
OTHER					
Carbon-14	CURIES	1.77E+00	1.78E+00	0.00E+00	0.00E+00
Hydrogen-3 (Tritium)	CURIES	7.69E+00	6.87E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	9.46E+00	8.66E+00	0.00E+00	0.00E+00

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
Unit: 2

Starting : 1-Jan-2010 Ending : 30-Jun-2010

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.02E+01	1.85E+01	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.31E+00	2.35E+00	
3. PERCENT OF LIMIT (9.60E+04 uCi/sec)	%	1.36E-03	2.45E-03	
B. RADIOIODINES				
1. IODINE-131	CURIES	4.68E-05	1.50E-04	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	6.02E-06	1.90E-05	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	1.50E-02	4.75E-02	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	3.76E-05	1.36E-03	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	4.84E-06	1.73E-04	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	1.61E-03	5.75E-02	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	1.48E+01	6.82E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.90E+00	8.67E-01	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	1.06E-03	4.82E-04	
E. CARBON-14				
1. TOTAL RELEASE	CURIES	1.78E+00	1.85E+00	None
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.29E-01	2.35E-01	
3. PERCENT OF LIMIT (7.8E+03 uCi/sec)	%	2.94E-03	3.01E-03	

STP 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 2010

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	**UNITS**	**QUARTER 1**	**QUARTER 2**	**QUARTER 1**	**QUARTER 2**
FISSION GASES					
Argon-41	CURIES	3.54E-01	5.58E-01	1.14E+00	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	0.00E+00	1.96E-03
Xenon-131M	CURIES	0.00E+00	3.31E-04	0.00E+00	2.97E-01
Xenon-133	CURIES	8.83E-01	2.89E-01	7.78E+00	1.73E+01
TOTAL FOR PERIOD	CURIES	1.24E+00	8.47E-01	8.92E+00	1.76E+01
IODINES					
Iodine-131	CURIES	9.36E-06	5.43E-06	3.74E-05	1.44E-04
Iodine-133	CURIES	1.17E-05	0.00E+00	1.76E-05	1.18E-06
TOTAL FOR PERIOD	CURIES	2.11E-05	5.43E-06	5.50E-05	1.45E-04
PARTICULATES					
Beryllium-7	CURIES	2.63E-05	2.12E-05	0.00E+00	1.26E-05
Cobalt-58	CURIES	0.00E+00	7.04E-06	3.08E-06	3.59E-04
Cobalt-60	CURIES	0.00E+00	3.28E-06	5.48E-07	6.48E-05
Chromium-51	CURIES	0.00E+00	5.54E-06	7.31E-06	8.42E-04
Mercury-203	CURIES	0.00E+00	3.10E-09	0.00E+00	3.00E-08
Manganese-54	CURIES	0.00E+00	0.00E+00	0.00E+00	1.04E-06
Niobium-95	CURIES	0.00E+00	0.00E+00	3.75E-07	4.19E-05
Selenium-75	CURIES	1.71E-09	2.98E-09	0.00E+00	3.19E-09
Zirconium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	1.24E-06
TOTAL FOR PERIOD	CURIES	2.63E-05	3.71E-05	1.13E-05	1.32E-03
OTHER					
Carbon-14	CURIES	1.69E+00	1.24E+00	9.20E-02	6.05E-01
Hydrogen-3 (Tritium)	CURIES	1.41E+01	3.37E+00	7.07E-01	3.45E+00
TOTAL FOR PERIOD	CURIES	1.58E+01	4.61E+00	7.99E-01	4.05E+00

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
Unit: 2
Starting : 1-Jul-2010 Ending : 31-Dec-2010

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	9.89E-01	8.02E-01	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.24E-01	1.01E-01	
3. PERCENT OF LIMIT (9.60E+04 uCi/sec)	%	1.30E-04	1.05E-04	
B. RADIOIODINES				
1. IODINE-131	CURIES	1.66E-08	1.13E-09	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.09E-09	1.43E-10	
3. PERCENT OF LIMIT (4.00E-02 uCi/sec)	%	5.23E-06	3.56E-07	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	3.07E-05	1.79E-05	25
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	3.86E-06	2.25E-06	
3. PERCENT OF LIMIT (3.00E-01 uCi/sec)	%	1.29E-03	7.51E-04	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	5.99E+00	1.22E+01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	7.53E-01	1.54E+00	
3. PERCENT OF LIMIT (1.80E+05 uCi/sec)	%	4.19E-04	8.56E-04	
E. CARBON-14				
1. TOTAL RELEASE	CURIES	1.81E+00	1.83E+00	None
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	2.28E-01	2.30E-01	
3. PERCENT OF LIMIT (7.8E+03 uCi/sec)	%	2.92E-03	2.95E-03	

STP 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 2010

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	**UNITS**	**QUARTER 3**	**QUARTER 4**	**QUARTER 3**	**QUARTER 4**
FISSION GASES					
Argon-41	CURIES	7.16E-01	3.02E-01	0.00E+00	0.00E+00
Xenon-133	CURIES	2.73E-01	4.99E-01	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	9.89E-01	8.01E-01	0.00E+00	0.00E+00
IODINES					
Iodine-131	CURIES	1.66E-08	1.13E-09	0.00E+00	0.00E+00
Iodine-133	CURIES	9.00E-08	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.07E-07	1.13E-09	0.00E+00	0.00E+00
PARTICULATES					
Beryllium-7	CURIES	2.66E-05	1.79E-05	0.00E+00	0.00E+00
Cobalt-58	CURIES	4.10E-06	0.00E+00	0.00E+00	0.00E+00
Cobalt-60	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium-51	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mercury-203	CURIES	5.43E-10	1.85E-09	0.00E+00	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Niobium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium-75	CURIES	3.49E-09	3.24E-09	0.00E+00	0.00E+00
Zirconium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.07E-05	1.79E-05	0.00E+00	0.00E+00
OTHER					
Carbon-14	CURIES	1.81E+00	1.83E+00	0.00E+00	0.00E+00
Hydrogen-3 (Tritium)	CURIES	5.99E+00	1.22E+01	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	7.80E+00	1.41E+01	0.00E+00	0.00E+00

STP NUCLEAR OPERATING COMPANY

Unit 1 plus 2 Total

REPORT CATEGORY: ANNUAL AIRBORNE GROUND LEVEL RELEASES. TOTALS FOR EACH NUCLIDE RELEASED. FOR ALL OF 2010

NUCLIDES RELEASED	UNITS	UNIT 1 2010	UNIT 2 2010	TOTAL 2010
FISSION GASES				
Argon-41	CURIES	9.43E-01	3.07E+00	4.01E+00
Krypton-85	CURIES	0.00E+00	1.96E-03	1.96E-03
Xenon-131M	CURIES	0.00E+00	2.98E-01	2.98E-01
Xenon-133	CURIES	1.78E+00	2.70E+01	2.88E+01
TOTAL FOR PERIOD	CURIES	2.72E+00	3.04E+01	3.31E+01
IODINES				
Iodine-131	CURIES	8.03E-09	1.96E-04	1.96E-04
Iodine-133	CURIES	0.00E+00	3.06E-05	3.06E-05
TOTAL FOR PERIOD	CURIES	8.03E-09	2.27E-04	2.27E-04
PARTICULATES				
Beryllium-7	CURIES	1.39E-04	1.04E-04	2.43E-04
Cobalt-58	CURIES	1.53E-06	3.73E-04	3.75E-04
Cobalt-60	CURIES	4.32E-09	6.86E-05	6.86E-05
Chromium-51	CURIES	0.00E+00	8.55E-04	8.55E-04
Mercury-203	CURIES	7.99E-09	3.55E-08	4.34E-08
Manganese-54	CURIES	0.00E+00	1.04E-06	1.04E-06
Niobium-95	CURIES	0.00E+00	4.23E-05	4.23E-05
Selenium-75	CURIES	5.35E-09	1.46E-08	1.99E-08
Zirconium-95	CURIES	0.00E+00	1.24E-06	1.24E-06
TOTAL FOR PERIOD	CURIES	1.40E-04	1.45E-03	1.59E-03
OTHER				
Carbon-14	CURIES	7.28E+00	7.25E+00	1.45E+01
Hydrogen-3 (Tritium)	CURIES	3.35E+01	3.98E+01	7.33E+01
TOTAL FOR PERIOD	CURIES	4.08E+01	4.71E+01	8.78E+01

LIQUID EFFLUENTS

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
Unit: 1

Starting : 1-Jan-2010 Ending : 30-Jun-2010

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	2.525E-03	2.933E-03	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	2.227E-09	3.084E-09	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	3.306E-03	3.252E-03	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.919E+02	3.206E+01	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.692E-04	3.371E-05	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	1.693E+00	3.371E-01	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	5.429E-04	2.170E-05	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	4.788E-10	2.282E-11	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	2.395E-04	1.141E-05	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.000E+00	0.000E+00	10
E. WASTE VOL RELEASED				
1. TOTAL PRE-DILUTION VOLUME	LITERS	2.972E+06	3.140E+06	1
2. BATCH PRE-DILUTION VOLUME	LITERS	7.903E+05	4.680E+05	1
F. VOLUME OF DILUTION WATER USED**	LITERS	1.131E+09	9.479E+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.

STP 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 2010

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDES RELEASED	**UNITS**	**QUARTER 1**	**QUARTER 2**	**QUARTER 1**	**QUARTER 2**
ALL NUCLIDES					
Beryllium-7	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt-57	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt-58	CURIES	0.00E+00	0.00E+00	1.77E-04	1.99E-04
Cobalt-60	CURIES	0.00E+00	0.00E+00	4.10E-04	6.57E-04
Chromium-51	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-134	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	CURIES	0.00E+00	0.00E+00	1.79E-04	4.72E-05
Iron-55	CURIES	0.00E+00	0.00E+00	7.48E-04	1.52E-03
Iron-59	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium	CURIES	3.33E-02	5.44E-02	1.92E+02	3.20E+01
Iodine-131	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodine-133	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Krypton-85M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	4.16E-04	3.07E-04
Sodium-24	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Niobium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	6.54E-06
Antimony-122	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony-124	CURIES	0.00E+00	0.00E+00	5.52E-05	1.11E-05
Antimony-125	CURIES	0.00E+00	0.00E+00	3.23E-04	1.81E-04
Antimony-126	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tin-113	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tin-117M	CURIES	0.00E+00	0.00E+00	2.21E-05	0.00E+00
Tellurium-125M	CURIES	0.00E+00	0.00E+00	1.96E-04	0.00E+00
Xenon-131M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xenon-133	CURIES	0.00E+00	0.00E+00	5.43E-04	2.17E-05
Xenon-133M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xenon-135	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zinc-65	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.33E-02	5.44E-02	1.92E+02	3.20E+01

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
Unit: 1
Starting : 1-Jul-2010 Ending : 31-Dec-2010

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	3.783E-03	2.676E-03	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.606E-09	1.670E-09	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	2.521E-03	3.261E-03	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	3.932E+02	2.090E+02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.669E-04	1.305E-04	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	1.669E+00	1.305E+00	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	2.217E-03	4.163E-04	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	9.409E-10	2.599E-10	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	4.704E-04	1.300E-04	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.000E+00	0.000E+00	10
E. WASTE VOL RELEASED				
1. TOTAL PRE-DILUTION VOLUME	LITERS	5.235E+06	4.942E+06	1
2. BATCH PRE-DILUTION VOLUME	LITERS	1.146E+06	8.362E+05	1
F. VOLUME OF DILUTION WATER USED**	LITERS	2.351E+09	1.597E+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.

STP 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 2010

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDES RELEASED	**UNITS**	**QUARTER 3**	**QUARTER 4**	**QUARTER 3**	**QUARTER 4**
ALL NUCLIDES					
Beryllium-7	CURIES	0.00E+00	0.00E+00	0.00E+00	1.54E-05
Cobalt-57	CURIES	0.00E+00	0.00E+00	0.00E+00	1.78E-06
Cobalt-58	CURIES	0.00E+00	0.00E+00	9.62E-05	1.82E-04
Cobalt-60	CURIES	0.00E+00	0.00E+00	1.21E-03	1.07E-03
Chromium-51	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-134	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	CURIES	0.00E+00	0.00E+00	4.36E-05	9.32E-05
Iron-55	CURIES	0.00E+00	0.00E+00	6.01E-04	4.96E-04
Iron-59	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium	CURIES	1.04E-01	5.32E-02	3.93E+02	2.09E+02
Iodine-131	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodine-133	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Krypton-85M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	1.57E-04	1.77E-04
Sodium-24	CURIES	0.00E+00	0.00E+00	0.00E+00	2.52E-07
Niobium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Antimony-122	CURIES	0.00E+00	0.00E+00	2.44E-05	0.00E+00
Antimony-124	CURIES	0.00E+00	0.00E+00	5.99E-04	2.87E-04
Antimony-125	CURIES	0.00E+00	0.00E+00	6.61E-04	3.54E-04
Antimony-126	CURIES	0.00E+00	0.00E+00	1.60E-05	0.00E+00
Tin-113	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tin-117M	CURIES	0.00E+00	0.00E+00	2.45E-06	0.00E+00
Tellurium-125M	CURIES	0.00E+00	0.00E+00	3.73E-04	0.00E+00
Xenon-131M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xenon-133	CURIES	0.00E+00	0.00E+00	2.22E-03	3.98E-04
Xenon-133M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xenon-135	CURIES	0.00E+00	0.00E+00	1.08E-06	1.85E-05
Zinc-65	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.04E-01	5.32E-02	3.93E+02	2.09E+02

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
Unit: 2
Starting : 1-Jan-2010 Ending : 30-Jun-2010

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	3.269E-03	4.369E-03	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.663E-09	2.376E-09	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	2.262E-03	2.971E-03	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	5.167E+02	8.133E+01	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	2.628E-04	4.422E-05	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	2.628E+00	4.422E-01	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	6.851E-01	7.497E-02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	3.485E-07	4.077E-08	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	1.743E-01	2.038E-02	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.000E+00	0.000E+00	10
E. WASTE VOL RELEASED				
1. TOTAL PRE-DILUTION VOLUME	LITERS	3.916E+06	3.009E+06	1
2. BATCH PRE-DILUTION VOLUME	LITERS	1.331E+06	1.012E+06	1
F. VOLUME OF DILUTION WATER USED**	LITERS	1.962E+09	1.836E+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.

STP 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 2010

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDES RELEASED	**UNITS**	**QUARTER 1**	**QUARTER 2**	**QUARTER 1**	**QUARTER 2**
ALL NUCLIDES					
Beryllium-7	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt-57	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt-58	CURIES	0.00E+00	0.00E+00	5.67E-05	1.42E-03
Cobalt-60	CURIES	0.00E+00	0.00E+00	1.02E-03	3.25E-04
Chromium-51	CURIES	0.00E+00	0.00E+00	0.00E+00	1.54E-04
Cesium-134	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cesium-137	CURIES	0.00E+00	0.00E+00	4.67E-06	1.61E-06
Iron-55	CURIES	0.00E+00	0.00E+00	1.39E-03	5.35E-04
Iron-59	CURIES	0.00E+00	0.00E+00	0.00E+00	2.51E-05
Tritium	CURIES	4.97E-02	2.31E-02	5.17E+02	8.13E+01
Iodine-131	CURIES	0.00E+00	0.00E+00	5.38E-05	2.63E-04
Iodine-133	CURIES	0.00E+00	0.00E+00	1.19E-05	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	0.00E+00	1.15E-02
Krypton-85M	CURIES	0.00E+00	0.00E+00	1.00E-05	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	4.71E-05	8.47E-05
Sodium-24	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Niobium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	7.51E-06
Antimony-122	CURIES	0.00E+00	0.00E+00	0.00E+00	6.01E-05
Antimony-124	CURIES	0.00E+00	0.00E+00	0.00E+00	3.17E-04
Antimony-125	CURIES	0.00E+00	0.00E+00	4.04E-04	1.17E-03
Antimony-126	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tin-113	CURIES	0.00E+00	0.00E+00	1.12E-06	0.00E+00
Tin-117M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tellurium-125M	CURIES	0.00E+00	0.00E+00	2.79E-04	0.00E+00
Xenon-131M	CURIES	0.00E+00	0.00E+00	4.50E-03	2.49E-03
Xenon-133	CURIES	0.00E+00	0.00E+00	6.68E-01	6.05E-02
Xenon-133M	CURIES	0.00E+00	0.00E+00	8.90E-03	4.92E-04
Xenon-135	CURIES	0.00E+00	0.00E+00	3.53E-03	1.04E-05
Zinc-65	CURIES	0.00E+00	0.00E+00	0.00E+00	3.07E-06
TOTAL FOR PERIOD	CURIES	4.97E-02	2.31E-02	5.17E+02	8.14E+01

STP NUCLEAR OPERATING COMPANY
SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
Unit: 2
Starting : 1-Jul-2010 Ending : 31-Dec-2010

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	9.521E-04	5.965E-03	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.037E-09	3.142E-09	
3. PERCENT OF EC* LIMIT (FRACTIONAL)	%	7.940E-04	2.763E-03	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	2.685E+01	7.260E+02	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	2.925E-05	3.824E-04	
3. % OF LIMIT (1.00E-02 uCi/mL)	%	2.925E-01	3.824E+00	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	1.041E-03	5.714E-03	10
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/mL	1.134E-09	3.010E-09	
3. PERCENT OF LIMIT (2.00E-04 uCi/mL)	%	5.669E-04	1.505E-03	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.000E+00	0.000E+00	10
E. WASTE VOL RELEASED				
1. TOTAL PRE-DILUTION VOLUME	LITERS	2.696E+06	3.614E+06	1
2. BATCH PRE-DILUTION VOLUME	LITERS	4.703E+05	1.351E+06	1
F. VOLUME OF DILUTION WATER USED**	LITERS	9.154E+08	1.895E+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.

STP 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 2010

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDES RELEASED	**UNITS**	**QUARTER 3**	**QUARTER 4**	**QUARTER 3**	**QUARTER 4**
ALL NUCLIDES					
Beryllium-7	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt-57	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt-58	CURIES	0.00E+00	0.00E+00	4.35E-05	9.50E-04
Cobalt-60	CURIES	0.00E+00	0.00E+00	1.04E-04	1.03E-03
Chromium-51	CURIES	0.00E+00	0.00E+00	0.00E+00	3.32E-04
Cesium-134	CURIES	0.00E+00	0.00E+00	7.30E-06	3.64E-06
Cesium-137	CURIES	0.00E+00	0.00E+00	8.51E-06	1.80E-05
Iron-55	CURIES	0.00E+00	0.00E+00	3.91E-04	1.70E-03
Iron-59	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium	CURIES	8.30E-02	6.16E-02	2.68E+01	7.26E+02
Iodine-131	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodine-133	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Krypton-85	CURIES	0.00E+00	0.00E+00	1.04E-03	0.00E+00
Krypton-85M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese-54	CURIES	0.00E+00	0.00E+00	2.83E-05	7.99E-05
Sodium-24	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Niobium-95	CURIES	0.00E+00	0.00E+00	0.00E+00	3.68E-05
Antimony-122	CURIES	0.00E+00	0.00E+00	0.00E+00	5.22E-06
Antimony-124	CURIES	0.00E+00	0.00E+00	1.95E-05	2.75E-04
Antimony-125	CURIES	0.00E+00	0.00E+00	3.50E-04	1.53E-03
Antimony-126	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tin-113	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tin-117M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tellurium-125M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xenon-131M	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xenon-133	CURIES	0.00E+00	0.00E+00	0.00E+00	5.40E-03
Xenon-133M	CURIES	0.00E+00	0.00E+00	0.00E+00	1.39E-04
Xenon-135	CURIES	0.00E+00	0.00E+00	0.00E+00	1.74E-04
Zinc-65	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	8.30E-02	6.16E-02	2.68E+01	7.26E+02

STP NUCLEAR OPERATING COMPANY

Unit 1 plus 2 Total

REPORT CATEGORY: ANNUAL LIQUID RELEASES. TOTALS FOR EACH NUCLIDE RELEASED. FOR ALL OF 2010

NUCLIDES RELEASED	UNITS	UNIT 1 2010	UNIT 2 2010	TOTAL 2010
ALL NUCLIDES				
Beryllium-7	CURIES	1.54E-05	0.00E+00	1.54E-05
Cobalt-57	CURIES	1.78E-06	0.00E+00	1.78E-06
Cobalt-58	CURIES	6.55E-04	2.47E-03	3.12E-03
Cobalt-60	CURIES	3.34E-03	2.47E-03	5.82E-03
Chromium-51	CURIES	0.00E+00	4.87E-04	4.87E-04
Cesium-134	CURIES	0.00E+00	1.09E-05	1.09E-05
Cesium-137	CURIES	3.63E-04	3.28E-05	3.96E-04
Iron-55	CURIES	3.37E-03	4.02E-03	7.39E-03
Iron-59	CURIES	0.00E+00	2.51E-05	2.51E-05
Tritium	CURIES	8.26E+02	1.35E+03	2.18E+03
Iodine-131	CURIES	0.00E+00	3.17E-04	3.17E-04
Iodine-133	CURIES	0.00E+00	1.19E-05	1.19E-05
Krypton-85	CURIES	0.00E+00	1.25E-02	1.25E-02
Krypton-85M	CURIES	0.00E+00	1.00E-05	1.00E-05
Manganese-54	CURIES	1.06E-03	2.40E-04	1.30E-03
Sodium-24	CURIES	2.52E-07	0.00E+00	2.52E-07
Niobium-95	CURIES	6.54E-06	4.43E-05	5.08E-05
Antimony-122	CURIES	2.44E-05	6.54E-05	8.97E-05
Antimony-124	CURIES	9.52E-04	6.12E-04	1.56E-03
Antimony-125	CURIES	1.52E-03	3.46E-03	4.98E-03
Antimony-126	CURIES	1.60E-05	0.00E+00	1.60E-05
Tin-113	CURIES	0.00E+00	1.12E-06	1.12E-06
Tin-117M	CURIES	2.45E-05	0.00E+00	2.45E-05
Tellurium-125M	CURIES	5.69E-04	2.79E-04	8.48E-04
Xenon-131M	CURIES	0.00E+00	6.99E-03	6.99E-03
Xenon-133	CURIES	3.18E-03	7.34E-01	7.37E-01
Xenon-133M	CURIES	0.00E+00	9.53E-03	9.53E-03
Xenon-135	CURIES	1.96E-05	3.71E-03	3.73E-03
Zinc-65	CURIES	0.00E+00	3.07E-06	3.07E-06
TOTAL FOR PERIOD	CURIES	8.26E+02	1.35E+03	2.18E+03
TOTAL Noble Gases	CURIES	3.22E-03	7.70E-01	7.73E-01
TOTAL Excluding Tritium & Noble Gases	CURIES	1.19E-02	1.45E-02	2.65E-02

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^3 Ci	None	None	N/A	N/A
b. Dry compressible waste, contaminated equip., etc.	m^3 Ci	5.17E+02 1.09E+00	9.38E+01 6.61E-01	-1.00E+00 -6.60E+01	1.00E+00 2.00E+02
c. Irradiated components, control rods, etc.	m^3 Ci	None	None	N/A	N/A
d. Other (low level secondary resin, sludge, oil and oily sludge).	m^3 Ci	6.93E+01 1.38E-04	6.48E+01 1.28E-04	-1.00E+00 -5.00E+01	1.00E+00 1.00E+02

2. Estimate of major nuclide composition (by type of waste)		
a. Spent resins, filter sludges, evaporator bottoms, etc.	None	N/A
b. Dry compressible waste, contaminated equip., etc.	Shipped Curie (Ci)	Percent (%)
Iron-55	0.57107	52.6%
Cobalt-60	0.19986	18.4%
Nickel-63	0.10923	10.1%
Chromium-51	0.08821	8.1%
Cobalt-58	0.07900	7.3%
Manganese-54	0.01543	1.4%
Niobium-95	0.00845	0.8%
Zirconium-95	0.00699	0.6%
Iron-59	0.00256	0.2%
Antimony-125	0.00192	0.2%
Cobalt-57	0.00060	0.1%
Cesium-137	0.00105	0.1%
c. Irradiated components, control rods, etc.	None	N/A
d. Other (low level secondary resin, sludge, oil and oily sludge).	Shipped Curie (Ci)	Percent (%)
H-3	0.00012906	93.85%
Iron-55	0.00000486	3.53%
Cobalt-60	0.00000207	1.50%
Nickel-63	0.00000074	0.54%
Beryllium-7	0.00000067	0.54%
Cesium-137	0.000000007	0.01%

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
11	Truck	Energy Solutions - Duratek Services 1560 Bear Creek Road Oak Ridge, TN 37830
3	Truck	Republic Services * Blueridge Landfill 220 FM 521 Fresno, Texas 77545
3	Truck	Republic Services * Gulf West Landfill 2601 South Jenkins Road Anahuac, Texas 77514

Note: *Shipped per Texas Commission on Environmental Quality exemption to industrial landfill.

4. Class of Solid Waste:
   A

5. Type of Containers Used for Shipment:
   IP-1, General Design

6. Solidifying Agent:
   N/A

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

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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-2010 Ending: 31-Dec-2010

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (m) (TOWARD)	% OF APPLICABLE LIMIT	LIMIT (mrad or mrem)
LIQUID	TOTAL BODY	4.75E-03	ADULT	RECEPTOR 3[5]	1.58E-01	3.0
LIQUID	GI-TRACT	4.79E-03	ADULT	RECEPTOR 3[5]	4.79E-02	10.0
NOBLE GAS	AIR DOSE (gamma-mrad)	4.43E-04		1850m WNW	4.43E-03	10.0
NOBLE GAS	AIR DOSE (beta-mrad)	2.02E-04		1850m WNW	1.01E-03	20.0
NOBLE GAS	TOTAL BODY	2.94E-04	ALL[1]	1850m WNW	5.87E-03	5.0
NOBLE GAS	TOTAL BODY	7.83E-05	ALL[2]	4000m WSW	1.57E-03	5.0
NOBLE GAS	SKIN	4.83E-04	ALL[1]	1850m WNW	3.22E-03	15.0
NOBLE GAS	SKIN	1.31E-04	ALL[2]	4000m WSW	8.74E-04	15.0
IODINE, PARTICULATES TRITIUM & C-14	BONE	2.62E-01	CHILD[1]	1720m NW	1.75E+00	15.0
IODINE, PARTICULATES TRITIUM & C-14	BONE	6.56E-02	CHILD[2]	4000m WSW	4.38E-01	15.0

SUMMARY OF POPULATION DOSES FOR 2010			
EFFLUENT	APPLICABLE ORGAN	ESTIMATED POPULATION DOSE (person-rem)	AVERAGE DOSE TO POPULATION (rem per person)
LIQUID	TOTAL BODY	3.65E-04	7.21E-08
GASEOUS	TOTAL BODY	4.70E-02	4.27E-09

NOTES:

[1]Doses were calculated for HYPOTHETICAL receptors at the site boundary.

[2]Highest dose for nearest individual or receptor. This individual is assumed to reside at this location.

[3] Calculation based on a population of 303,500 for shore line exposure and for salt water invertebrate ingestion and 3,800 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: 2
TOTAL ACCUMULATION FOR PERIODS:
for LIQUID, GASEOUS, AND AIR
Starting: 1-Jan-2010 Ending: 31-Dec-2010

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (m) (TOWARD)	% OF APPLICABLE LIMIT	LIMIT (mrad or mrem)
LIQUID	TOTAL BODY	7.75E-03	ADULT	RECEPTOR 3[5]	2.58E-01	3.0
LIQUID	GI-TRACT	7.78E-03	ADULT	RECEPTOR 3[5]	7.78E-02	10.0
NOBLE GAS	AIR DOSE (gamma-mrad)	1.62E-03		1720m NW	1.62E-02	10.0
NOBLE GAS	AIR DOSE (beta-mrad)	2.01E-03		1540m NNW	1.01E-02	20.0
NOBLE GAS	TOTAL BODY	1.04E-03	ALL[1]	1720m NW	2.07E-02	5.0
NOBLE GAS	TOTAL BODY	2.16E-04	ALL[2]	4000m WSW	4.32E-03	5.0
NOBLE GAS	SKIN	2.01E-03	ALL[1]	1720m NW	1.34E-02	15.0
NOBLE GAS	SKIN	3.55E-04	ALL[2]	4000m WSW	2.37E-03	15.0
IODINE, PARTICULATES TRITIUM & C-14	BONE	2.66E-01	CHILD[1]	1720m NW	1.77E+00	15.0
IODINE, PARTICULATES TRITIUM & C-14	BONE	6.56E-02	CHILD[2]	4000m WSW	4.38E-01	15.0

SUMMARY OF POPULATION DOSES FOR 2010			
EFFLUENT	APPLICABLE ORGAN	ESTIMATED POPULATION DOSE (person-rem)	AVERAGE DOSE TO POPULATION (rem per person)
LIQUID	TOTAL BODY	5.36E-04	1.17E-07
GASEOUS	TOTAL BODY	4.90E-02	4.64E-09

NOTES:

[1]Doses were calculated for HYPOTHETICAL receptors at the site boundary.

[2]Highest dose for nearest individual or receptor. This individual is assumed to reside at this location.

[3] Calculation based on a population of 303,500 for shore line exposure and for salt water invertebrate ingestion and 3,800 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-2010 Ending: 31-Dec-2010

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	4.75E-03	7.75E-03	1.25E-02	ADULT	RECEPTOR 3[5]
LIQUID	GI-TRACT	4.79E-03	7.78E-03	1.26E-02	ADULT	RECEPTOR 3[5]
NOBLE GAS	AIR DOSE (gamma-mrad)	3.33E-04	1.62E-03	1.95E-03		1720m NW
NOBLE GAS	AIR DOSE (beta-mrad)	1.14E-04	2.01E-03	2.13E-03		1540m NNW
NOBLE GAS	TOTAL BODY	2.20E-04	1.04E-03	1.26E-03	ALL[1]	1720m NW
NOBLE GAS	TOTAL BODY	7.83E-05	2.16E-04	2.94E-04	ALL[2]	4000m WSW
NOBLE GAS	SKIN	3.66E-04	2.01E-03	2.38E-03	ALL[1]	1720m NW
NOBLE GAS	SKIN	1.31E-04	3.55E-04	4.86E-04	ALL[2]	4000m WSW
IODINE, PARTICULATES TRITIUM & C-14	BONE	2.62E-01	2.66E-01	5.28E-01	CHILD[1]	1720m NW
IODINE, PARTICULATES TRITIUM & C-14	BONE	6.56E-02	6.56E-02	1.31E-01	CHILD[2]	4000m WSW
IODINE, PARTICULATES TRITIUM & C-14	TOTAL BODY	5.01E-03	5.32E-03	1.03E-02	ADULT[2]	4000m WSW

SUMMARY OF POPULATION DOSES FOR 2010			
EFFLUENT	APPLICABLE ORGAN	TOTAL 1+2 ESTIMATED POPULATION DOSE (person-rem)	TOTAL 1+2 AVERAGE DOSE TO POPULATION (rem per person)
LIQUID	TOTAL BODY	9.01E-04	1.89E-07
GASEOUS	TOTAL BODY	9.60E-02	7.43E-09

NOTES:

[1]Doses were calculated for HYPOTHETICAL receptors at the site boundary.

[2]Highest dose for nearest individual or receptor. This individual is assumed to reside at this location.

[3] Calculation based on a population of 303,500 for shore line exposure and for salt water invertebrate ingestion and 3,800 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.

RESULTS OF DIRECT RADIATION MEASUREMENTS PROGRAM

STP NUCLEAR OPERATING COMPANY

Onsite Direct Radiation Measurements

REPORT CATEGORY: THERMOLUMINESCENT DOSIMETER MONITORING STATIONS QUARTERLY RESULTS FOR 2010 TABLE 8-1

MONITORING STATION NUMBER (Noted on Figure 8-1)	**QUARTER 1**	**QUARTER 2**	**QUARTER 3**	**QUARTER 4**	**AVERAGE RATE**	**AVERAGE NET RATE**
UNITS	milliroentgen	milliroentgen	milliroentgen	milliroentgen	milliroentgen per quarter	milliroentgen per hour
PROTECTED AREA						
1	13.5	12.2	13.1	13.0	13.0	0.0000
2	13.0	11.7	12.1	13.1	12.5	0.0000
3	13.1	11.8	12.6	12.5	12.5	0.0000
4	14.1	13.6	13.7	13.5	13.7	0.0000
5	18.1	20.0	18.7	17.3	18.5	0.0014
6	33.9	47.9	42.3	37.2	40.3	0.0114
7	41.3	65.9	56.9	45.3	52.4	0.0169
8	21.8	26.5	25.3	22.0	23.9	0.0039
9	14.4	13.9	15.0	13.9	14.3	0.0000
10	13.2	12.0	12.4	12.6	12.6	0.0000
11	12.1	10.8	11.5	11.9	11.6	0.0000
12	12.6	11.2	12.5	12.6	12.2	0.0000
13	11.0	9.9	10.9	11.1	10.7	0.0000
14	12.2	10.6	11.9	12.0	11.7	0.0000
15	13.2	12.0	12.7	12.5	12.6	0.0000
16	12.5	11.2	12.1	12.3	12.0	0.0000
ONSITE STAGING FACILITY (OUTSIDE STORAGE)						
17	13.9	11.2	11.8	13.7	12.7	0.0000
18	12.3	10.7	11.3	12.1	11.6	0.0000
19	12.2	10.6	11.3	12.5	11.6	0.0000
20	15.3	13.5	13.7	14.7	14.3	0.0000
ONSITE STAGING FACILITY (WAREHOUSE D)						
21	17.5	16.1	14.2	15.6	15.9	0.0002
22	47.5	82.2	18.3	25.9	43.5	0.0129
23	20.0	14.7	14.1	17.6	16.6	0.0005
24	50.8	24.0	22.8	73.2	42.7	0.0125
OLD STEAM GENERATOR STORAGE FACILITY						
25	13.4	11.6	12.8	12.7	12.6	0.0000
26	16.3	14.4	15.3	15.6	15.4	0.0000
27	14.6	13.3	13.3	14.5	13.9	0.0000
28	17.0	15.6	13.4	14.7	15.2	0.0000

Notes for Onsite Direct Radiation Measurements

Measurement Results

Individual values normalized to a 91 day quarter.

Only the calcium sulfate elements were used in these averages.

Average Net Rate:

Difference between the 2010 exposure rate and the 1986 measured rate due to natural background

(average rate – 15.4 mR background) / 91 days / 24 hours per day

The pre-operational background rate of 15.4 mR at the site boundary in 1986 has been used to reflect the background baseline exposure rate for STP. Historically the exposure rates measured near the protected area fence have been lower than the historical background at the site boundary. However, dosimeter stations 6 and 7 have at times exceeded this background rate due to radioactive waste processing activities on the south side of Units 1 and 2. Temporary staging of the Units 1 and 2 old reactor vessel heads in the Unit 2 radioactive waste processing yard in 2010 elevated stations 5, 6, 7, and 8. Measurements around Warehouse D were elevated due to temporary storage of radioactive material awaiting shipment.

Zero:

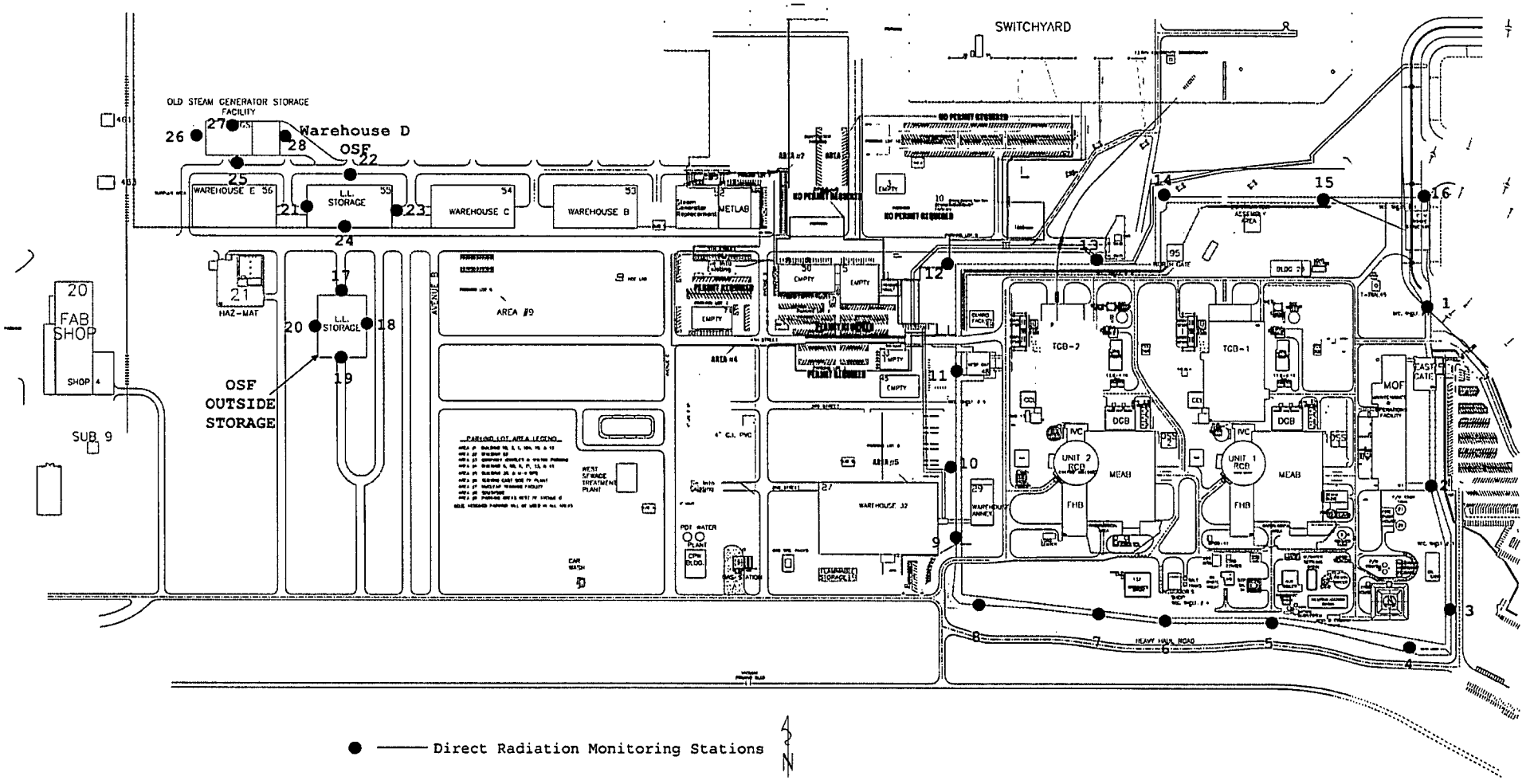
Zero (0 or 0.00) indicate background levels

Milliroentgen:

Miliroentgen or mR is a unit of exposure for X-rays and gamma rays.

A.R.E - Site Map

FIGURE 8-1



JOINT FREQUENCY TABLES

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS A

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	1	0	0	0	0	0	0	1	11.1%	2.6
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	1	0	0	0	0	1	11.1%	9.7
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	1	0	0	0	0	1	11.1%	8.8
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	1	1	1	0	0	3	33.3%	14.0
NW	0	2	1	0	0	0	0	0	3	33.3%	3.7
NNW	0	0	0	0	0	0	0	0	0	0.0%	0.0
Total	0	3	1	3	1	1	0	0	9		
% Of Total	0.0%	33.3%	11.1%	33.3%	11.1%	11.1%	0.0%	0.0%			

Average speed for this table (MPH):	8.2
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	0
Total number of Valid hours :	2160
Total number of hours for period :	2160

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS B

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	1	0	0	1	6.7%	19.9
SSE	0	0	0	0	2	0	0	0	2	13.3%	13.7
S	0	0	0	3	0	0	0	0	3	20.0%	10.3
SSW	0	0	0	2	0	0	0	0	2	13.3%	9.4
SW	0	0	1	0	0	0	0	0	1	6.7%	4.6
WSW	0	0	0	0	0	0	0	0	0	0.0%	0.0
W	0	0	0	1	0	0	0	0	1	6.7%	11.4
WNW	0	0	2	0	3	0	0	0	5	33.3%	10.9
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	3	6	5	1	0	0	15		
% Of Total	0.0%	0.0%	20.0%	40.0%	33.3%	6.7%	0.0%	0.0%			

Average speed for this table (MPH):	11.2
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	0
Total number of Valid hours :	2160
Total number of hours for period :	2160

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS C

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	1	0	0	0	0	0	0	1	1.9%	1.8
NNE	0	1	0	0	0	0	0	0	1	1.9%	3.5
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	6	0	0	0	6	11.1%	16.9
SE	0	0	1	1	1	2	0	0	5	9.3%	13.8
SSE	0	0	0	1	3	0	0	0	4	7.4%	13.0
S	0	0	0	8	0	0	0	0	8	14.8%	10.2
SSW	0	0	3	3	0	0	0	0	6	11.1%	7.5
SW	0	0	1	4	0	0	0	0	5	9.3%	8.5
WSW	0	1	0	0	0	0	0	0	1	1.9%	2.7
W	0	0	0	1	0	0	0	0	1	1.9%	10.9
WNW	0	1	2	0	1	2	0	0	6	11.1%	11.6
NW	0	0	0	1	6	3	0	0	10	18.5%	16.2
NNW	0	0	0	0	0	0	0	0	0	0.0%	0.0
Total	0	4	7	19	17	7	0	0	54		
% Of Total	0.0%	7.4%	13.0%	35.2%	31.5%	13.0%	0.0%	0.0%			

Average speed for this table (MPH): 11.9
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 0
Total number of Valid hours : 2160
Total number of hours for period : 2160

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS D

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	2	14	24	41	10	0	0	91	8.9%	12.7
NNE	0	1	19	30	6	0	0	0	56	5.4%	8.9
NE	0	2	29	40	9	0	0	0	80	7.8%	8.6
ENE	0	0	15	32	7	1	0	0	55	5.4%	9.6
E	0	2	2	35	22	2	0	0	63	6.1%	11.8
ESE	0	0	6	41	42	5	0	0	94	9.1%	12.6
SE	0	3	6	43	30	5	1	0	88	8.6%	12.5
SSE	0	1	7	31	33	1	0	0	73	7.1%	11.7
S	0	1	14	21	0	0	0	0	36	3.5%	8.0
SSW	0	1	14	0	0	0	0	0	15	1.5%	6.3
SW	0	0	6	7	0	0	0	0	13	1.3%	7.6
WSW	0	0	10	2	0	0	0	0	12	1.2%	6.4
W	0	2	5	2	0	0	0	0	9	0.9%	5.5
WNW	0	2	11	1	3	0	0	0	17	1.7%	7.1
NW	0	1	11	30	44	13	0	0	99	9.6%	13.5
NNW	0	2	29	61	110	24	1	0	227	22.1%	13.1
Total	0	20	198	400	347	61	2	0	1028		
% Of Total	0.0%	1.9%	19.3%	38.9%	33.8%	5.9%	0.2%	0.0%			

Average speed for this table (MPH): 11.5
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 0
Total number of Valid hours : 2160
Total number of hours for period : 2160

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS E

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	6	18	11	2	1	0	0	38	6.2%	7.2
NNE	0	4	15	7	1	0	0	0	27	4.4%	6.0
NE	0	2	21	13	2	0	0	0	38	6.2%	7.4
ENE	0	1	16	29	11	1	0	0	58	9.5%	9.6
E	1	1	34	11	6	3	2	0	58	9.5%	9.3
ESE	0	9	28	35	12	0	0	0	84	13.7%	8.3
SE	0	3	19	39	2	0	0	0	63	10.3%	8.2
SSE	0	2	16	36	3	0	0	0	57	9.3%	8.5
S	0	6	25	6	0	0	0	0	37	6.0%	5.9
SSW	0	4	18	0	0	0	0	0	22	3.6%	4.5
SW	0	3	7	2	0	0	0	0	12	2.0%	5.3
WSW	0	1	2	3	0	0	0	0	6	1.0%	6.4
W	0	1	4	1	0	0	0	0	6	1.0%	5.4
WNW	0	8	5	0	0	0	0	0	13	2.1%	3.3
NW	0	3	14	12	5	0	0	0	34	5.5%	8.4
NNW	0	7	34	17	2	0	0	0	60	9.8%	6.9
Total	1	61	276	222	46	5	2	0	613		
% Of Total	0.2%	10.0%	45.0%	36.2%	7.5%	0.8%	0.3%	0.0%			

Average speed for this table (MPH): 7.7
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 0
Total number of Valid hours : 2160
Total number of hours for period : 2160

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS F

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	6	12	0	0	0	0	0	18	9.7%	4.5
NNE	0	5	6	0	0	0	0	0	11	5.9%	3.7
NE	1	4	11	1	0	0	0	0	17	9.1%	4.5
ENE	0	3	6	2	0	0	0	0	11	5.9%	5.3
E	0	9	15	2	0	0	0	0	26	14.0%	4.5
ESE	0	6	10	0	0	0	0	0	16	8.6%	3.9
SE	0	5	4	0	0	0	0	0	9	4.8%	4.3
SSE	0	3	6	0	0	0	0	0	9	4.8%	4.3
S	0	10	2	0	0	0	0	0	12	6.5%	3.1
SSW	0	3	1	0	0	0	0	0	4	2.2%	2.9
SW	0	0	1	0	0	0	0	0	1	0.5%	6.4
WSW	0	2	1	0	0	0	0	0	3	1.6%	2.9
W	0	4	1	0	0	0	0	0	5	2.7%	2.9
WNW	0	3	1	0	0	0	0	0	4	2.2%	2.6
NW	0	9	9	3	0	0	0	0	21	11.3%	4.6
NNW	0	6	13	0	0	0	0	0	19	10.2%	3.9
Total	1	78	99	8	0	0	0	0	186		
% Of Total	0.5%	41.9%	53.2%	4.3%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH):	4.1
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	0
Total number of Valid hours :	2160
Total number of hours for period :	2160

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS G

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	5	1	0	0	0	0	0	6	2.4%	2.4
NNE	0	14	11	0	0	0	0	0	25	9.8%	3.3
NE	1	21	13	0	0	0	0	0	35	13.7%	3.3
ENE	0	15	6	0	0	0	0	0	21	8.2%	2.9
E	2	10	10	0	0	0	0	0	22	8.6%	3.4
ESE	0	12	7	0	0	0	0	0	19	7.5%	3.2
SE	1	10	7	0	0	0	0	0	18	7.1%	3.0
SSE	0	6	3	0	0	0	0	0	9	3.5%	2.8
S	0	2	0	0	0	0	0	0	2	0.8%	1.9
SSW	0	1	1	0	0	0	0	0	2	0.8%	3.2
SW	0	1	0	0	0	0	0	0	1	0.4%	1.8
WSW	0	0	1	0	0	0	0	0	1	0.4%	5.2
W	0	6	10	0	0	0	0	0	16	6.3%	3.8
WNW	0	27	8	0	0	0	0	0	35	13.7%	2.7
NW	0	17	13	1	0	0	0	0	31	12.2%	3.7
NNW	1	8	3	0	0	0	0	0	12	4.7%	3.0
Total	5	155	94	1	0	0	0	0	255		
% Of Total	2.0%	60.8%	36.9%	0.4%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 3.2
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 0
Total number of Valid hours : 2160
Total number of hours for period : 2160

Joint Frequency Table

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

ALL STABILITY CLASSES COMBINED

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	21	45	35	43	11	0	0	155	7.2%	9.9
NNE	0	25	51	37	7	0	0	0	120	5.6%	6.5
NE	2	29	74	54	11	0	0	0	170	7.9%	6.8
ENE	0	19	43	63	18	2	0	0	145	6.7%	8.3
E	3	22	61	48	28	5	2	0	169	7.8%	8.7
ESE	0	27	51	76	60	5	0	0	219	10.1%	9.6
SE	1	21	37	84	33	8	1	0	185	8.6%	9.8
SSE	0	12	32	68	41	1	0	0	154	7.1%	9.7
S	0	19	41	38	0	0	0	0	98	4.5%	6.8
SSW	0	9	37	6	0	0	0	0	52	2.4%	5.4
SW	0	4	16	13	0	0	0	0	33	1.5%	6.6
WSW	0	4	14	5	0	0	0	0	23	1.1%	5.7
W	0	13	20	5	0	0	0	0	38	1.8%	4.7
WNW	0	41	29	2	8	3	0	0	83	3.8%	5.3
NW	0	32	48	47	55	16	0	0	198	9.2%	10.2
NNW	1	23	79	78	112	24	1	0	318	14.7%	11.0
Total	7	321	678	659	416	75	4	0	2160		
% Of Total	0.3%	14.9%	31.4%	30.5%	19.3%	3.5%	0.2%	0.0%			

Average speed for this table (MPH):	8.8
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	0
Total number of Valid hours :	2160
Total number of hours for period :	2160

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS A

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	0	1	0	0	0	0	1	2.0%	8.7
NNE	0	0	1	0	0	0	0	0	1	2.0%	4.9
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	2	0	0	0	0	0	2	4.0%	5.6
SE	0	0	0	3	0	0	0	0	3	6.0%	9.4
SSE	0	0	3	11	8	7	0	0	29	58.0%	14.1
S	0	0	2	5	0	0	0	0	7	14.0%	9.4
SSW	0	0	0	1	0	0	0	0	1	2.0%	8.7
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	1	0	0	0	0	1	2.0%	8.1
WNW	0	0	0	3	0	0	0	0	3	6.0%	9.9
NW	0	0	0	2	0	0	0	0	2	4.0%	10.0
NNW	0	0	0	0	0	0	0	0	0	0.0%	0.0
Total	0	0	8	27	8	7	0	0	50		
% Of Total	0.0%	0.0%	16.0%	54.0%	16.0%	14.0%	0.0%	0.0%			

Average speed for this table (MPH): 11.9
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 2
Total number of Valid hours : 2182
Total number of hours for period : 2184

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS B

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	0	0	0	0	0	0	0	0.0%	0.0
NNE	0	0	1	0	0	0	0	0	1	1.9%	6.8
NE	0	0	1	0	0	0	0	0	1	1.9%	5.6
ENE	0	0	1	0	0	0	0	0	1	1.9%	5.3
E	0	0	0	0	0	0	0	0	0	0.0%	0.0
ESE	0	0	1	0	3	5	0	0	9	16.7%	18.2
SE	0	0	3	5	7	2	0	0	17	31.5%	12.4
SSE	0	0	0	4	7	0	0	0	11	20.4%	14.2
S	0	0	1	6	0	0	0	0	7	13.0%	9.8
SSW	0	0	0	1	0	0	0	0	1	1.9%	7.6
SW	0	0	0	0	0	0	0	0	0	0.0%	0.0
WSW	0	0	0	1	0	0	0	0	1	1.9%	8.2
W	0	0	1	1	0	0	0	0	2	3.7%	8.2
WNW	0	0	0	1	0	0	0	0	1	1.9%	8.6
NW	0	0	0	0	0	0	0	0	0	0.0%	0.0
NNW	0	0	1	0	1	0	0	0	2	3.7%	10.2
Total	0	0	10	19	18	7	0	0	54		
% Of Total	0.0%	0.0%	18.5%	35.2%	33.3%	13.0%	0.0%	0.0%			

Average speed for this table (MPH): 12.5
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 2
Total number of Valid hours : 2182
Total number of hours for period : 2184

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS C

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	0	0	1	0	0	0	1	0.8%	13.9
NNE	0	0	0	0	0	0	0	0	0	0.0%	0.0
NE	0	0	0	1	2	0	0	0	3	2.4%	13.9
ENE	0	1	0	1	0	0	0	0	2	1.6%	8.0
E	0	0	1	0	1	0	0	0	2	1.6%	9.7
ESE	0	0	1	0	6	6	0	0	13	10.3%	18.1
SE	0	1	2	11	14	2	0	0	30	23.8%	12.8
SSE	0	0	2	22	10	0	0	0	34	27.0%	11.5
S	0	0	1	28	4	0	0	0	33	26.2%	10.3
SSW	0	0	0	1	0	0	0	0	1	0.8%	9.9
SW	0	0	0	0	0	0	0	0	0	0.0%	0.0
WSW	0	0	0	1	0	0	0	0	1	0.8%	10.5
W	0	0	1	0	0	0	0	0	1	0.8%	7.5
WNW	0	0	0	1	0	0	0	0	1	0.8%	12.4
NW	0	0	0	0	1	0	0	0	1	0.8%	13.9
NNW	0	0	1	1	1	0	0	0	3	2.4%	11.1
Total	0	2	9	67	40	8	0	0	126		
% Of Total	0.0%	1.6%	7.1%	53.2%	31.7%	6.3%	0.0%	0.0%			

Average speed for this table (MPH):	12.1
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	2
Total number of Valid hours :	2182
Total number of hours for period :	2184

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS D

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	2	7	5	3	1	0	0	18	1.6%	8.9
NNE	0	2	7	10	0	0	0	0	19	1.7%	7.2
NE	0	2	4	12	5	0	0	0	23	2.1%	9.5
ENE	0	4	4	5	3	0	0	0	16	1.5%	8.0
E	0	4	5	26	33	1	0	0	69	6.3%	11.7
ESE	0	2	13	57	60	4	0	0	136	12.3%	12.2
SE	0	4	21	115	172	8	0	0	320	29.0%	12.7
SSE	0	1	29	161	81	0	0	0	272	24.7%	11.0
S	0	1	33	78	8	0	0	0	120	10.9%	9.0
SSW	0	3	18	2	0	0	0	0	23	2.1%	5.8
SW	0	1	5	3	0	0	0	0	9	0.8%	5.7
WSW	0	0	2	1	0	0	0	0	3	0.3%	6.6
W	0	2	2	5	1	0	0	0	10	0.9%	8.0
WNW	0	2	10	4	0	0	0	0	16	1.5%	5.8
NW	0	0	8	5	5	1	0	0	19	1.7%	10.0
NNW	0	1	7	14	7	0	0	0	29	2.6%	9.3
Total	0	31	175	503	378	15	0	0	1102		
% Of Total	0.0%	2.8%	15.9%	45.6%	34.3%	1.4%	0.0%	0.0%			

Average speed for this table (MPH):	11.0
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	2
Total number of Valid hours :	2182
Total number of hours for period :	2184

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS E

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	2	11	9	3	0	0	0	25	4.4%	7.4
NNE	0	2	7	4	1	0	0	0	14	2.5%	5.7
NE	0	6	7	11	6	0	0	0	30	5.3%	8.7
ENE	0	6	14	5	1	0	0	0	26	4.6%	6.6
E	0	8	19	3	0	0	0	0	30	5.3%	5.0
ESE	0	5	27	8	2	0	0	0	42	7.4%	6.0
SE	0	8	86	22	0	0	0	0	116	20.5%	6.2
SSE	0	4	61	45	1	0	0	0	111	19.6%	6.9
S	0	0	45	6	0	0	0	0	51	9.0%	6.0
SSW	0	7	24	0	0	0	0	0	31	5.5%	4.5
SW	0	1	5	4	0	0	0	0	10	1.8%	6.7
WSW	0	5	3	0	0	0	0	0	8	1.4%	3.6
W	0	4	3	0	0	0	0	0	7	1.2%	3.4
WNW	0	9	6	1	0	0	0	0	16	2.8%	4.1
NW	0	3	17	4	0	0	0	0	24	4.2%	5.9
NNW	0	2	8	13	2	0	0	0	25	4.4%	7.8
Total	0	72	343	135	16	0	0	0	566		
% Of Total	0.0%	12.7%	60.6%	23.9%	2.8%	0.0%	0.0%	0.0%			

Average speed for this table (MPH):	6.3
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	2
Total number of Valid hours :	2182
Total number of hours for period :	2184

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS F

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	3	3	0	0	0	0	0	6	3.2%	3.1
NNE	0	8	4	0	0	0	0	0	12	6.5%	3.1
NE	0	10	3	0	0	0	0	0	13	7.0%	3.3
ENE	0	9	2	0	0	0	0	0	11	5.9%	2.6
E	0	13	2	0	0	0	0	0	15	8.1%	2.4
ESE	0	24	4	1	0	0	0	0	29	15.7%	2.8
SE	0	28	17	0	0	0	0	0	45	24.3%	3.4
SSE	0	5	20	0	0	0	0	0	25	13.5%	4.4
S	0	1	0	0	0	0	0	0	1	0.5%	1.7
SSW	0	1	0	0	0	0	0	0	1	0.5%	3.3
SW	0	0	2	0	0	0	0	0	2	1.1%	5.9
WSW	0	2	1	0	0	0	0	0	3	1.6%	3.3
W	0	2	1	0	0	0	0	0	3	1.6%	4.0
WNW	0	7	2	0	0	0	0	0	9	4.9%	3.0
NW	1	4	1	0	0	0	0	0	6	3.2%	3.2
NNW	0	3	1	0	0	0	0	0	4	2.2%	2.3
Total	1	120	63	1	0	0	0	0	185		
% Of Total	0.5%	64.9%	34.1%	0.5%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 3.2
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 2
Total number of Valid hours : 2182
Total number of hours for period : 2184

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS G

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	1	7	1	0	0	0	0	0	9	9.1%	1.8
NNE	0	8	0	0	0	0	0	0	8	8.1%	2.5
NE	0	7	0	0	0	0	0	0	7	7.1%	1.9
ENE	0	8	0	0	0	0	0	0	8	8.1%	1.6
E	2	13	0	0	0	0	0	0	15	15.2%	2.3
ESE	0	10	2	0	0	0	0	0	12	12.1%	2.6
SE	0	4	1	0	0	0	0	0	5	5.1%	3.1
SSE	0	2	0	0	0	0	0	0	2	2.0%	2.4
S	0	0	0	0	0	0	0	0	0	0.0%	0.0
SSW	0	1	0	0	0	0	0	0	1	1.0%	1.2
SW	0	1	0	0	0	0	0	0	1	1.0%	1.0
WSW	0	3	3	0	0	0	0	0	6	6.1%	3.8
W	0	2	2	0	0	0	0	0	4	4.0%	3.2
WNW	0	9	0	0	0	0	0	0	9	9.1%	1.9
NW	0	4	0	0	0	0	0	0	4	4.0%	2.3
NNW	3	3	2	0	0	0	0	0	8	8.1%	2.0
Total	6	82	11	0	0	0	0	0	99		
% Of Total	6.1%	82.8%	11.1%	0.0%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH):	2.3
Hours in above table with variable direction :	0
Total number of CALMs :	7
Total number of Invalid hours :	2
Total number of Valid hours :	2182
Total number of hours for period :	2184

Joint Frequency Table

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

ALL STABILITY CLASSES COMBINED

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	1	14	22	15	7	1	0	0	60	2.7%	6.7
NNE	0	20	20	14	1	0	0	0	55	2.5%	5.2
NE	0	25	15	24	13	0	0	0	77	3.5%	7.5
ENE	0	28	21	11	4	0	0	0	64	2.9%	5.6
E	2	38	27	29	34	1	0	0	131	6.0%	8.0
ESE	0	41	50	66	71	15	0	0	243	11.1%	10.0
SE	0	45	130	156	193	12	0	0	536	24.6%	10.4
SSE	0	12	115	243	107	7	0	0	484	22.2%	10.0
S	0	2	82	123	12	0	0	0	219	10.0%	8.5
SSW	0	12	42	5	0	0	0	0	59	2.7%	5.1
SW	0	3	12	7	0	0	0	0	22	1.0%	6.0
WSW	0	10	9	3	0	0	0	0	22	1.0%	4.5
W	0	10	10	7	1	0	0	0	28	1.3%	5.7
WNW	0	27	18	10	0	0	0	0	55	2.5%	4.6
NW	1	11	26	11	6	1	0	0	56	2.6%	7.0
NNW	3	9	20	28	11	0	0	0	71	3.3%	7.7
Total	7	307	619	752	460	37	0	0	2182		
% Of Total	0.3%	14.1%	28.4%	34.5%	21.1%	1.7%	0.0%	0.0%			

Average speed for this table (MPH): 8.9
Hours in above table with variable direction : 0
Total number of CALMs : 7
Total number of Invalid hours : 2
Total number of Valid hours : 2182
Total number of hours for period : 2184

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS A

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	1	0	0	0	0	0	0	1	33.3%	1.6
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	1	0	0	0	0	0	1	33.3%	3.7
W	0	0	0	0	0	0	0	0	0	0.0%	0.0
WNW	0	1	0	0	0	0	0	0	1	33.3%	2.9
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	2	1	0	0	0	0	0	3		
% Of Total	0.0%	66.7%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 2.7
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 1
Total number of Valid hours : 2207
Total number of hours for period : 2208

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS B

Wind Speed (MPH) -> Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	1	0	0	0	0	1	33.3%	9.3
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	1	1	0	0	0	2	66.7%	12.5
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	2	1	0	0	0	3		
% Of Total	0.0%	0.0%	0.0%	66.7%	33.3%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 11.4
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 1
Total number of Valid hours : 2207
Total number of hours for period : 2208

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS C

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	2	0	0	0	0	2	14.3%	11.4
SSE	0	0	0	0	0	0	0	0	0	0.0%	0.0
S	0	0	1	6	1	0	0	0	8	57.1%	10.5
SSW	0	0	1	2	0	0	0	0	3	21.4%	8.2
SW	0	0	0	1	0	0	0	0	1	7.1%	7.8
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	11	1	0	0	0	14		
% Of Total	0.0%	0.0%	14.3%	78.6%	7.1%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 9.9
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 1
Total number of Valid hours : 2207
Total number of hours for period : 2208

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS D

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	12	17	0	0	0	0	29	4.2%	8.2
NNE	0	1	19	23	0	0	0	0	43	6.2%	7.5
NE	0	3	20	10	0	0	0	0	33	4.8%	6.6
ENE	0	1	8	3	0	0	0	0	12	1.7%	6.2
E	0	1	15	14	5	0	0	0	35	5.0%	8.5
ESE	0	2	14	32	5	0	0	0	53	7.6%	8.8
SE	0	2	22	79	27	0	0	0	130	18.7%	10.1
SSE	0	3	16	32	14	0	0	0	65	9.4%	9.6
S	0	0	93	85	0	0	0	0	178	25.6%	7.6
SSW	0	4	37	9	0	0	0	0	50	7.2%	6.0
SW	0	0	15	1	0	0	0	0	16	2.3%	5.9
WSW	0	2	7	1	0	0	0	0	10	1.4%	4.9
W	0	0	9	0	0	0	0	0	9	1.3%	5.2
WNW	0	1	8	0	0	0	0	0	9	1.3%	4.1
NW	0	2	6	0	0	0	0	0	8	1.2%	4.4
NNW	0	0	10	4	0	0	0	0	14	2.0%	6.5
Total	0	22	311	310	51	0	0	0	694		
% Of Total	0.0%	3.2%	44.8%	44.7%	7.3%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 8.0
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 1
Total number of Valid hours : 2207
Total number of hours for period : 2208

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS E

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	13	9	3	0	0	0	0	25	2.8%	4.4
NNE	0	15	34	4	1	0	0	0	54	6.1%	5.0
NE	0	23	27	14	0	0	0	0	64	7.2%	5.1
ENE	0	8	30	15	1	0	0	0	54	6.1%	6.2
E	0	11	25	14	0	0	0	0	50	5.6%	5.9
ESE	0	8	40	16	9	0	0	0	73	8.2%	7.3
SE	0	5	74	51	5	0	0	0	135	15.2%	7.3
SSE	0	7	76	21	7	0	0	0	111	12.5%	6.9
S	0	9	100	31	0	0	0	0	140	15.7%	5.9
SSW	0	6	73	2	0	0	0	0	81	9.1%	5.1
SW	0	6	25	6	0	0	0	0	37	4.2%	5.5
WSW	0	2	5	0	0	0	0	0	7	0.8%	4.2
W	0	10	3	0	0	0	0	0	13	1.5%	3.0
WNW	0	6	2	0	0	0	0	0	8	0.9%	2.9
NW	0	13	2	1	0	0	0	0	16	1.8%	2.9
NNW	0	9	7	5	0	0	0	0	21	2.4%	5.0
Total	0	151	532	183	23	0	0	0	889		
% Of Total	0.0%	17.0%	59.8%	20.6%	2.6%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 6.0
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 1
Total number of Valid hours : 2207
Total number of hours for period : 2208

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS F

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	13	3	0	0	0	0	0	16	3.8%	2.7
NNE	0	30	16	1	0	0	0	0	47	11.1%	3.3
NE	2	33	13	0	0	0	0	0	48	11.3%	3.0
ENE	0	34	9	0	0	0	0	0	43	10.2%	2.8
E	1	31	13	2	0	0	0	0	47	11.1%	3.1
ESE	0	26	15	3	1	0	0	0	45	10.6%	3.8
SE	0	32	30	7	1	0	0	0	70	16.5%	4.5
SSE	0	21	41	1	1	0	0	0	64	15.1%	4.4
S	0	3	0	1	0	0	0	0	4	0.9%	4.6
SSW	0	0	1	0	0	0	0	0	1	0.2%	4.1
SW	0	2	0	0	0	0	0	0	2	0.5%	1.9
WSW	0	0	1	0	0	0	0	0	1	0.2%	4.2
W	0	2	1	0	0	0	0	0	3	0.7%	3.2
WNW	0	5	0	0	0	0	0	0	5	1.2%	2.7
NW	0	5	2	0	0	0	0	0	7	1.7%	3.1
NNW	0	9	10	1	0	0	0	0	20	4.7%	4.2
Total	3	246	155	16	3	0	0	0	423		
% Of Total	0.7%	58.2%	36.6%	3.8%	0.7%	0.0%	0.0%	0.0%			

Average speed for this table (MPH):	3.6
Hours in above table with variable direction :	0
Total number of CALMs :	12
Total number of Invalid hours :	1
Total number of Valid hours :	2207
Total number of hours for period :	2208

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS G

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	2	9	9	0	0	0	0	0	20	11.0%	3.1
NNE	1	24	1	0	0	0	0	0	26	14.4%	2.5
NE	1	37	0	0	0	0	0	0	38	21.0%	2.0
ENE	3	15	0	0	0	0	0	0	18	9.9%	1.7
E	0	13	2	0	0	0	0	0	15	8.3%	2.0
ESE	1	4	1	0	0	0	0	0	6	3.3%	2.1
SE	0	1	1	0	0	0	0	0	2	1.1%	4.0
SSE	0	0	1	0	0	0	0	0	1	0.6%	7.2
S	0	0	0	0	0	0	0	0	0	0.0%	0.0
SSW	0	1	0	0	0	0	0	0	1	0.6%	1.7
SW	1	0	0	0	0	0	0	0	1	0.6%	0.5
WSW	0	1	0	0	0	0	0	0	1	0.6%	1.3
W	0	1	1	0	0	0	0	0	2	1.1%	3.8
WNW	0	13	0	0	0	0	0	0	13	7.2%	2.3
NW	0	13	3	0	0	0	0	0	16	8.8%	2.8
NNW	0	10	10	0	0	0	0	0	20	11.0%	3.4
	0	1	0	0	0	0	0	0	1	0.6%	1.6
Total	9	143	29	0	0	0	0	0	181		
% Of Total	5.0%	79.0%	16.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 2.5
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 1
Total number of Valid hours : 2207
Total number of hours for period : 2208

Joint Frequency Table

From : 07/01/2010 00:00 **To :** 09/30/2010 23:00

PRIMARY TOWER

ALL STABILITY CLASSES COMBINED

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	2	35	33	20	0	0	0	0	90	4.1%	5.0
NNE	1	70	70	28	1	0	0	0	170	7.7%	4.8
NE	3	96	60	24	0	0	0	0	183	8.3%	4.2
ENE	3	58	47	18	1	0	0	0	127	5.8%	4.4
E	1	57	55	30	5	0	0	0	148	6.7%	5.2
ESE	1	40	70	52	15	0	0	0	178	8.1%	6.7
SE	0	40	127	139	33	0	0	0	339	15.4%	7.8
SSE	0	31	134	54	22	0	0	0	241	10.9%	7.0
S	0	12	194	124	2	0	0	0	332	15.0%	7.0
SSW	0	11	112	13	0	0	0	0	136	6.2%	5.4
SW	1	8	40	8	0	0	0	0	57	2.6%	5.4
WSW	0	5	14	1	0	0	0	0	20	0.9%	4.4
W	0	13	14	0	0	0	0	0	27	1.2%	3.8
WNW	0	26	10	0	0	0	0	0	36	1.6%	3.0
NW	0	33	13	1	0	0	0	0	47	2.1%	3.2
NNW	0	28	37	10	0	0	0	0	75	3.4%	4.7
	0	1	0	0	0	0	0	0	1	0.0%	1.6
Total	12	564	1030	522	79	0	0	0	2207		
% Of Total	0.5%	25.6%	46.7%	23.7%	3.6%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 5.9
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 1
Total number of Valid hours : 2207
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS A

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	2	0	0	0	2	16.7%	13.7
SSW	0	0	0	2	1	0	0	0	3	25.0%	10.9
SW	0	0	0	4	3	0	0	0	7	58.3%	13.5
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	6	6	0	0	0	12		
% Of Total	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 12.9
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 176
Total number of Valid hours : 2032
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS B

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	1	0	0	0	1	5.0%	16.3
SE	0	0	0	0	0	0	0	0	0	0.0%	0.0
SSE	0	0	0	0	2	0	0	0	2	10.0%	15.0
S	0	0	0	7	1	0	0	0	8	40.0%	11.1
SSW	0	0	0	6	1	0	0	0	7	35.0%	10.6
SW	0	0	0	1	1	0	0	0	2	10.0%	12.8
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	14	6	0	0	0	20		
% Of Total	0.0%	0.0%	0.0%	70.0%	30.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 11.7
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 176
Total number of Valid hours : 2032
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS C

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	0	0	2	0	0	0	2	3.5%	14.0
NNE	0	0	0	0	1	2	0	0	3	5.3%	18.2
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	2	0	0	0	2	3.5%	14.6
ESE	0	0	0	0	2	0	0	0	2	3.5%	16.0
SE	0	0	0	0	0	0	0	0	0	0.0%	0.0
SSE	0	0	0	1	8	0	0	0	9	15.8%	14.7
S	0	0	0	10	1	0	0	0	11	19.3%	11.0
SSW	0	0	0	6	2	0	0	0	8	14.0%	10.9
SW	0	0	0	2	2	0	0	0	4	7.0%	13.9
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	1	1	0	0	0	2	3.5%	12.9
NNW	0	0	0	4	10	0	0	0	14	24.6%	13.8
Total	0	0	0	24	31	2	0	0	57		
% Of Total	0.0%	0.0%	0.0%	42.1%	54.4%	3.5%	0.0%	0.0%			

Average speed for this table (MPH): 13.3
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 176
Total number of Valid hours : 2032
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS D

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	2	12	33	17	0	0	0	64	9.5%	9.9
NNE	0	0	25	24	4	1	0	0	54	8.0%	8.5
NE	0	1	32	25	1	0	0	0	59	8.8%	7.5
ENE	0	0	10	15	1	0	0	0	26	3.9%	8.1
E	0	1	3	6	1	0	0	0	11	1.6%	8.9
ESE	0	1	6	17	2	0	0	0	26	3.9%	9.3
SE	0	1	11	31	16	1	0	0	60	8.9%	10.6
SSE	0	1	19	36	26	0	0	0	82	12.2%	10.7
S	0	4	45	57	14	0	0	0	120	17.9%	8.6
SSW	0	1	23	13	3	0	0	0	40	6.0%	7.5
SW	0	0	10	17	0	0	0	0	27	4.0%	8.0
WSW	0	2	2	2	0	0	0	0	6	0.9%	5.7
W	0	0	0	0	0	0	0	0	0	0.0%	0.0
WNW	0	0	7	1	1	0	0	0	9	1.3%	6.9
NW	0	0	3	9	2	0	0	0	14	2.1%	10.0
NNW	0	0	12	25	26	11	0	0	74	11.0%	12.6
Total	0	14	220	311	114	13	0	0	672		
% Of Total	0.0%	2.1%	32.7%	46.3%	17.0%	1.9%	0.0%	0.0%			

Average speed for this table (MPH): 9.4
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 176
Total number of Valid hours : 2032
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS E

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	7	16	32	5	0	0	0	60	9.3%	8.4
NNE	0	3	24	12	4	0	0	0	43	6.6%	7.3
NE	0	6	14	5	2	0	0	0	27	4.2%	5.9
ENE	0	4	15	6	0	0	0	0	25	3.9%	5.8
E	0	6	9	5	0	0	0	0	20	3.1%	5.7
ESE	0	2	11	2	0	0	0	0	15	2.3%	5.8
SE	0	3	17	33	8	0	0	0	61	9.4%	8.5
SSE	0	4	32	70	16	1	0	0	123	19.0%	9.2
S	0	1	62	33	4	0	0	0	100	15.5%	7.2
SSW	0	6	39	15	3	0	0	0	63	9.7%	6.6
SW	0	1	7	2	0	0	0	0	10	1.5%	5.6
WSW	0	1	2	0	0	0	0	0	3	0.5%	4.6
W	0	0	2	0	0	0	0	0	2	0.3%	5.5
WNW	0	3	1	0	0	0	0	0	4	0.6%	2.7
NW	0	3	5	6	3	0	0	0	17	2.6%	8.1
NNW	0	3	14	33	22	2	0	0	74	11.4%	10.3
Total	0	53	270	254	67	3	0	0	647		
% Of Total	0.0%	8.2%	41.7%	39.3%	10.4%	0.5%	0.0%	0.0%			

Average speed for this table (MPH): 7.9
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 176
Total number of Valid hours : 2032
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS F

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	3	17	3	0	0	0	0	23	11.2%	5.9
NNE	0	6	8	8	0	0	0	0	22	10.7%	6.1
NE	2	3	6	1	0	0	0	0	12	5.9%	4.5
ENE	1	2	1	0	0	0	0	0	4	2.0%	2.4
E	0	6	6	0	0	0	0	0	12	5.9%	4.0
ESE	0	7	15	0	0	0	0	0	22	10.7%	4.2
SE	0	6	18	4	0	0	0	0	28	13.7%	5.0
SSE	0	6	21	2	0	0	0	0	29	14.1%	4.8
S	0	5	12	0	0	0	0	0	17	8.3%	4.5
SSW	0	0	3	0	0	0	0	0	3	1.5%	5.3
SW	0	3	1	0	0	0	0	0	4	2.0%	3.7
WSW	0	1	1	0	0	0	0	0	2	1.0%	3.1
W	0	1	0	0	0	0	0	0	1	0.5%	2.9
WNW	0	0	1	0	0	0	0	0	1	0.5%	4.2
NW	0	1	5	2	0	0	0	0	8	3.9%	6.3
NNW	0	1	13	3	0	0	0	0	17	8.3%	6.6
Total	3	51	128	23	0	0	0	0	205		
% Of Total	1.5%	24.9%	62.4%	11.2%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 5.0
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 176
Total number of Valid hours : 2032
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS G

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	24	16	0	0	0	0	0	40	9.5%	3.4
NNE	2	16	16	1	0	0	0	0	35	8.4%	3.8
NE	4	30	24	1	0	0	0	0	59	14.1%	3.5
ENE	1	35	7	0	0	0	0	0	43	10.3%	2.6
E	0	42	17	0	0	0	0	0	59	14.1%	3.0
ESE	0	37	10	0	0	0	0	0	47	11.2%	2.9
SE	0	31	16	0	0	0	0	0	47	11.2%	3.3
SSE	0	6	5	0	0	0	0	0	11	2.6%	3.6
S	0	1	0	0	0	0	0	0	1	0.2%	3.2
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	1	0	0	0	0	0	0	1	0.2%	1.6
WNW	0	5	1	0	0	0	0	0	6	1.4%	2.7
NW	1	22	8	0	0	0	0	0	31	7.4%	3.1
NNW	1	21	17	0	0	0	0	0	39	9.3%	3.4
Total	9	271	137	2	0	0	0	0	419		
% Of Total	2.1%	64.7%	32.7%	0.5%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 3.2
Hours in above table with variable direction : 0
Total number of CALMs : 12
Total number of Invalid hours : 176
Total number of Valid hours : 2032
Total number of hours for period : 2208

Joint Frequency Table

From : 10/01/2010 00:00 **To :** 12/31/2010 23:00

PRIMARY TOWER

ALL STABILITY CLASSES COMBINED

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	36	61	68	24	0	0	0	189	9.3%	7.6
NNE	2	25	73	45	9	3	0	0	157	7.7%	7.0
NE	6	40	76	32	3	0	0	0	157	7.7%	5.5
ENE	2	41	33	21	1	0	0	0	98	4.8%	4.9
E	0	55	35	11	3	0	0	0	104	5.1%	4.5
ESE	0	47	42	19	5	0	0	0	113	5.6%	5.4
SE	0	41	62	68	24	1	0	0	196	9.6%	7.4
SSE	0	17	77	109	52	1	0	0	256	12.6%	9.1
S	0	11	119	107	22	0	0	0	259	12.7%	8.0
SSW	0	7	65	42	10	0	0	0	124	6.1%	7.4
SW	0	4	18	26	6	0	0	0	54	2.7%	8.6
WSW	0	4	5	2	0	0	0	0	11	0.5%	4.9
W	0	2	2	0	0	0	0	0	4	0.2%	3.9
WNW	0	8	10	1	1	0	0	0	20	1.0%	4.6
NW	1	26	21	18	6	0	0	0	72	3.5%	6.3
NNW	1	25	56	65	58	13	0	0	218	10.7%	9.8
Total	12	389	755	634	224	18	0	0	2032		
% Of Total	0.6%	19.1%	37.2%	31.2%	11.0%	0.9%	0.0%	0.0%			

Average speed for this table (MPH):	7.4
Hours in above table with variable direction :	0
Total number of CALMs :	12
Total number of Invalid hours :	176
Total number of Valid hours :	2032
Total number of hours for period :	2208

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS A

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	0	0	0	0	0	0	0	******	0.0
NNE	0	0	0	0	0	0	0	0	0	******	0.0
NE	0	0	0	0	0	0	0	0	0	******	0.0
ENE	0	0	0	0	0	0	0	0	0	******	0.0
E	0	0	0	0	0	0	0	0	0	******	0.0
ESE	0	0	0	0	0	0	0	0	0	******	0.0
SE	0	0	0	0	0	0	0	0	0	******	0.0
SSE	0	0	0	0	0	0	0	0	0	******	0.0
S	0	0	0	0	0	0	0	0	0	******	0.0
SSW	0	0	0	0	0	0	0	0	0	******	0.0
SW	0	0	0	0	0	0	0	0	0	******	0.0
WSW	0	0	0	0	0	0	0	0	0	******	0.0
W	0	0	0	0	0	0	0	0	0	******	0.0
WNW	0	0	0	0	0	0	0	0	0	******	0.0
NW	0	0	0	0	0	0	0	0	0	******	0.0
NNW	0	0	0	0	0	0	0	0	0	******	0.0
Total	0	0	0	0	0	0	0	0	0		
% Of Total	********	********	********	********	********	********	********	********			

Average speed for this table (MPH): 0.0
Hours in above table with variable direction : 0
Total number of CALMs : 0
Total number of Invalid hours : 0
Total number of Valid hours : 98
Total number of hours for period : 98

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS B

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	2	0	0	0	2	40.0%	13.7
S	0	0	0	3	0	0	0	0	3	60.0%	10.3
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	3	2	0	0	0	5		
% Of Total	0.0%	0.0%	0.0%	60.0%	40.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 11.7
Hours in above table with variable direction : 0
Total number of CALMs : 0
Total number of Invalid hours : 0
Total number of Valid hours : 98
Total number of hours for period : 98

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS C

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	2	0	0	0	2	18.2%	13.3
S	0	0	0	8	0	0	0	0	8	72.7%	10.2
SSW	0	0	0	1	0	0	0	0	1	9.1%	7.9
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	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	9	2	0	0	0	11		
% Of Total	0.0%	0.0%	0.0%	81.8%	18.2%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 10.6
Hours in above table with variable direction : 0
Total number of CALMs : 0
Total number of Invalid hours : 0
Total number of Valid hours : 98
Total number of hours for period : 98

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS D

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	1	0	0	0	0	1	4.0%	10.8
SSE	0	0	1	4	4	0	0	0	9	36.0%	11.5
S	0	0	1	4	0	0	0	0	5	20.0%	8.6
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	3	0	0	3	12.0%	20.0
NNW	0	0	0	0	4	3	0	0	7	28.0%	17.3
Total	0	0	2	9	8	6	0	0	25		
% Of Total	0.0%	0.0%	8.0%	36.0%	32.0%	24.0%	0.0%	0.0%			

Average speed for this table (MPH): 13.6
Hours in above table with variable direction : 0
Total number of CALMs : 0
Total number of Invalid hours : 0
Total number of Valid hours : 98
Total number of hours for period : 98

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS E

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	1	0	0	0	0	0	0	1	3.0%	3.5
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	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	2	4	5	0	0	0	0	11	33.3%	6.6
SSE	0	0	4	4	0	0	0	0	8	24.2%	7.6
S	0	0	5	1	0	0	0	0	6	18.2%	6.6
SSW	0	0	1	0	0	0	0	0	1	3.0%	5.4
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	1	2	3	0	0	0	0	6	18.2%	7.3
Total	0	4	16	13	0	0	0	0	33		
% Of Total	0.0%	12.1%	48.5%	39.4%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 6.8
Hours in above table with variable direction : 0
Total number of CALMs : 0
Total number of Invalid hours : 0
Total number of Valid hours : 98
Total number of hours for period : 98

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS F

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	4	0	0	0	0	0	4	25.0%	6.1
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	5	0	0	0	0	0	5	31.3%	5.3
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	1	0	0	0	0	0	0	1	6.3%	3.0
WNW	0	1	0	0	0	0	0	0	1	6.3%	2.6
NW	0	0	1	0	0	0	0	0	1	6.3%	5.3
NNW	0	0	4	0	0	0	0	0	4	25.0%	4.6
Total	0	2	14	0	0	0	0	0	16		
% Of Total	0.0%	12.5%	87.5%	0.0%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 5.0
Hours in above table with variable direction : 0
Total number of CALMs : 0
Total number of Invalid hours : 0
Total number of Valid hours : 98
Total number of hours for period : 98

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

STABILITY CLASS G

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	3	0	0	0	0	0	3	37.5%	3.9
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	2	0	0	0	0	0	0	2	25.0%	2.8
WNW	0	0	1	0	0	0	0	0	1	12.5%	3.6
NW	0	0	0	0	0	0	0	0	0	0.0%	0.0
NNW	0	0	2	0	0	0	0	0	2	25.0%	4.1
Total	0	2	6	0	0	0	0	0	8		
% Of Total	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 3.7
Hours in above table with variable direction : 0
Total number of CALMs : 0
Total number of Invalid hours : 0
Total number of Valid hours : 98
Total number of hours for period : 98

Joint Frequency Table - Batch Release Hours

From : 01/01/2010 00:00 **To :** 03/31/2010 23:00

PRIMARY TOWER

ALL STABILITY CLASSES COMBINED

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	1	4	0	0	0	0	0	5	5.1%	5.5
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	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	2	7	6	0	0	0	0	15	15.3%	6.3
SSE	0	0	10	8	8	0	0	0	26	26.5%	9.4
S	0	0	6	16	0	0	0	0	22	22.4%	8.9
SSW	0	0	1	1	0	0	0	0	2	2.0%	6.7
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	3	0	0	0	0	0	0	3	3.1%	2.9
WNW	0	1	1	0	0	0	0	0	2	2.0%	3.1
NW	0	0	1	0	0	3	0	0	4	4.1%	16.3
NNW	0	1	8	3	4	3	0	0	19	19.4%	10.1
Total	0	8	38	34	12	6	0	0	98		
% Of Total	0.0%	8.2%	38.8%	34.7%	12.2%	6.1%	0.0%	0.0%			

Average speed for this table (MPH):	8.7
Hours in above table with variable direction :	0
Total number of CALMs :	0
Total number of Invalid hours :	0
Total number of Valid hours :	98
Total number of hours for period :	98

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS A

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. 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	2	0	0	0	3	60.0%	15.1
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	2	0	0	0	0	2	40.0%	11.1
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	3	2	0	0	0	5		
% Of Total	0.0%	0.0%	0.0%	60.0%	40.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 13.5
Hours in above table with variable direction : 0
Total number of CALMs : 4
Total number of Invalid hours : 0
Total number of Valid hours : 674
Total number of hours for period : 674

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS B

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	0	0	0	0	0	0	0	0.0%	0.0
NNE	0	0	1	0	0	0	0	0	1	5.6%	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	0	0	0	0	0	0.0%	0.0
ESE	0	0	0	0	3	5	0	0	8	44.4%	19.9
SE	0	0	0	0	3	1	0	0	4	22.2%	15.9
SSE	0	0	0	0	4	0	0	0	4	22.2%	15.7
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	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	1	0	0	0	0	0	1	5.6%	7.1
Total	0	0	2	0	10	6	0	0	18		
% Of Total	0.0%	0.0%	11.1%	0.0%	55.6%	33.3%	0.0%	0.0%			

Average speed for this table (MPH): 16.6
Hours in above table with variable direction : 0
Total number of CALMs : 4
Total number of Invalid hours : 0
Total number of Valid hours : 674
Total number of hours for period : 674

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS C

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	0	0	0	1	0	0	0	1	3.7%	13.9
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	6	6	0	0	12	44.4%	19.0
SE	0	1	0	0	2	1	0	0	4	14.8%	13.1
SSE	0	0	1	0	2	0	0	0	3	11.1%	11.5
S	0	0	0	1	2	0	0	0	3	11.1%	13.0
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	1	0	0	0	0	1	3.7%	12.4
NW	0	0	0	0	1	0	0	0	1	3.7%	13.9
NNW	0	0	1	0	1	0	0	0	2	7.4%	10.4
Total	0	1	2	2	15	7	0	0	27		
% Of Total	0.0%	3.7%	7.4%	7.4%	55.6%	25.9%	0.0%	0.0%			

Average speed for this table (MPH):	15.4
Hours in above table with variable direction :	0
Total number of CALMs :	4
Total number of Invalid hours :	0
Total number of Valid hours :	674
Total number of hours for period :	674

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS D

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	1	4	2	3	1	0	0	11	2.8%	10.6
NNE	0	1	4	3	0	0	0	0	8	2.0%	6.9
NE	0	0	0	3	3	0	0	0	6	1.5%	12.0
ENE	0	2	2	0	0	0	0	0	4	1.0%	4.3
E	0	2	2	19	29	1	0	0	53	13.3%	12.4
ESE	0	0	10	37	47	3	0	0	97	24.3%	12.6
SE	0	0	8	41	62	6	0	0	117	29.3%	13.0
SSE	0	0	5	35	10	0	0	0	50	12.5%	10.8
S	0	1	2	17	3	0	0	0	23	5.8%	9.3
SSW	0	3	2	0	0	0	0	0	5	1.3%	3.4
SW	0	0	0	1	0	0	0	0	1	0.3%	8.8
WSW	0	0	1	0	0	0	0	0	1	0.3%	6.1
W	0	0	0	3	0	0	0	0	3	0.8%	11.0
WNW	0	0	0	0	0	0	0	0	0	0.0%	0.0
NW	0	0	0	2	3	1	0	0	6	1.5%	13.5
NNW	0	0	3	7	4	0	0	0	14	3.5%	9.9
Total	0	10	43	170	164	12	0	0	399		
% Of Total	0.0%	2.5%	10.8%	42.6%	41.1%	3.0%	0.0%	0.0%			

Average speed for this table (MPH): 11.8
Hours in above table with variable direction : 0
Total number of CALMs : 4
Total number of Invalid hours : 0
Total number of Valid hours : 674
Total number of hours for period : 674

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS E

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	1	6	6	3	0	0	0	16	11.3%	8.0
NNE	0	1	1	3	0	0	0	0	5	3.5%	6.4
NE	0	2	1	0	0	0	0	0	3	2.1%	4.0
ENE	0	1	6	1	0	0	0	0	8	5.6%	6.0
E	0	1	13	3	0	0	0	0	17	12.0%	6.0
ESE	0	1	6	3	0	0	0	0	10	7.0%	6.1
SE	0	2	16	7	0	0	0	0	25	17.6%	6.4
SSE	0	0	4	10	0	0	0	0	14	9.9%	8.5
S	0	0	7	0	0	0	0	0	7	4.9%	5.8
SSW	0	2	1	0	0	0	0	0	3	2.1%	2.9
SW	0	1	0	0	0	0	0	0	1	0.7%	2.2
WSW	0	0	0	0	0	0	0	0	0	0.0%	0.0
W	0	1	0	0	0	0	0	0	1	0.7%	3.1
WNW	0	1	2	0	0	0	0	0	3	2.1%	4.2
NW	0	1	9	3	0	0	0	0	13	9.2%	6.5
NNW	0	1	4	9	2	0	0	0	16	11.3%	8.7
Total	0	16	76	45	5	0	0	0	142		
% Of Total	0.0%	11.3%	53.5%	31.7%	3.5%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 6.7
Hours in above table with variable direction : 0
Total number of CALMs : 4
Total number of Invalid hours : 0
Total number of Valid hours : 674
Total number of hours for period : 674

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS F

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	0	1	1	0	0	0	0	0	2	7.1%	3.2
NNE	0	2	1	0	0	0	0	0	3	10.7%	3.4
NE	0	2	0	0	0	0	0	0	2	7.1%	3.3
ENE	0	0	1	0	0	0	0	0	1	3.6%	3.6
E	0	1	2	0	0	0	0	0	3	10.7%	3.7
ESE	0	2	1	0	0	0	0	0	3	10.7%	2.5
SE	0	0	5	0	0	0	0	0	5	17.9%	5.8
SSE	0	4	2	0	0	0	0	0	6	21.4%	3.5
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	3.6%	6.2
WNW	0	0	1	0	0	0	0	0	1	3.6%	5.5
NW	0	0	1	0	0	0	0	0	1	3.6%	6.7
NNW	0	0	0	0	0	0	0	0	0	0.0%	0.0
Total	0	12	16	0	0	0	0	0	28		
% Of Total	0.0%	42.9%	57.1%	0.0%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 4.1
Hours in above table with variable direction : 0
Total number of CALMs : 4
Total number of Invalid hours : 0
Total number of Valid hours : 674
Total number of hours for period : 674

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

STABILITY CLASS G

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	1	6	1	0	0	0	0	0	8	14.5%	1.7
NNE	0	7	0	0	0	0	0	0	7	12.7%	2.5
NE	0	3	0	0	0	0	0	0	3	5.5%	1.8
ENE	0	3	0	0	0	0	0	0	3	5.5%	1.6
E	1	4	0	0	0	0	0	0	5	9.1%	1.5
ESE	0	4	0	0	0	0	0	0	4	7.3%	1.7
SE	0	1	0	0	0	0	0	0	1	1.8%	3.1
SSE	0	1	0	0	0	0	0	0	1	1.8%	1.7
S	0	0	0	0	0	0	0	0	0	0.0%	0.0
SSW	0	1	0	0	0	0	0	0	1	1.8%	1.2
SW	0	1	0	0	0	0	0	0	1	1.8%	1.0
WSW	0	3	3	0	0	0	0	0	6	10.9%	3.8
W	0	1	2	0	0	0	0	0	3	5.5%	3.8
WNW	0	5	0	0	0	0	0	0	5	9.1%	2.0
NW	0	1	0	0	0	0	0	0	1	1.8%	3.4
NNW	2	2	2	0	0	0	0	0	6	10.9%	2.0
Total	4	43	8	0	0	0	0	0	55		
% Of Total	7.3%	78.2%	14.5%	0.0%	0.0%	0.0%	0.0%	0.0%			

Average speed for this table (MPH): 2.2
Hours in above table with variable direction : 0
Total number of CALMs : 4
Total number of Invalid hours : 0
Total number of Valid hours : 674
Total number of hours for period : 674

Joint Frequency Table - Batch Release Hours

From : 04/01/2010 00:00 **To :** 06/30/2010 23:00

PRIMARY TOWER

ALL STABILITY CLASSES COMBINED

Wind Speed (MPH) -> / Sector	(1) CALM	(2) 1.0 - 3.5	(3) 3.6 - 7.5	(4) 7.6 - 12.5	(5) 12.6 - 18.5	(6) 18.6 - 24.5	(7) 24.6 - 32.5	(8) 32.6 +	Total	% Of Total	Avg. Speed
N	1	9	12	8	7	1	0	0	38	5.6%	7.3
NNE	0	11	7	6	0	0	0	0	24	3.6%	5.1
NE	0	7	1	3	3	0	0	0	14	2.1%	6.9
ENE	0	6	9	1	0	0	0	0	16	2.4%	4.6
E	1	8	17	22	29	1	0	0	78	11.6%	10.0
ESE	0	7	17	40	56	14	0	0	134	19.9%	12.6
SE	0	4	29	48	67	8	0	0	156	23.1%	11.7
SSE	0	5	12	46	18	0	0	0	81	12.0%	10.2
S	0	1	9	18	5	0	0	0	33	4.9%	8.9
SSW	0	6	3	0	0	0	0	0	9	1.3%	3.0
SW	0	2	0	1	0	0	0	0	3	0.4%	4.0
WSW	0	3	4	0	0	0	0	0	7	1.0%	4.1
W	0	2	3	3	0	0	0	0	8	1.2%	6.7
WNW	0	6	3	3	0	0	0	0	12	1.8%	5.2
NW	0	2	10	5	4	1	0	0	22	3.3%	8.6
NNW	2	3	11	16	7	0	0	0	39	5.8%	8.1
Total	4	82	147	220	196	25	0	0	674		
% Of Total	0.6%	12.2%	21.8%	32.6%	29.1%	3.7%	0.0%	0.0%			

Average speed for this table (MPH): 9.9
Hours in above table with variable direction : 0
Total number of CALMs : 4
Total number of Invalid hours : 0
Total number of Valid hours : 674
Total number of hours for period : 674

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