INDIANA MICHIGAN POWER

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2008, THROUGH DECEMBER 31, 2008

In accordance with Technical Specification 5.6.3, Indiana Michigan Power Company, the licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, hereby submits the Annual Radioactive Effluent Release Report. This report covers the period January 1, 2008, through December 31, 2008.

The calculations in this report were performed in accordance with the CNP Offsite Dose Calculation Manual (ODCM). There has been no revision made to the ODCM during this reporting period.

This letter contains no new or revised commitments. Should you have any questions, please contact Mr. John A. Zwolinski, Regulatory Affairs Manager, at (269) 466-2478.

Sincerely,

Lawrence J. Weber
Site Vice President

RP/rdw

Attachment

c: T. A. Beltz - NRC Washington, DC
K. D. Curry - AEP Ft. Wayne, w/o attachment
J. T. King - MPSC, w/o attachment
MDEQ - WHMD/RPS, w/o attachment
NRC Resident Inspector
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ATTACHMENT TO AEP-NRC-2009-29

DONALD C. COOK NUCLEAR PLANT UNITS 1 AND 2
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2008, THROUGH DECEMBER 31, 2008

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I. INTRODUCTION

This report discusses the radioactive discharges from Unit 1 and Unit 2 of the Donald C. Cook Nuclear Plant (CNP) during 2008. This is in accordance with the requirements of CNP Technical Specification 5.6.3.

The table below summarizes the pertinent statistics concerning CNP's operation during the period from January 1, 2008, to December 31, 2008. The data in this table and the descriptive information on plant operation are based upon the respective Unit's Monthly Operating Reports, Performance Indicators, and Control Room Logs for 2008.

Parameter	Unit 1	Unit 2
Gross Electrical Energy Generation (Megawatt Hour (MWH))	5,829,281	9,696,184
Unit Service Factor (Percent (%))	61.6	98.5
Unit Capacity Factor (Maximum Dependable Capacity (MDC)) Net (%)	62.3	99.3

Unit 1 entered the reporting period in Mode 1 at Nominal Full Power (NFP). Small power adjustments were made to facilitate main turbine valve testing throughout the year. The unit was manually tripped on February 2, 2008, due to high vibrations experienced on the Main Turbine. The unit entered Mode 3 Hot Shutdown following the event. Unit 1 attained criticality on February 3, 2008, and returned to NFP on February 6, 2008. The unit commenced end of cycle coast down load reduction on March 23, 2008, and entered the scheduled U1C22 refueling outage on March 26, 2008. The unit attained criticality on April 29, 2008, and attained NFP on May 4, 2008. Unit 1 reduced power to 90% on June 27, 2008, to investigate and repair a Main Condenser tube leak. The unit returned to NFP on June 30, 2008. The unit was manually tripped on September 20, 2008, due to Main Turbine blade failure. The unit entered Mode 5 Cold Shutdown following the event and exited the reporting period at Mode 5 Cold Shutdown.

Unit 2 entered the reporting period in Mode 1 at NFP. Small power adjustments were made to facilitate main turbine valve testing throughout the year. The unit commenced a downpower to 54% on January 11, 2008, for maintenance on the West Main Feed Pump. Unit 2 returned to NFP on January 13, 2008. On April 2, 2008, Unit 2 performed a 25% downpower and isolated a Main Condenser due to a tube leak. The unit returned to NFP later on April 2, 2008. On May 16, 2008, Unit 2 performed a downpower to Mode 2 to remove the Main Turbine from service for maintenance. The reactor remained critical at 3% until work was complete, and was followed by a power escalation to NFP on May 18, 2008. On August 7, 2008, the unit experienced a 200 megawatt load rejection caused by a Low Pressure Turbine Stop valve 'C' failing closed. This briefly lowered power to approximately 95% before load was restored. On August 15, 2008, Unit 2 performed a controlled shutdown to perform Stop Valve 'C' maintenance, entering Mode 3 Hot Shutdown on August 17, 2008. The unit attained criticality on August 21, 2008, and returned to NFP on August 22, 2008. The unit exited the reporting period at NFP.

II. RADIOACTIVE RELEASES AND RADIOLOGICAL IMPACT ON MAN

Since a number of release points are common to both units, the release data from both units are combined to form this two-unit, Annual Radioactive Effluent Release Report. Appendix A1.1 through A2.4 of this report present the information in accordance with Section 5.6.3 of Appendix A to the Facility Operating Licenses, as specified in the Technical Specifications, Regulatory Guide 1.21, and 10 CFR Part 50, Appendix I.

The "MIDAS System" is a computer code that calculates doses due to radionuclides that were released from CNP.

All liquid and gaseous releases were well within Offsite Dose Calculation Manual (ODCM) limits and Federal Limits.

There was one abnormal liquid release and no abnormal gaseous releases in 2008. The abnormal liquid release occurred when a Component Cooling Water (CCW) sample cooler failed, allowing approximately 1577 gallons of CCW water to leak into the Circulating Water system. This allowed a flowpath from the CCW system into Unit 1 steam generator (SG) sample lines that were discharged to the SG blowdown sampling recovery system which was routed to the Unit 2 SG blowdown release path downstream of the Unit 2 SG blowdown radiation monitor. It was determined through an investigation that the leak commenced on November 7, 2008, and was identified and isolated on November 10, 2008, with the leak rate calculated to be approximately 1.5 liters per minute. This release was unplanned and was not monitored by liquid effluent release monitors; however, the CCW system is monitored with radiation monitoring equipment which was in service and indicated no abnormal readings during the time period of the leak. Calculations performed during the investigation demonstrated that using the most conservative dilution values (230,000 gpm for a single Circulating Water pump) that no 10 CFR 20, Appendix B, limits were exceeded for all detected isotopes in the CCW. Three Circulating Water pumps were actually in service providing additional dilution flow. It should be noted that CCW is a system designed to act as a heat transfer "go between" for Reactor Coolant System components and systems containing lake water, containing little activity other then tritium. Calculations for activity concentrations at the Circulating Water discharge point were 2.0E-9 microcuries/gram for tritium (limit = 1.0E-3 microcuries/gram) and 2.73E-14 microcuries/gram cesium-137 (limit = 1.0E-6 microcuries/gram). No other isotopes were identified. Corrective actions were initiated and the sample cooler was repaired.

Liquid Releases

During 2008 there were 85 liquid batch releases performed. The numbers of liquid batch releases for each of the four quarters in 2008 were 34, 26, 15, and 10, respectively.

Estimated doses (in millirem) to maximally exposed individuals via the liquid release pathways are given in Appendix A1.2 of this report.

Gaseous Releases

During the first quarter of 2008, there were four batch releases from Waste Gas Decay Tanks (GDT), one containment purge, and 71 Containment Pressure Reliefs (CPR). During the second quarter, there were four batch releases from GDT and 53 CPR. During the third quarter, there were four batch releases from GDT, one containment purge, and 43 CPR. During the fourth quarter, there were four batch releases from GDT and 26 CPR. The CPR continue to be listed as batch releases as described in Nuclear Regulatory Commission Inspections 50-315/89016 (DRSS) and 50-316/8917 (DRSS). Doses continue to be calculated utilizing continuous criteria as allowed by NUREG-0133. There were a total of 16 GDT, two containment purges, and 193 CPR gaseous batch releases made during 2008.

In calculating the dose consequences for continuous and batch gaseous releases during 2008, the meteorological data measured at the time of the release were used.

The estimated doses (in millirem) to maximally exposed individuals via the gaseous release pathways are given in Appendix A1.2 of this report. For individuals that are within the site boundary, the occupancy time is sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the site boundary.

Solid Waste Disposition

There were 70 shipments of radioactive waste made during 2008. These included shipments made from the site and the various radioactive waste processors to the ultimate disposal site.

III. METEOROLOGICAL

Appendices A2.1, A2.2, A2.3, and A2.4 of this report contain the cumulative joint frequency distribution tables of wind speed and wind direction, corresponding to the various atmospheric stability classes for the first, second, third, and fourth quarters of 2008. Hourly meteorological data is available for review and/or inspection upon request.

IV. OFFSITE DOSE CALCULATION MANUAL (ODCM) CHANGES

The Offsite Dose Calculation Manual, PMP-6010-OSD-001, was not revised during the report period.

V. TOTAL DOSE

Section 3.2.5 of the ODCM requires that the dose or dose commitment to a real individual from all uranium fuel cycle sources in Berrien County be limited to no more than 25 millirem to the total body or any organ (except the thyroid, which is limited to no more than 75 millirem) over a period of 12 consecutive months to show conformance with the requirements of 40 CFR Part 190. The maximum cumulative dose to an individual from liquid and gaseous effluents during 2008 was well within the ODCM limits. Measurements using thermoluminescent dosimeters (TLD) at 11 offsite stations indicate that the dose due to direct radiation is consistent with preoperational and current control (background) levels. This is fully evaluated in the Annual Radiological Environmental Operating Report.

The annual dose to the maximum individual will be estimated by first, summing the quarterly total body air dose, the quarterly skin air dose, the quarterly critical organ dose from iodines and particulates (I&P), the quarterly total body dose from liquid effluents, the quarterly critical organ dose from liquid effluents, and the Radiological Environmental Monitoring Program onsite direct radiation TLD data. These quarterly values are summed and compared to the annual limit. The table that follows here represents the above verbal description:

Dose	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Total Body or any organ (I&P)	3.43E-02	7.87E-02	1.11E-01	2.48E-02
Total Body (Air)	5.10E-04	9.90E-04	1.60E-03	3.60E-04
Skin (Air)	5.00E-03	5.80E-03	5.20E-03	2.20E-03
Total Body (liquid)	2.60E-02	7.79E-03	9.25E-03	1.38E-02
Maximum organ (liquid)	2.60E-02	7.98E-03	9.25E-03	1.38E-02
Direct Radiation	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	9.18E-02	1.01E-01	1.36E-01	5.50E-02
Cumulative Total Dose (Total Body or any other organ) mrem				3.84E-01
Annual Dose Limit (mrem)				2.50E+01
Percent of Limit				1.54E+00

VI. RADIATION MONITORS INOPERABLE GREATER THAN 30 DAYS

There were no release pathways unmonitored for greater than 30 days. One radiation monitor channel on a release pathway was inoperable for greater than 30 days while there was a release via that pathway; however, there was backup monitoring capability in service which continued to monitor the pathway while repairs were made.

Action Request 827570 documents operability issues with VRA-1503, Unit 1 Vent Stack Iodine Radiation Monitor, which were noted on March 10, 2008, actions were taken, monitoring was conducted, further actions were warranted and taken and completed April 10, 2008. Based on a past operability determination, it was concluded that the monitoring channel was inoperable for an excess of 30 consecutive days, from February 2, 2008, through March 10, 2008. The backup iodine collection system was in service for the total time period with the exception of filter media changeout. This fulfilled PMP-6010-OSD-001, Offsite Dose Calculation Manual, Attachment 3.7, item d, for continuous analysis frequency. The system is sampled weekly, which provided the delay in identifying the problem and ensuring correction until sufficient data points were acquired to make a determination. This is being documented here for information due to the past operability determination conclusion. Once the issue was identified, it was remediated within 30 days and the monitor was not inoperable for that entire time period.

VII. CONCLUSION

Based on the information presented in this report, it is concluded that CNP Units 1 and 2 performed their intended design function with no demonstrable adverse affect on the health and safety of the general public.

SUPPLEMENTAL INFORMATION

Facility: Donald C. Cook Nuclear Plant
Licensee: Indiana Michigan Power Company

1 REGULATORY LIMITS

1.1 Noble Gases

The air dose in unrestricted areas due to noble gases released in gaseous effluents shall be limited to the following:

1.1.1 During any calendar quarter, to ≤ 5 mrad for gamma radiation and ≤ 10 mrad for beta radiation.

1.1.2 During any calendar year, to ≤ 10 mrad for gamma radiation and ≤ 20 mrad for beta radiation.

1.2 Iodines - Particulates

The dose to a member of the public from radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half-lives greater than eight days in gaseous effluents released to unrestricted areas shall be limited to the following:

1.2.1 During any calendar quarter to ≤ 7.5 mrem to any organ.

1.2.2 During any calendar year to ≤ 15 mrem to any organ.

1.3 Liquid Effluents

The dose or dose commitment to an individual from radioactive material in liquid effluents released to unrestricted areas shall be limited:

1.3.1 During any calendar quarter to ≤ 1.5 mrem to the total body and to ≤ 5 mrem to any organ.

1.3.2 During any calendar year to ≤ 3 mrem to the total body and to ≤ 10 mrem to any organ.

1.4 Total Dose

The dose or dose commitment to a real individual from all uranium fuel cycle sources is limited to ≤ 25 mrem to the total body or any organ (except the thyroid, which is limited to ≤ 75 mrem) over a period of 12 consecutive months.

2 MAXIMUM PERMISSIBLE CONCENTRATIONS

2.1 Gaseous Effluents

The dose rate due to radioactive materials released in gaseous effluents from the site shall be limited to the following:

2.1.1 For noble gases: ≤ 500 mrem/yr to the total body and ≤ 3000 mrem/yr to the skin.

2.1.2 For all radioiodines and for all radioactive materials in particulate form and radionuclides (other than noble gases) with half-lives greater than eight days: ≤ 1500 mrem/yr to any organ.

The above limits are provided to insure that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area to annual average concentrations exceeding the limits in 10 CFR Part 20, Appendix B, Table 2, Column 1.

2.2 Liquid Effluents

The concentration of radioactive material released at any time from the site to unrestricted areas shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table 2, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2×10^{-4} µCi/ml total activity.

3 AVERAGE ENERGY

The average energy ($\bar{E}$) of the radionuclide mixture in releases of fission and activation gases as defined in Regulatory Guide 1.21, Appendix B, Section A.3 is not applicable because the limits used for gaseous releases are based on calculated dose to members of the public. Release rates are calculated using an isotopic mix from actual samples rather than average energy.

4 MEASUREMENTS and APPROXIMATIONS of TOTAL RADIOACTIVITY

4.1 Fission and Activation Gases

Sampled and analyzed on a 4096 channel analyzer and HpGe detector. Tritium analysis is performed using liquid scintillation counter.

4.2 Iodines

Sampled on iodine adsorbing media and analyzed on a 4096 channel analyzer and HpGe detector.

4.3 Particulates

Sampled on a glass filter and analyzed on a 4096 channel analyzer and HpGe detector. Sr-89 and Sr-90 analyses performed by offsite vendor.

4.4 Liquid Effluents

Sampled and analyzed on a 4096 channel analyzer and HpGe detector. Tritium analysis is performed using liquid scintillation counter. Fe-55, Sr-89 and Sr-90 analyses performed by offsite vendor. Ni-63 is also currently being analyzed by the offsite vendor in response to evaluation of the 10 CFR 61 sample results.

5 BATCH RELEASES

5.1 Liquid

5.1.1 Number of batch releases:

34 releases in the 1st quarter, 2008
26 releases in the 2nd quarter, 2008
15 releases in the 3rd quarter, 2008
10 releases in the 4th quarter, 2008

5.1.2 Total time period for batch releases:

16,511 minutes

5.1.3 Maximum time for a batch release:

653 minutes

5.1.4 Average time period for batch release:

194 minutes

5.1.5 Minimum time period for a batch release:

4 minutes

5.1.6 Average stream flow during periods of release of effluent into a flowing stream:

7.65E+5 gpm circulating water

5.2 Gaseous

5.2.1 Number of batch releases:

76 releases in the 1st quarter, 2008
57 releases in the 2nd quarter, 2008
48 releases in the 3rd quarter, 2008
30 releases in the 4th quarter, 2008

5.2.2 Total time period for batch releases:

11,197 minutes

5.2.3 Maximum time for a batch release:

412 minutes

5.2.4 Average time period for batch release:

52.8 minutes

5.2.5 Minimum time period for a batch release:

12 minutes

6 ABNORMAL RELEASES

6.1 Liquid

6.1.1 Number of Releases:

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
0	0	0	1

6.1.2 Total activity released (Ci):

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
0	0	0	8.24E-03

6.2 Gaseous

6.2.1 Number of Releases:

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
0	0	0	0

6.2.2 Total activity released (Ci):

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
0	0	0	0

2008 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-GROUND LEVEL RELEASES

CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1. FISSION GASES					
H3	Ci	7.44E+01	6.60E+01	5.38E+01	4.85E+01
KR85m	Ci	2.33E-04	--------	--------	--------
KR85	Ci	--------	--------	--------	--------
XE131m	Ci	2.30E-01	--------	7.18E+00	--------
XE133m	Ci	3.46E-02	--------	--------	--------
XE133	Ci	2.80E+00	8.31E+00	--------	--------
XE135	Ci	3.15E-01	4.22E-04	--------	--------
Total for Period	Ci	7.78E+01	7.43E+01	6.10E+01	4.85E+01

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2. IODINES					
I131	Ci	8.83E-05	3.05E-04	4.97E-07	--------
I132	Ci	1.89E-05	1.39E-05	--------	--------
I133	Ci	2.18E-05	--------	--------	--------
Total for Period	Ci	1.29E-04	3.19E-04	4.97E-07	--------

3. PARTICULATES					
MN54	Ci	--------	--------	--------	--------
CO58	Ci	--------	2.62E-06	--------	--------
CO60	Ci	--------	--------	--------	--------
AG110m	Ci	--------	--------	--------	--------
CS134	Ci	--------	--------	--------	--------
CS137	Ci	--------	--------	--------	--------
Total for Period	Ci	--------	2.62E-06	--------	--------

* DENOTES SUPPLEMENTAL ISOTOPES

2008 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-GROUND LEVEL RELEASES

BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1. FISSION GASES					
H3	Ci	2.37E-02	4.91E-03	4.13E-02	2.48E-03
AR41	Ci	3.41E-01	3.04E-01	2.91E-01	2.54E-01
KR85	Ci	5.27E+00	3.94E+00	4.52E+00	1.64E+00
XE131M	Ci	1.66E-02	1.14E-02	7.37E-04	3.14E-04
XE133M	Ci	--------	--------	2.63E-03	--------
XE133	Ci	8.17E-01	2.25E-01	3.16E-01	1.88E-01
XE135	Ci	1.03E-02	8.48E-04	7.07E-03	2.29E-03
Total for Period	Ci	6.48E+00	4.49E+00	5.18E+00	2.09E+00
2. IODINES					
I131	Ci	--------	--------	--------	--------
I133	Ci	--------	--------	--------	--------
Total for Period	Ci	--------	--------	--------	--------
3. PARTICULATES					
CO60	Ci	--------	--------	--------	--------
Total for Period	Ci	--------	--------	--------	--------

2008 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

		Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error,%
A.	FISSION AND ACTIVATION GASES						
1.	Total Release	Ci	9.84E+00	1.28E+01	1.23E+01	2.08E+00	23.5
2.	Average release rate for period	uCi/sec	1.25E+00	1.63E+00	1.55E+00	2.62E-01	
3.	Percent of applicable limit*	% Gamma	3.82E-02	3.40E-02	5.94E-02	1.20E-02	
		Beta	1.36E-01	1.38E-01	6.94E-02	2.58E-02	
B.	IODINES						
1.	Total I-131	Ci	8.83E-05	3.05E-04	4.97E-07	0.00E+00	12.4
2.	Average release rate for period	uCi/sec	1.12E-05	3.88E-05	6.25E-08	0.00E+00	
3.	Percent of applicable limit*	%	4.58E-01	1.05E+00	1.48E+00	0.00E+00	
C.	PARTICULATES						
1.	Particulates with half lives>8 days	Ci	0.00E+00	2.62E-06	0.00E+00	0.00E+00	21.2
2.	Average release rate for period	uCi/sec	0.00E+00	3.33E-07	0.00E+00	0.00E+00	
3.	Percent of applicable limit*	%	0.00E+00	1.05E+00	0.00E+00	0.00E+00	
4.	Gross alpha radioactivity	Ci	<6.79E-07	<9.19E-07	<9.43E-07	<6.53E-07	
D.	TRITIUM						
1.	Total Release	Ci	7.44E+01	6.60E+01	5.38E+01	4.85E+01	11.0
2.	Average release rate for period	uCi/sec	9.46E+00	8.39E+00	6.77E+00	6.10E+00	
3.	Percent of applicable limit*	%	4.58E-01	1.05E+00	1.48E+00	3.31E-01	

* Applicable limits are expressed in terms of dose. See Appendices A1.2-1 through A1.2-4

2008 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS
CONTINUOUS MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H3	Ci	4.65E-01	4.34E-02	8.31E-02	1.27E-02
CS137	Ci	--------	--------	--------	9.40E-08

BATCH MODE

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H3	Ci	8.59E+02	3.24E+02	4.14E+02	4.20E+02
MN54	Ci	--------	1.40E-05	--------	1.28E-06
FE55	Ci	--------	1.39E-03	--------	--------
CO57	Ci	--------	5.20E-06	--------	--------
CO58	Ci	5.54E-05	3.70E-03	7.13E-05	3.43E-05
CO60	Ci	6.61E-05	4.51E-04	1.18E-04	7.18E-05
NI63	Ci	--------	1.98E-03	--------	--------
MO99	Ci	--------	2.00E-06	--------	--------
TC99m	Ci	--------	2.05E-06	--------	--------
AG110m	Ci	8.67E-05	1.77E-04	--------	6.78E-07
*SB122	Ci	--------	3.02E-06	--------	--------
SB124	Ci	--------	7.63E-05	--------	--------
SB125	Ci	3.48E-06	5.02E-04	--------	--------
I131	Ci	--------	2.07E-05	--------	--------
CS134	Ci	2.54E-06	3.78E-05	--------	--------
CS137	Ci	1.12E-06	4.49E-05	--------	--------
CE144	Ci	--------	1.06E-05	--------	--------
*KR85	Ci	2.01E-05	2.97E-06	--------	--------
*XE131m	Ci	1.49E-03	1.62E-04	--------	--------
*XE133	Ci	7.31E-02	3.63E-03	1.57E-05	4.09E-06
*XE133m	Ci	4.72E-04	--------	--------	--------
*XE135	Ci	6.67E-05	--------	--------	--------

- DENOTES SUPPLEMENTAL ISOTOPES
- Only Non-Zero Batch or Continuous Releases are Printed

2008 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES
BATCH MODE

		Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
A.	FISSION AND ACTIVATION PRODUCTS						
1.	Total Release	Ci	2.45E-04	8.42E-03	1.90E-04	1.08E-04	13.5
2.	Average diluted concentration during period	uCi/ml	1.25E-11	5.91E-10	2.13E-11	2.14E-11	
3.	Percent of applicable limit	%	2.29E-04	3.78E-03	4.82E-04	5.11E-04	
B.	TRITIUM						
1.	Total Release	Ci	8.59E+02	3.24E+02	4.14E+02	4.20E+02	10.1
2.	Average diluted concentration during period	uCi/ml	4.38E-05	2.28E-05	4.64E-05	8.33E-05	
3.	Percent of applicable limit	%	4.38E+00	2.28E+00	4.64E+00	8.33E+00	
C.	DISSOLVED AND ENTRAINED GASES						
1.	Total Release	Ci	7.51E-02	3.79E-03	1.57E-05	4.09E-06	12.2
2.	Average diluted concentration during period	uCi/ml	3.83E-09	2.65E-10	1.76E-12	8.10E-13	
3.	Percent of applicable limit	%	1.92E-03	1.33E-04	8.80E-07	4.05E-07	
D.	GROSS ALPHA RADIOACTIVITY TOTAL RELEASE	Ci	<1.85E-04	<1.49E-04	<7.44E-05	<5.48E-05	N/A
E.	VOLUME OF WASTE RELEASED	Liters	1.98E+06	1.55E+06	7.90E+05	5.74E+05	2.00
F.	VOLUME OF DILUTION WATER USED DURING PERIOD	Liters	1.96E+10	1.43E+10	8.92E+09	5.05E+09	3.48

2008 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES
CONTINUOUS MODE

		Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error,%
A.	FISSION AND ACTIVATION PRODUCTS						
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	9.40E-08	35.8
2.	Average diluted concentration during period	uCi/ml	0.00E+00	0.00E+00	0.00E+00	3.34E-16	
3.	Percent of applicable limit	%	0.00E+00	0.00E+00	0.00E+00	3.34E-08	
B.	TRITIUM						
1.	Total Release	Ci	4.65E-01	4.34E-02	8.31E-02	1.27E-02	15.8
2.	Average diluted concentration during period	uCi/ml	6.61E-10	9.93E-11	1.01E-10	4.53E-11	
3.	Percent of applicable limit	%	6.61E-10	9.93E-06	1.01E-05	4.53E-06	
C.	DISSOLVED AND ENTRAINED GASES						
1.	Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
2.	Average diluted concentration during period	uCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3.	Percent of applicable limit	%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
D.	GROSS ALPHA RADIOACTIVITY TOTAL RELEASE	Ci	<2.35E-02	<2.53E-02	<2.23E-02	<1.55E-02	N/A
E.	VOLUME OF WASTE RELEASED	Liters	1.36E+08	2.52E+07	3.69E+07	5.28E+06	2.00
F.	VOLUME OF DILUTION WATER USED DURING PERIOD	Liters	7.03E+11	4.37E+11	8.20E+11	2.81E+11	3.48

2008 Effluent and Waste Disposal Annual Report
Solid Waste and Irradiated Fuel Shipments

Solid Waste Shipped Offsite for Burial or Disposal			
1) Type of Waste	Unit	Estimated amount	Estimated Total Error, %
a) Spent resins, filters, sludge, evaporator bottoms, etc.	m^3 Curies	2.93E+00 1.43E+02	1.00E+00 3.75E+00
b) Dry compressible waste, contaminated equipment, etc.	m^3 Curies	1.35E+02 9.31E+00	1.00E+00 6.48E+00
c) Irradiated components, control rods, etc.	m^3 Curies	2.71E+00 1.81E+00	1.00E+00 6.48E+00
d) Other	m^3 Curies		

2) Estimate of Principle Radionuclide Composition								
a)	H-3	8 %	Co-58	4 %	Sb-125	2 %		
	Mn-54	2 %	Co-60	23 %	Cs-134	2 %		
	Fe-55	14 %	Ni-63	40 %	Cs-137	5 %		
b)	H-3	8 %	Co-58	8 %	Zn-65	1 %		
	Mn-54	2 %	Co-60	35 %	Cs-134	1 %		
	Fe-55	34 %	Ni-63	10 %	Cs-137	1 %		
c)	Mn-54	5 %	Zn-65	2 %	Co-60	65 %		
	Fe-55	17 %	Co-58	3 %	Ni-63	5 %	Zr-95	3 %

3) Solid Waste Disposition		
No. of Shipments	Mode of Transportation	Destination
11	Truck	Barnwell, SC
59	Truck	Clive, UT

4) Type of Containers used for Shipment: Containers used are excepted packages, Type A, Sea Land, metal boxes, drums and high integrity containers.

5) Solidification Agent: There were no solidifications performed during this report period.

2008 Effluent and Waste Disposal Annual Report Yearly Release Rates

GASES		
Fission and Activation Gases	Total Release	3.70E+01 Curies
	Average Release Rate	1.17E+00 μCi/sec
	% of Applicable Limits*	γ 7.18E-02 % β 1.85E-01 %
Iodines	Total I-131 Release	3.94E-04 Curies
	Average Release Rate	1.25E-05 μCi/sec
	% of Applicable Limit*	1.66E+00 %
Particulates	Total Release	2.62E-06 Curies
	Average Release Rate	8.29E-08 μCi/sec
	% of Applicable Limit*	1.66E+00 %
LIQUIDS		
Fission and Activation Products	Total Release	8.96E-03 Curies
	Average Diluted Concentration	1.87E-10 μCi/ml
	% of Applicable Limits*	Total Body 1.89E+00 % Organ 5.70E-01 %

* Applicable limits are expressed in terms of the annual 10 CFR 50, Appendix I, dose limits.

Site Boundary and Nearest Residence Listing

The following distances were used in the calculation of the maximum individual doses:

Sector	Direction	Boundary (Meters)	Nearest Residence (Meters)
A	N	651	659
B	NNE	617	660
C	NE	789	943
D	ENE	1497	1747
E	E	1274	1716
F	ESE	972	1643
G	SE	629	1640
H	SSE	594	964
J	S	594	997
K	SSW	629	942

Summary of Maximum Individual Doses

First Quarter 2008

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (M) (Toward)	% OF APPLICABLE LIMIT	LIMIT (mrem) QTR
Liquid	Total Body	2.60E-02	Child	Receptor 1	1.73E+00	1.5E+0
Liquid	Liver	2.60E-02	Child	Receptor 1	5.20E-01	5.0E+0
Noble Gas	Air Dose (Gamma-mrad)	1.91E-03	Any Age	594 (SSE)	3.82E-02	5.0E+0
Noble Gas	Air dose (Beta-mrad)	1.36E-02	Any Age	594 (SSE)	1.36E-01	1.0E+1
Iodines and Particulates	Thyroid	3.43E-02	Child	659 (N)	4.57E-01	7.5E+0

Summary of Maximum Individual Doses

Second Quarter 2008

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (M) (Toward)	% OF APPLICABLE LIMIT	LIMIT (mrem) QTR
Liquid	Total Body	7.79E-03	Child	Receptor 1	5.19E-01	1.5E+0
Liquid	Liver	7.98E-03	Child	Receptor 1	1.60E-01	5.0E+0
Noble Gas	Air Dose (Gamma-mrad)	1.70E-03	Any Age	651 (N)	3.40E-02	5.0E+0
Noble Gas	Air dose (Beta-mrad)	1.38E-02	Any Age	1274 (E)	1.38E-01	1.0E+1
Iodines and Particulates	Thyroid	7.87E-02	Child	659 (N)	1.05E+00	7.5E+0

Summary of Maximum Individual Doses

Third Quarter 2008

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (M) (Toward)	% OF APPLICABLE LIMIT	LIMIT (mrem) QTR
Liquid	Total Body	9.25E-03	Child	Receptor 1	6.17E-01	1.5E+0
Liquid	GI-Tract	9.25E-03	Child	Receptor 1	1.85E-01	5.0E+0
Noble Gas	Air Dose (Gamma-mrad)	2.97E-03	Any Age	651 (N)	5.94E-02	5.0E+0
Noble Gas	Air dose (Beta-mrad)	6.94E-03	Any Age	651 (N)	6.94E-02	1.0E+1
Iodines and Particulates	Total Body	1.11E-01	Child	659 (N)	1.48E+00	7.5E+0

Summary of Maximum Individual Doses

Fourth Quarter 2008

EFFLUENT	APPLICABLE ORGAN	ESTIMATED DOSE (mrem)	AGE GROUP	LOCATION DIST DIR (M) (Toward)	% OF APPLICABLE LIMIT	LIMIT (mrem) QTR
Liquid	Total Body	1.38E-02	Child	Receptor 1	9.20E-01	1.5E+0
Liquid	GI-Tract	1.38E-02	Child	Receptor 1	2.76E-01	5.0E+0
Noble Gas	Air Dose (Gamma-mrad)	5.98E-04	Any Age	651 (N)	1.20E-02	5.0E+0
Noble Gas	Air dose (Beta-mrad)	2.58E-03	Any Age	651 (N)	2.58E-02	1.0E+1
Iodines and Particulates	Total Body	2.48E-02	Child	659 (N)	3.31E-01	7.5E+0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: A DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND SPEED (MPH)

WIND DIRECTION	1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	26	12	0	0	0	38
NNE	1	14	1	0	0	0	16
NE	0	8	6	0	0	0	14
ENE	0	8	5	0	0	0	13
E	0	13	1	0	0	0	14
ESE	0	6	2	0	0	0	8
SE	1	18	5	0	0	0	24
SSE	0	21	20	0	0	0	41
S	1	1	12	1	0	0	15
SSW	0	7	4	0	0	0	11
SW	2	18	18	4	0	0	42
WSW	1	25	25	3	0	0	54
W	0	9	9	2	0	0	20
WNW	1	13	10	0	0	0	24
NW	3	27	2	0	0	0	32
NNW	1	39	17	0	0	0	57
TOTAL	11	253	149	10	0	0	423

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: B DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	1	9	2	0	0	0	12
NNE	2	10	0	0	0	0	12
NE	1	3	1	0	0	0	5
ENE	0	2	3	0	0	0	5
E	0	3	1	0	0	0	4
ESE	1	2	3	0	0	0	6
SE	3	6	4	0	0	0	13
SSE	2	10	6	0	0	0	18
S	0	5	8	1	0	0	14
SSW	1	3	1	0	0	0	5
SW	0	5	3	1	0	0	9
WSW	0	8	7	3	0	0	18
W	0	2	5	0	0	0	7
WNW	0	3	3	3	0	0	9
NW	1	5	3	0	0	0	9
NNW	0	12	2	0	0	0	14
TOTAL	12	88	52	8	0	0	160

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: C DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND SPEED (MPH)

WIND DIRECTION	1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	5	7	2	0	0	0	14
NNE	5	6	2	0	0	0	13
NE	3	3	1	0	0	0	7
ENE	2	3	10	0	0	0	15
E	2	4	5	0	0	0	11
ESE	1	5	2	0	0	0	8
SE	3	5	0	0	0	0	8
SSE	3	7	5	0	0	0	15
S	1	8	13	2	0	0	24
SSW	2	13	7	2	0	0	24
SW	0	5	3	2	0	0	10
WSW	1	4	15	10	0	0	30
W	2	11	20	7	2	0	42
WNW	0	5	8	5	0	0	18
NW	0	12	8	0	0	0	20
NNW	0	7	0	0	0	0	7
TOTAL	30	105	101	28	2	0	266

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: D DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	10	42	3	0	0	0	55
NNE	11	34	0	0	0	0	45
NE	11	12	1	0	0	0	24
ENE	5	9	10	0	0	0	24
E	7	17	6	0	0	0	30
ESE	10	30	9	0	0	0	49
SE	16	32	9	0	0	0	57
SSE	10	45	16	1	0	0	72
S	7	37	57	18	4	0	123
SSW	3	31	31	7	0	0	72
SW	2	17	11	2	0	0	32
WSW	1	18	38	4	0	0	61
W	1	42	40	3	0	0	86
WNW	5	35	30	0	0	0	70
NW	7	40	6	0	0	0	53
NNW	8	42	6	0	0	0	56
TOTAL	114	483	273	35	4	0	909

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: E DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	9	7	0	0	0	0	16
NNE	7	3	0	0	0	0	10
NE	12	7	3	0	0	0	22
ENE	8	2	5	1	0	0	16
E	10	3	2	0	0	0	15
ESE	16	5	2	0	0	0	23
SE	14	22	3	0	0	0	39
SSE	7	26	11	2	0	0	46
S	11	12	16	6	0	0	45
SSW	3	5	1	1	0	0	10
SW	2	4	0	0	0	0	6
WSW	6	4	3	0	0	0	13
W	7	5	0	0	0	0	12
WNW	4	6	0	0	0	0	10
NW	6	8	0	0	0	0	14
NNW	13	5	0	0	0	0	18
TOTAL	135	124	46	10	0	0	315

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: F DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND SPEED (MPH)

WIND DIRECTION	1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	1	0	0	0	0	0	1
NNE	2	0	0	0	0	0	2
NE	1	0	0	0	0	0	1
ENE	4	0	0	0	0	0	4
E	5	0	0	0	0	0	5
ESE	4	0	0	0	0	0	4
SE	3	4	2	0	0	0	9
SSE	3	4	1	0	0	0	8
S	11	6	1	0	0	0	18
SSW	4	1	0	0	0	0	5
SW	1	0	0	0	0	0	1
WSW	4	0	0	0	0	0	4
W	3	0	0	0	0	0	3
WNW	4	0	0	0	0	0	4
NW	1	0	0	0	0	0	1
NNW	4	0	0	0	0	0	4
TOTAL	55	15	4	0	0	0	74

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: G DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	2	0	0	0	0	0	2
E	2	0	0	0	0	0	2
ESE	2	0	0	0	0	0	2
SE	6	0	0	0	0	0	6
SSE	7	1	0	0	0	0	8
S	3	4	0	0	0	0	7
SSW	0	2	0	0	0	0	2
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	3	0	0	0	0	0	3
NW	1	0	0	0	0	0	1
NNW	0	0	0	0	0	0	0
TOTAL	26	7	0	0	0	0	33

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 1/1/08 - 3/31/08
STABILITY CLASS: All DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	26	91	19	0	0	0	136
NNE	28	67	3	0	0	0	98
NE	28	33	12	0	0	0	73
ENE	21	24	33	1	0	0	79
E	26	40	15	0	0	0	81
ESE	34	48	18	0	0	0	100
SE	46	87	23	0	0	0	156
SSE	32	114	59	3	0	0	208
S	34	73	107	28	4	0	246
SSW	13	62	44	10	0	0	129
SW	7	49	35	9	0	0	100
WSW	13	59	88	20	0	0	180
W	13	69	74	12	2	0	170
WNW	17	62	51	8	0	0	138
NW	19	92	19	0	0	0	130
NNW	26	105	25	0	0	0	156
TOTAL	383	1075	625	91	6	0	2180

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 4

Hours are not adjusted for Daylight Savings Time

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: A DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND SPEED (MPH)

WIND DIRECTION	1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	9	70	12	0	0	0	91
NNE	3	3	0	0	0	0	6
NE	2	8	3	0	0	0	13
ENE	1	10	5	0	0	0	16
E	1	8	1	0	0	0	10
ESE	0	8	2	0	0	0	10
SE	1	12	10	1	0	0	24
SSE	2	28	21	2	0	0	53
S	0	14	32	18	2	0	66
SSW	4	7	12	1	0	0	24
SW	1	56	42	0	0	0	99
WSW	2	56	16	2	0	0	76
W	4	33	7	0	0	0	44
WNW	6	36	2	0	0	0	44
NW	1	28	0	0	0	0	29
NNW	8	75	4	0	0	0	87
TOTAL	45	452	169	24	2	0	692

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: B DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	4	9	0	0	0	0	13
NNE	1	1	0	0	0	0	2
NE	1	1	0	0	0	0	2
ENE	0	4	0	0	0	0	4
E	0	3	0	0	0	0	3
ESE	1	1	0	0	0	0	2
SE	1	4	1	0	0	0	6
SSE	0	4	2	0	0	0	6
S	1	7	6	5	0	0	19
SSW	0	2	4	1	0	0	7
SW	1	6	5	0	0	0	12
WSW	0	5	2	1	0	0	8
W	1	3	0	0	0	0	4
WNW	2	1	2	0	0	0	5
NW	2	6	0	0	0	0	8
NNW	1	5	0	0	0	0	6
TOTAL	16	62	22	7	0	0	107

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: C DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	6	1	0	0	0	7
NNE	1	2	0	0	0	0	3
NE	3	0	0	0	0	0	3
ENE	1	2	0	0	0	0	3
E	0	1	0	0	0	0	1
ESE	2	1	0	0	0	0	3
SE	0	1	1	0	0	0	2
SSE	2	2	2	0	0	0	6
S	0	7	7	3	0	0	13
SSW	0	2	5	0	0	0	7
SW	2	4	5	0	0	0	11
WSW	2	0	3	1	0	0	6
W	3	1	1	0	0	0	5
WNW	0	1	1	0	0	0	2
NW	3	1	0	0	0	0	4
NNW	3	3	1	0	0	0	7
TOTAL	22	34	27	4	0	0	87

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: D DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND SPEED (MPH)

WIND DIRECTION	1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	10	42	12	0	0	0	64
NNE	3	22	1	0	0	0	26
NE	5	11	0	0	0	0	16
ENE	3	2	0	0	0	0	5
E	3	10	7	0	0	0	20
ESE	4	10	4	0	0	0	18
SE	1	11	5	0	0	0	17
SSE	5	12	2	1	0	0	20
S	2	28	37	6	0	0	73
SSW	4	13	39	5	0	0	61
SW	4	24	21	2	0	0	51
WSW	6	13	9	3	0	0	31
W	8	4	5	0	0	0	17
WNW	5	4	1	0	0	0	10
NW	8	3	0	0	0	0	11
NNW	11	20	4	0	0	0	35
TOTAL	82	229	147	17	0	0	475

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: E DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND SPEED (MPH)

WIND DIRECTION	1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	14	4	4	0	0	0	22
NNE	9	1	1	0	0	0	11
NE	7	4	1	0	0	0	12
ENE	17	5	1	0	0	0	23
E	11	9	4	1	0	0	25
ESE	18	16	5	0	0	0	39
SE	21	22	0	0	0	0	43
SSE	10	20	1	0	0	0	31
S	8	38	11	1	0	0	58
SSW	8	19	3	2	0	0	32
SW	15	27	4	0	0	0	46
WSW	11	14	5	0	0	0	30
W	6	8	0	0	0	0	14
WNW	7	0	0	0	0	0	7
NW	9	2	0	0	0	0	11
NNW	9	4	0	0	0	0	13
TOTAL	180	193	40	4	0	0	417

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: F DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	4	0	0	0	0	0	4
NNE	4	0	0	0	0	0	4
NE	8	0	0	0	0	0	8
ENE	6	1	0	0	0	0	7
E	12	3	0	0	0	0	15
ESE	19	0	0	0	0	0	19
SE	26	5	0	0	0	0	31
SSE	17	8	1	0	0	0	26
S	12	5	1	0	0	0	18
SSW	20	4	2	0	0	0	26
SW	8	4	1	0	0	0	13
WSW	4	1	0	0	0	0	5
W	5	1	0	0	0	0	6
WNW	3	0	0	0	0	0	3
NW	5	0	0	0	0	0	5
NNW	6	0	0	0	0	0	6
TOTAL	159	32	5	0	0	0	196

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: G DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	3	0	0	0	0	0	3
NNE	1	0	0	0	0	0	1
NE	4	0	0	0	0	0	4
ENE	17	0	0	0	0	0	17
E	19	1	0	0	0	0	20
ESE	11	0	0	0	0	0	11
SE	30	1	0	0	0	0	31
SSE	35	0	0	0	0	0	35
S	30	3	0	0	0	0	33
SSW	18	1	0	0	0	0	19
SW	6	1	0	0	0	0	7
WSW	8	0	0	0	0	0	8
W	5	0	0	0	0	0	5
WNW	6	0	0	0	0	0	6
NW	1	0	0	0	0	0	1
NNW	4	0	0	0	0	0	4
TOTAL	198	7	0	0	0	0	205

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 4/1/08 - 6/30/08
STABILITY CLASS: ALL DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	44	131	29	0	0	0	204
NNE	22	29	2	0	0	0	53
NE	30	24	4	0	0	0	58
ENE	45	24	6	0	0	0	75
E	46	35	12	1	0	0	94
ESE	55	36	11	0	0	0	102
SE	80	56	17	1	0	0	154
SSE	71	74	29	3	0	0	177
S	53	102	94	33	2	0	284
SSW	54	48	65	9	0	0	176
SW	37	122	78	2	0	0	239
WSW	33	89	35	7	0	0	164
W	32	50	13	0	0	0	95
WNW	29	42	6	0	0	0	77
NW	29	40	0	0	0	0	69
NNW	42	107	9	0	0	0	158
TOTAL	702	1009	410	56	2	0	2179

PERIODS OF CALM(HOURS): 0
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 5

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: A DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	14	100	0	0	0	0	114
NNE	5	1	0	0	0	0	6
NE	3	7	0	0	0	0	10
ENE	6	10	0	0	0	0	16
E	8	16	0	0	0	0	24
ESE	10	21	0	0	0	0	31
SE	7	10	0	0	0	0	17
SSE	13	14	0	0	0	0	27
S	8	35	6	0	0	0	49
SSW	6	28	12	1	0	0	47
SW	1	77	11	0	0	0	89
WSW	5	45	7	0	0	0	57
W	6	37	0	0	0	0	43
WNW	15	25	0	0	0	0	40
NW	22	28	0	0	0	0	50
NNW	29	56	0	0	0	0	85
TOTAL	158	510	36	1	0	0	705

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: B DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	2	3	0	0	0	0	5
NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	1	1	0	0	0	0	2
E	2	0	0	0	0	0	2
ESE	1	2	0	0	0	0	3
SE	1	0	0	0	0	0	1
SSE	1	1	0	0	0	0	2
S	3	4	1	0	0	0	8
SSW	1	3	3	0	0	0	7
SW	4	4	0	0	0	0	8
WSW	0	1	0	0	0	0	1
W	0	0	0	0	0	0	0
WNW	1	0	0	0	0	0	1
NW	4	0	0	0	0	0	4
NNW	10	3	0	0	0	0	13
TOTAL	32	22	4	0	0	0	58

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: C DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	3	4	0	0	0	0	7
NNE	1	0	0	0	0	0	1
NE	1	1	0	0	0	0	2
ENE	0	0	0	0	0	0	0
E	2	0	0	0	0	0	2
ESE	4	1	0	0	0	0	5
SE	1	0	0	0	0	0	1
SSE	1	0	0	0	0	0	1
S	1	0	0	0	0	0	1
SSW	2	1	1	0	0	0	4
SW	2	4	0	0	0	0	6
WSW	0	1	0	0	0	0	1
W	1	1	0	0	0	0	2
WNW	1	0	0	0	0	0	1
NW	2	3	0	0	0	0	5
NNW	2	2	0	0	0	0	4
TOTAL	24	18	1	0	0	0	43

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: D DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	22	15	0	0	0	0	37
NNE	8	0	0	0	0	0	8
NE	1	1	0	0	0	0	2
ENE	3	0	0	0	0	0	3
E	9	1	0	0	0	0	10
ESE	2	2	0	0	0	0	4
SE	3	2	0	0	0	0	5
SSE	2	1	0	0	0	0	3
S	6	9	0	0	0	0	15
SSW	3	16	3	0	0	0	22
SW	5	27	2	0	0	0	34
WSW	5	3	0	0	0	0	8
W	9	8	0	0	0	0	17
WNW	3	1	0	0	0	0	4
NW	8	4	0	0	0	0	12
NNW	7	3	0	0	0	0	10
TOTAL	96	93	5	0	0	0	194

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: E DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	30	18	0	0	0	0	48
NNE	27	4	0	0	0	0	31
NE	20	5	0	0	0	0	25
ENE	13	2	0	0	0	0	15
E	20	3	0	0	0	0	23
ESE	30	3	0	0	0	0	33
SE	11	1	0	0	0	0	12
SSE	18	0	0	0	0	0	18
S	35	32	1	0	0	0	68
SSW	12	35	2	0	0	0	49
SW	12	37	5	0	0	0	54
WSW	3	15	0	0	0	0	18
W	11	9	1	0	0	0	21
WNW	7	2	0	0	0	0	9
NW	9	4	0	0	0	0	13
NNW	14	4	0	0	0	0	18
TOTAL	272	174	9	0	0	0	455

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: F DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	8	5	0	0	0	0	13
NNE	11	1	0	0	0	0	12
NE	22	1	0	0	0	0	23
ENE	10	1	0	0	0	0	11
E	31	0	0	0	0	0	31
ESE	45	3	0	0	0	0	48
SE	19	1	0	0	0	0	20
SSE	15	0	0	0	0	0	15
S	40	24	0	0	0	0	64
SSW	11	7	5	0	0	0	23
SW	8	8	1	0	0	0	17
WSW	5	0	1	0	0	0	6
W	7	0	0	0	0	0	7
WNW	2	1	0	0	0	0	3
NW	3	1	0	0	0	0	4
NNW	3	9	0	0	0	0	12
TOTAL	240	62	7	0	0	0	309

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: G DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	8	0	0	0	0	0	8
NNE	5	0	0	0	0	0	5
NE	19	0	0	0	0	0	19
ENE	52	0	0	0	0	0	52
E	61	0	0	0	0	0	61
ESE	35	0	0	0	0	0	35
SE	40	0	0	0	0	0	40
SSE	62	0	0	0	0	0	62
S	70	3	0	0	0	0	73
SSW	34	0	0	0	0	0	34
SW	12	0	0	0	0	0	12
WSW	8	0	0	0	0	0	8
W	9	0	0	0	0	0	9
WNW	4	0	0	0	0	0	4
NW	3	0	0	0	0	0	3
NNW	5	0	0	0	0	0	5
TOTAL	427	3	0	0	0	0	430

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 7/1/08 - 9/30/08
STABILITY CLASS: ALL DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	87	145	0	0	0	0	232
NNE	58	6	0	0	0	0	64
NE	66	15	0	0	0	0	81
ENE	85	14	0	0	0	0	99
E	133	20	0	0	0	0	153
ESE	127	32	0	0	0	0	159
SE	82	14	0	0	0	0	96
SSE	112	16	0	0	0	0	128
S	163	107	8	0	0	0	278
SSW	69	90	26	1	0	0	186
SW	44	157	19	0	0	0	220
WSW	26	65	8	0	0	0	99
W	43	55	1	0	0	0	99
WNW	33	29	0	0	0	0	62
NW	51	40	0	0	0	0	91
NNW	70	77	0	0	0	0	147
TOTAL	1249	882	62	1	0	0	2194

PERIODS OF CALM(HOURS): 14
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 0

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: A DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	19	2	0	0	0	21
NNE	2	5	0	0	0	0	7
NE	2	8	0	0	0	0	10
ENE	1	2	0	0	0	0	3
E	2	7	0	0	0	0	9
ESE	1	19	4	0	0	0	24
SE	2	18	5	0	0	0	25
SSE	1	22	2	1	0	0	26
S	2	15	23	2	0	0	42
SSW	0	3	10	0	0	0	13
SW	0	13	8	5	0	0	26
WSW	1	7	9	2	0	0	19
W	1	7	3	0	0	0	11
WNW	0	11	1	0	0	0	12
NW	0	4	0	0	0	0	4
NNW	9	25	1	0	0	0	35
TOTAL	24	185	68	10	0	0	287

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: B DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	1	1	0	0	0	2
NNE	1	3	0	0	0	0	4
NE	1	4	0	0	0	0	5
ENE	2	3	0	0	0	0	5
E	1	1	1	0	0	0	3
ESE	2	7	0	0	0	0	9
SE	1	5	1	0	0	0	7
SSE	1	5	5	0	0	0	11
S	0	6	3	2	0	0	11
SSW	0	2	5	0	0	0	7
SW	0	0	1	0	0	0	1
WSW	0	4	10	7	0	0	21
W	0	1	6	0	0	0	7
WNW	1	7	3	0	0	0	11
NW	0	7	2	0	0	0	9
NNW	2	1	1	0	0	0	4
TOTAL	12	57	39	9	0	0	117

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: C DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	3	3	0	0	0	6
NNE	1	3	2	0	0	0	6
NE	0	1	2	0	0	0	3
ENE	1	4	1	0	0	0	6
E	4	3	0	0	0	0	7
ESE	4	6	0	0	0	0	10
SE	2	2	1	0	0	0	5
SSE	3	4	3	0	0	0	10
S	1	13	9	0	0	0	23
SSW	0	3	6	1	0	0	10
SW	1	3	9	0	0	0	13
WSW	0	6	11	15	0	0	32
W	0	9	3	0	0	0	12
WNW	1	7	5	0	0	0	13
NW	0	8	4	0	0	0	12
NNW	2	7	5	0	0	0	14
TOTAL	20	82	64	16	0	0	182

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: D DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	11	28	10	0	0	0	49
NNE	7	11	0	0	0	0	18
NE	6	10	2	0	0	0	18
ENE	7	10	3	0	0	0	20
E	12	13	0	0	0	0	25
ESE	7	42	0	0	0	0	49
SE	9	41	7	0	0	0	57
SSE	10	44	22	7	0	0	83
S	5	45	56	37	0	0	143
SSW	0	15	41	3	0	0	59
SW	1	20	14	5	1	0	41
WSW	1	15	14	11	2	0	43
W	7	31	29	0	0	0	67
WNW	1	53	36	0	0	0	90
NW	3	61	30	0	0	0	94
NNW	11	45	49	0	0	0	105
TOTAL	98	484	313	63	3	0	961

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: E DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	12	16	0	0	0	0	28
NNE	11	1	0	0	0	0	12
NE	17	5	0	0	0	0	22
ENE	11	3	0	0	0	0	14
E	16	13	0	0	0	0	29
ESE	18	22	0	0	0	0	40
SE	15	17	0	0	0	0	32
SSE	34	38	7	0	0	0	79
S	15	55	8	5	0	0	83
SSW	3	6	1	1	0	0	11
SW	1	3	0	0	0	0	4
WSW	2	7	2	0	0	0	11
W	4	5	1	0	0	0	10
WNW	2	4	0	0	0	0	6
NW	0	1	0	0	0	0	1
NNW	1	8	0	0	0	0	9
TOTAL	162	204	19	6	0	0	391

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: F DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	0	0	0	0	0	0
NNE	2	0	0	0	0	0	2
NE	9	0	0	0	0	0	9
ENE	12	0	0	0	0	0	12
E	12	1	0	0	0	0	13
ESE	13	1	0	0	0	0	14
SE	9	6	0	0	0	0	15
SSE	32	16	0	0	0	0	48
S	5	7	0	0	0	0	12
SSW	2	1	0	0	0	0	3
SW	1	0	0	0	0	0	1
WSW	1	2	0	0	0	0	3
W	0	0	0	0	0	0	0
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	0	1	0	0	0	0	1
TOTAL	100	35	0	0	0	0	135

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: G DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	0	0	0	0	0	0	0
NNE	2	0	0	0	0	0	2
NE	6	0	0	0	0	0	6
ENE	22	0	0	0	0	0	22
E	26	0	0	0	0	0	26
ESE	19	0	0	0	0	0	19
SE	14	1	0	0	0	0	15
SSE	21	1	0	0	0	0	22
S	13	2	0	0	0	0	15
SSW	2	0	0	0	0	0	2
SW	1	1	0	0	0	0	2
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	2	0	0	0	0	0	2
NNW	0	0	0	0	0	0	0
TOTAL	128	5	0	0	0	0	133

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

SITE: AEP COOK

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 10/1/08 - 12/31/08
STABILITY CLASS: ALL DT/DZ
ELEVATION: SPEED:SP10M DIRECTION:DIR10M LAPSE:DT60M

WIND DIRECTION	WIND SPEED (MPH) 1-4	4-8	8-13	13-19	19-25	>25	TOTAL
N	23	67	16	0	0	0	106
NNE	26	23	2	0	0	0	51
NE	41	28	4	0	0	0	73
ENE	56	22	4	0	0	0	82
E	73	38	1	0	0	0	112
ESE	64	97	4	0	0	0	165
SE	52	90	14	0	0	0	156
SSE	102	130	39	8	0	0	279
S	41	143	99	46	0	0	329
SSW	7	31	63	5	0	0	105
SW	5	40	32	10	1	0	88
WSW	5	41	46	35	2	0	129
W	12	53	42	0	0	0	107
WNW	6	82	45	0	0	0	133
NW	6	81	36	0	0	0	123
NNW	25	87	56	0	0	0	168
TOTAL	544	1052	503	104	3	0	2206

PERIODS OF CALM(HOURS): 1
VARIABLE DIRECTION: 0
HOURS OF MISSING DATA: 1

Hours are not adjusted for Daylight Savings Time

OFF-SITE DOSE CALCULATION MANUAL

The Off-Site Dose Calculation Manual, PMP-6010-OSD-001, was not revised during this reporting period.