DOCKET NUMBERS: 50-010/50-237/50-249

1. Regulatory Limits

a. For Noble Gases:

Dose Rate

- 1) Less than 500 mrem/year to the whole body.
- 2) Less than 3000 mrem/year to the skin.

Dose Gamma Radiation

- 1) Less than or equal to 5 mrad/quarter.
- 2) Less than or equal to 10 mrad/year.

Beta Radiation

- 1) Less than or equal to 10 mrad/quarter.
- 2) Less than or equal to 20 mrad/year.
- b.,c. For Iodine-131, for Iodine-133, and for all radionuclides in particulate form with half-lives greater than 8 days:

Dose Rate

1) Less than 1500 mrem/year.

Dose

- 1) Less than or equal to 7.5 mrem/quarter to any organ.
- 2) Less than or equal to 15 mrem/year to any organ.
- d. For Liquid (each operating unit):
 - 1) Less than or equal to 1.5 mrem to the whole body during any calendar quarter.
 - 2) Less than or equal to 5 mrem to any organ during any calendar quarter.
 - 3) Less than or equal to 3 mrem to the whole body during any calendar year.
 - 4) Less than or equal to 10 mrem to any organ during any calendar year.

2. Maximum Permissible Concentration

- a., b., c. For fission and activation gases, iodines and particulates with half-lives greater than 8 days, allowable dose rates are calculated by solving equations 10-1 and 10-2 from the Offsite Dose Calculation Manual (ODCM).
- d. For liquid effluents, allowable release limits are calculated by solving equations 10-3 and 10-4 from the ODCM.

3. Average Energy

The ODCM limits the dose equivalent rates due to the release of fission and activation gases to less than or equal to 500 mrem per year to the total body and less than or equal to 3,000 mrem per year to the skin. These limits are based on dose calculations using actual isotopic concentrations of our effluent streams and not based on gross count rate measuring systems. Therefore, the average beta and gamma energies (E) for gaseous effluents as described in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," are not applicable.

DOCKET NUMBERS: 50-010/50-237/50-249

4. Measurement and Approximations of Total Radioactivity

- a. Fission and Activation Gases:
- b. Iodines:
- c. Particulates:

The Units 2/3 and Unit 1 Chimneys, Units 2/3 Reactor Building Vent and Unit 1 Chemical Cleaning Building effluents are continually sampled for iodines and particulates. These samples are changed weekly and analyzed by gamma spectroscopy. The particulate filters are composited and sent to a vendor for gross alpha, Sr-89/90, and Fe-55 analysis. Noble gas grab samples are obtained weekly and analyzed by gamma spectroscopy. Tritium samples are obtained monthly and analyzed by liquid scintillation.

For the Units 2/3 Chimney and Units 2/3 Reactor Building Vent effluents, the average flow at the release points is used to calculate the curies released. For the Unit 1 Chimney and Unit 1 Chemical Cleaning Building effluents, the design basis flows are used to calculate curies released.

d. Liquid Effluents:

The river discharge tanks are analyzed for gamma-emitting nuclides by gamma spectroscopy and for tritium by liquid scintillation prior to discharge. A representative portion of this sample is saved and composited with other discharges that occur during the sampling period. The composite is sent to a vendor for analyses of gross alpha, Fe-55, and Sr-89/90.

The tank volumes and activities are used to calculate the diluted activity released at the discharge point from batch discharges.

e. Less than the Lower Limit of Detection (<LLD)

Samples are analyzed such that the ODCM LLD requirements are met. When a nuclide is not detected then <LLD is reported.

- f. Equipment Out of Service
 - (1) The Unit 3 Service Water Effluent Radiation Monitor was out of service from 0534 on November 22, 2004 until 2138 on April 9, 2005. The monitor was declared inoperable due to low sample flow through the monitor. This inoperability was not corrected in a timely manner due to excessive lead time for replacement parts, the repair of a crack discovered in the sample header, and the development and implementation of an engineering modification to improve monitor sample flow. Contingency grab sampling and analysis was performed as required during the monitor's inoperability. This inoperability of greater than 30 days is being reported per Dresden ODCM Section 12.2.A.1.3. This inoperability was also reported in the 2004 Annual Radioactive Effluent Release Report.
 - (2) The Unit 3 Service Water Effluent Radiation Monitor was out of service from 2226 on April 12, 2005 until 0130 on June 15, 2005. The monitor was declared inoperable due to low sample flow through the monitor. This inoperability was not corrected in a timely manner due to excessive lead time for replacement parts (flow element power supply). Contingency grab sampling and analysis was performed as required during the monitor's inoperability. This inoperability of greater than 30 days is being reported per Dresden ODCM Section 12.2.A.1.3.
 - (3) The Units 2/3 Main Chimney System Particulate, Iodine, and Noble Gas (SPING) Monitor was out of service on April 20, 2005 from 1417 until 1830 due to operator error. During this time, continuous iodine and particulate sampling was interrupted. The backup monitor was in service and was used to meet continuous noble gas monitoring requirements during this time. The condition was identified and corrected immediately.

DOCKET NUMBERS: 50-010/50-237/50-249

- 4. Measurement and Approximations of Total Radioactivity (continued)
 - g. Estimation of Data/Corrections:
 - (1) On April 20, 2005 continuous iodine and particulate monitoring of the Units 2/3 Main Chimney was interrupted from 1417 to 1830. The backup noble gas monitor output during this time was reviewed and no significant fluctuation was seen. It is estimated that the particulate and iodine concentrations during the interruption are equal to the particulate and iodine concentrations during the balance of that weekly collection period.
 - (2) On June 14, 2005 the particulate filter in the Units 2/3 Main Chimney SPING monitor was found to be out of position in the sample stream. This resulted in an inaccurate particulate sample collection (specifically volume measurement) for the sampling period of 0905 on June 8, 2005 to 1115 on June 14, 2005. Iodine sample collection and continuous noble gas monitoring were not affected. The ratio of Ba-139 detected on both the iodine cartridge and the particulate filter was used to estimate the Sr-89 released during the collection period, which is the only nuclide attributed to particulate monitoring of this point during this time period. Based on the estimated sample volume collected by the particulate filter, all of the required Lower Limits of Detection were met for particulate monitoring.

DOCKET NUMBERS: 50-010/50-237/50-249

SUMMATION OF ALL GASEOUS RELEASES

	Units	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Est. Total Error, %
A. FISSION & ACTIVATION GASES						
1. Total Release	Ci	2.10E+01	1.94E+01	1,55E+01	9.57E+00	24.5%
2. Average Release Rate for the Period	µCi/sec	2.71E+00	2.46E+00	1.95E+00	1.20E+00	
3. Percent of Technical Specification Limit	%	*	*	*	*	

B. IODINES

 1,	Total Iodine-131	Ci	1.27E-04	2.06E-04	2.06E-04	1.66E-04	26.0%
2.	Average Release Rate of I-131 for the Period	µCi/sec	1.63E-05	2.62E-05	2.59E-05	2.09E-05	
 3.	Percent of Technical Specification Limit	%	*	*	*	*	
 4,	Total Iodine-131, Iodine-133 and Iodine-135	Ci	5.14E-04	8.77E-04	9.29E-04	5.82E-04	

C. PARTICULATES

1. Particulates with half-lives > 8 days	Ci	6.10E-04	5.31E-04	3.87E-04	6.61E-04	29.0%
2. Average Release Rate for the Period	µCi/sec	7.85E-05	6.75E-05	4.87E-05	8.31E-05	
3. Percent of Technical Specification Limit	%	*	*	*	*)
4. Gross Alpha Radioactivity	Ci	<lld< td=""><td><lld< td=""><td><lld< td=""><td><lld< td=""><td></td></lld<></td></lld<></td></lld<></td></lld<>	<lld< td=""><td><lld< td=""><td><lld< td=""><td></td></lld<></td></lld<></td></lld<>	<lld< td=""><td><lld< td=""><td></td></lld<></td></lld<>	<lld< td=""><td></td></lld<>	

D. TRITIUM

1. Total Release	Ci	2.29E+00	1,12E+01	4.87E+00	4.94E+00	7.62%
2. Average Release Rate for the Period	µCi/sec	2.95E-01	1.42E+00	6.13E-01	6.22E-01	
3. Percent of Technical Specification Limit	%	*	*	*	*	

*The information is contained in the Radiological Impact on Man section of the report. Total airborne release data are provided which include fission and activation gases, iodines, particulates, and tritium.

DOCKET NUMBERS: 50-010/50-237/50-249

TABLE OF LOWER LIMITS OF DETECTABILITY FOR AIRBORNE EFFLUENTS

1.	FISSION/ACTIVATION GASES	μCi/cc
	Kr-87	1.00E-04
	Кг-88	1.00E-04
	Xe-133	1.00E-04
	Xe-133m	1.00E-04
	Xe-135	1.00E-04
	Xe-138	1.00E-04
2.	IODINES	μCi/cc
	I-131	1.00E-12
	I-133	1.00E-10
3.	PARTICULATES	μCi/cc
	Sr-89	1.00E-11
	Sr-90	1.00E-11
	Mn-54	1.00E-11
	Co-58	1.00E-11
	Fe-59	1.00E-11
	Co-60	1.00E-11
	Zn-65	1.00E-11
	Mo-99	1.00E-11
	Cs-134	1.00E-11
	Cs-137	1.00E-11
	Ce-141	1.00E-11
	Ce-144	1.00E-11
4.	OTHER	μCi/cc
	Н-3	1.00E-06
	Gross Alpha	1.00E-11

The above values are the ODCM-required LLDs. The actual analyses always met the required LLDs.

D1 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBER: 50-010

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GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	1" QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES	1					
Ar-41	Ci	*	*	•	*	*
Kr-85	Ci	*	*	*	*	•
Kr-85m	Ci	*	*	*	*	+
Kr-87	Ci	*	*	*	*	+
Kr-88	Ci	*	+	*	*	*
Xe-133	Ci	*	*	*	*	+
Xe-133m	Ci	*	*	*	*	+
Xe-135	Ci	+	*	*	•	*
Xe-135m	Ci	*	+	*	+	+
Xe-138	Ci	*	*	*	*	*
TOTAL	Ci	*	*	•	*	*
IODINES	1	· · · · · · · · · · · · · · · · · · ·				
		*	•	*	*	•
	Ci	*	*	*	*	*
I-135		*	*	*	*	*
TOTAL	Ci	•	*	*	*	*
PARTICULATES						
Fe-55	Ci	*	*	+	+	*
Sr-89	Ci	*	*	•	*	*
Sr-90	Ci	*	*	*	*	+
Cr-51	Ci	*	+	*	*	*
Mn-54	Ci	3.66E-06	1.33E-06	9.72E-07	1.06E-06	7.02E-06
Co-57	Ci	*	•	*	*	+
Co-58	Ci	*	*	*	*	*
Fe-59	Ci	*	*	*	*	*
Co-60	Ci	1.76E-06	3.08E-07	_1.58E-06	2.59E-06	6.24E-06
Zn-65	Ci	+	*	*	•	*
Sr-85	Ci	*	*	*	*	*
Zr-95	Ci	*	*	*	*	*
Mo-99	Ci	*	*	•	•	*
Ru-103	Ci	*	*	*	*	*
Cd-109	Ci	*	•	*	*	*
Ag-110m	Ci	*	*	*	*	*
<u>Sn-113</u>	<u> </u>	*	*	*	*	*
Sb-124	Ci	*	*	*	*	•
<u>Sb-125</u>	Ci	*	*	*	*	*
<u>Cs-134</u>	Ci	*	*	*	*	*
Cs-136	<u> </u>	+	*	*	•	*
<u>Cs-137</u>	<u>Ci</u>	+	1.75E-07	1.84E-06	 •	2.02E-06
Ba-133	Ci	*	*	*	<u> </u>	*
Ba-140	Ci	*	*	*	*	*
Ce-141	Ci	*	•	*	*	*
Cc-144	<u> </u>	*	L*	*	*	*
TOTAL	Ci	5.42E-06	1.81E-06	4.39E-06	3.65E-06	1.53E-05

D1 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBER: 50-010

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GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

BATCH MODE

NUCLIDES RELEASED	UNIT	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES				_		
Ar-41	Ci					
Кт-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Кг-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					1
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
TOTAL	Ci	None	None	None	None	None
IODINES						
L131	Ci		· · · · · · · · · · · · · · · · · · ·			
[-133		i				
[-135						
TOTAL	Ci	None	None	None	None	None
PARTICULATES						
E. 55					<u> </u>	<u> </u>
<u> </u>				<u> </u>		<u> </u>
<u> </u>						
<u>51-50</u>				<u> </u>		
<u> </u>						
<u> </u>		<u> </u>				
<u> </u>				<u> </u>		
C0-50				<u> </u>		
<u> </u>		{				
70.65		· · · · · · · ·				
<u> </u>				<u> </u>		
7- 05						· · · · · · · · · · · · · · · · · · ·
<u> </u>						
Ag-110m						
A2-110m						
Sh 124						
<u>30-123</u>					· <u></u> ·	·· <u></u>
<u> </u>						
<u> </u>				<u>├</u>		
<u></u>						
<u>Da-133</u>				<u> </u>		
				<u> </u>		
			<u></u>			
<u></u>	f			<u>├</u>		
TOTAL	Ci	None	None	None	None	None

D2/3 REACTOR BUILDING VENT

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	1" QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES						
Ar-41	Ci	*	*	*	*	+
Кг-85	Ci	*	*	*	*	*
Kr-85m	Ci	*	*	*	*	*
Kr-87	Ci	*	*	+	*	+
Kr-88	Ci	*	*	*	*	*
Xe-133	Ci	*	*	+	+	*
Xe-133m	Ci	*	*	*	*	*
Xe-135	Ci	*	+	*	*	*
Xe-135m	Ci	*	*	*	*	*
Xe-138	Ci	*	*	*	*	*
TOTAL	Ci	*	*	*	*	*
IODINES						
I-131	Ci	*	*	*	9.71E-06	9.71E-06
F-133	Ci	*	*	6.52E-06		6.52E-06
I-135	Ci	*	*	*	*	*
TOTAL	Ci	*	*	6.52E-06	9.71E-06	1.62E-05
PARTICULATES						
Fe-55	Ci	4.94E-05	+	*	+	4.94E-05
Sr-89	Ci	*	*	*	*	*
Sr-90	Ci	*	*	*	*	*
Cr-51	Ci	*	*	*	1.34E-05	1.34E-05
Mn-54	Ci	4.16E-05	1.06E-04	2.51E-05	1.10E-04	2.83E-04
Co-57	Ci	*	*	*	*	*
Co-58	Ci	*	1.27E-06	*	3.25E-06	4.52E-06
Fe-59	Ci	*	1.68E-05	*	1.92E-05	3.60E-05
Co-60	Ci	5.89E-05	9.30E-05	3.51E-05	9.45E-05	2.82E-04
Zn-65	Ci	*	1.18E-06	*	2.33E-05	2.45E-05
Sr-85	Ci	*	*	*	*	*
Nb-95	Ci	*	*	*	*	*
Mo-99	Ci	*	+	*	2.80E-06	2.80E-06
Ru-103	Ci	*	+	*	*	*
Cd-109	Ci	*	*	*	*	*
Ag-110m	Ci	*	*	*	*	*
Sn-113	Ci	*	*	*	*	*
Sn-117m	Ci	*	+	*	*	*
Sb-124	Ci	*	*	*	*	*
Cs-137	Ci	*	*	*	*	*
Ba-133	Ci	*	*	*	*	*
Ba-140	Ci	*	*	*	*	*
Ce-141	Ci	*	*	*	*	*
Ce-144	Ci	*	*	*	*	*
Hg-203	Ci	*	*	*	*	*
TOTAL	Ci	1.50E-04	2.18E-04	6.01E-05	2.67E-04	6.95E-04

D2/3 REACTOR BUILDING VENT

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

BATCH MODE

NUCLIDES RELEASED	UNIT	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES						
Ar-41	Ci	- <u>-</u>		<u>├</u>	t	
Kr-85		h				
Kr-85m		<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Kr-87	Ci	<u> </u>	<u> </u>	<u> </u>		
Kr-88		<u>†</u>		<u>├</u>	f	
Xe-133		<u> </u>		h		
Ye-133m	Ci					
Ye-135	Ci	f	h	h		
Xe-135		<u>├</u>				
<u>Ae-155111</u>			<u> </u>		 	
<u>Ac-138</u>	<u> </u>	<u>}</u>				
TOTAL	<u> </u>	None	None	None	None	None
IODINES						
<u>I-131</u>	Ci					
<u>I-133</u>	Ci					
I-135	Ci					
TOTAL	Ci	None	None	None	None	None
PARTICULATES						
	Ci	· · · · · · · · · · · · · · · · · · ·				
Sr-89	Ci					
Sr-90	Ci			<u> </u>		
Cr-51	Ci					
Mn-54	Ci					
Co-57	Ci					
Co-58	Ci	i	j			
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci			<u> </u>		
Sr-85	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ru-103	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sb-124	Ci				· · · · · · · · · · · · · · · · · · ·	
Sb-125	Ci					
Cs-134	Ci		<u> </u>			
<u>Cs-136</u>	Ci	<u> </u>				
Cs-137	Ci					
Ba-133	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	<u> </u>					
TOTAL	Ci	None	None	None	None	None

D2/3 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES						
	Ci	4.78E+00	3.78E+00	3.84E+00	1.51E+00	1.39E+01
Kr-85	Ci	+	*	*	*	*
Kr-85m	Ci	9.01E-01	7.04E-01	6.91E-01	3.35E-01	2.63E+00
Kr-87	Ci	6.12E-01	5.88E-01	4.98E-01	3.02E-01	2.00E+00
Кг-88	Ci	1.03E+00	9.56E-01	9.09E-01	4.31E-01	3.33E+00
Xe-131m	Ci	*	*	*	*	*
Xe-133	Ci	1.07E+00	1.37E+00	7.33E-01	3.51E-01	3.52E+00
Xe-133m	Ci	*	*	*	*	*
Xe-135	Ci	2.48E+00	2.36E+00	1.31E+00	1.68E+00	7.83E+00
Xe-135m	Ci	2.07E+00	1.97E+00	1.55E+00	1.03E+00	6.61E+00
Xe-138	Ci	8.09E+00	7.66E+00	5.98E+00	3.92E+00	2.57E+01
TOTAL	Ci	2.10E+01	1.94E+01	1.55E+01	9.57E+00	6.55E+01
IODINES						
<u>I-131</u>	Ci	1.27E-04	2.06E-04	1.76E-04	1.57E-04	6.65E-04
I-133	Ci	3.75E-04	6.71E-04	6.38E-04	4.15E-04	2.10E-03
I-135	Ci	1.26E-05	*	1.09E-04	*	1.21E-04
TOTAL	Ci	5.14E-04	8.77E-04	9.23E-04	5.72E-04	2.89E-03
PARTICULATES						
Fe-55	Ci	*	+	*	*	*
Sr-89	Ci	5.81E-05	8.62E-05	9.06E-05	5.14E-05	2.86E-04
Sr-90	Ci	*	*	*	*	*
Cr-51	Ci	*	*	*	*	*
Mn-54	Ci	1.46E-04	4.65E-05	5.54E-05	6.34E-05	3.11E-04
Co-57	Ci	*	*	*	*	*
Co-58	Ci	5.48E-06	+	*	*	5.48E-06
Fe-59	Ci	4.32E-06	*	+	1.14E-05	1.57E-05
Co-60	Ci	1.05E-04	4.02E-05	7.20E-05	7.08E-05	2.88E-04
Zn-65	Ci	•	*	•	*	*
Sr-85	Ci	•	*	*	*	*
Y-88	Ci	*	*	*	*	*
Zr-95	<u>Ci</u>	•	*	*	*	•
<u>Mo-99</u>	Ci	*	*	*	*	*
Ru-103	<u> </u>	*	*	*	*	•
Cd-109	Ci	*	*	*	*	*
Ag-110m	Ci	*	*	L*	2.94E-06	2.94E-06
<u>Sn-113</u>	Ci	+	*	*	*	*
<u>Sn-117m</u>	Ci	+	*	*	*	*
<u>Cs-136</u>	Ci	*	*	*	*	*
Cs-137	Ci	1.88E-06	*	*	*	1.88E-06
<u> </u>	Ci	1.31E-04	1.37E-04	1.03E-04	1.36E-04	5.07E-04
Hg-203	Ci	*	*	*	*	*
Ce-141	Ci	*	*	*	4.91E-06	4.91E-06
Ce-144	Ci	*	*	*	*	*
TOTAL	Ci	4.52E-04	3.10E-04	3.21E-04	3.41E-04	1.42E-03

D2/3 MAIN CHIMNEY

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

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GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

BATCH MODE

NUCLIDES RELEASED	UNIT	I st QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES						
Ar-41	Ci		[
Кг-85	Ci	[
Kr-85m	Ci					
Kr-87	Ci					
Kr-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
TOTAL	Ci	None	None	None	None	None
IODINES						
<u>I-131</u>	Ci					
I-133	Ci					
1-135	Ci					
TOTAL	Ci	None	None	None	None	None
PARTICULATES						
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
Cr-51	Ci					
Mn-54	_Ci					
Co-57	Ci					
Co-58	Ci					
Fe-59	Ci					
<u>Co-60</u>	Ci					
Zn-65	Ci					
Sr-85	Ci					
Zr-95	<u> </u>					
<u>Mo-99</u>	Ci					
Ru-103	<u> </u>					
Ag-110m	Ci					
<u>Sn-113</u>	Ci					
<u>\$b-124</u>	Ci					
Sb-125	Ci					
<u> </u>	Ci					
Cs-136	Ci					
Cs-137	<u> </u>		<u> </u>			
Ba- <u>133</u>	Ci					
Ba-140	_Ci					
Ce-141	Ci					
Ce-144	_Ci				·····	
TOTAL	Ci	None	None	None	None	None

CHEMICAL CLEANING BUILDING

GASEOUS EFFLUENTS

-

DOCKET NUMBERS: 50-010/50-237/50-249

_____XX_____

GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

-

CONTINUOUS MODE

NUCLIDES RELEASED	UNIT	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES						
Ar-41	Ci	*	*	*	*	*
Kr-85	Ci	*	*	*	*	*
Kr-85m	Ci	*	*	*	*	*
Kr-87	Ci	*	*	*	*	*
Kr-88	Ci	*	*	*	*	*
Xe-133	Ci	*	*	*	*	+
Xe-133m	Ci	*	*	*	*	*
Xe-135	Ci	*	*	*	*	*
Xe-135m	Ci	*	*	*	*	*
Xe-138	Ci	*	*	*		*
TOTAL	Ci	*	*	*	*	*
IODINES						
I-131	Ci	*	*	*	*	*
J-133	Ci	*	*	*	*	•
I-135	Ci	*	*	*	*	*
TOTAL	Ci	*	*	*	*	*
PARTICULATES						
Fe-55	Ci	*	*	*	*	*
Sr-89	Ci	*	*	*	*	*
Sr-90	Ci	*	*	*	*	*
Cr-51	Ci _	+	*	*	*	+
Mn-54	Ci	2.60E-06	4.32E-07	1.26E-06	2.73E-07	4.56E-06
Co-57	Ci	*	*	*	*	*
Co-58	Ci	*	*	*	*	*
Fe-59	Ci	*	*	*	*	*
Co-60	Ci_	3.40E-07	*	8,29E-07_	1.28E-06	2.45E-06
Zn-65	Ci	*	*	*	*	*
Sr-85	Ci_	+	*	+	+	*
Zr-95	Ci	+	*	+	*	*
Mo-99	Ci	+	*	*	*	*
Ru-103	Ci	+	*	*	*	*
Ag-110m	Ci	*	*	*	*	*
Sn-113	Ci	*	*	*	+	*
Sb-124	Ci	*	*	*	*	*
Sb-125	Ci	*	*	*	*	*
Cs-134	Ci	*	*	*	*	*
Cs-136	Ci	*	*	*	*	*
Cs-137	Ci	*	*	*	*	+
Ba-133	Ci	*	*	+	*	*
Ba-140	Ci	*	*	*	*	*
Ce-141	Ci	*	*	*	*	*
Ce-144	Ci	*	*	*	*	*
TOTAL	Ci	2.94E-06	4.32E-07	2.09E-06	1.55E-06	7.01E-06

CHEMICAL CLEANING BUILDING

GASEOUS EFFLUENTS

DOCKET NUMBERS: 50-010/50-237/50-249

_____XX _____

GROUND LEVEL RELEASES SEMI-ELEVATED RELEASES ELEVATED RELEASES

BATCH MODE

NUCLIDES RELEASED	UNIT	I st QTR	2 nd QTR	3 rd QTR	4 th QTR	TOTAL
FISSION GASES						
Ar-41	Ci					
Kr-85	Ci					
Kr-85m	Ci					
Kr-87	Ci					
Кг-88	Ci					
Xe-133	Ci					
Xe-133m	Ci					
Xe-135	Ci					
Xe-135m	Ci					
Xe-138	Ci					
TOTAL	Ci	None	None	None	None	None
IODINES						
<u>I-131</u>	Ci					
I-133	Ci					
I-135	Ci					
TOTAL	Ci	None	None	None	None	None
PARTICULATES		÷				
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-57	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
Sr-85	Ci					
Zr-95	Ci					
Mo-99	Ci					
Ru-103	Ci					
Ag-110m	Ci					
Sn-113	Ci					
Sb-124	Ci					
Sb-125	Ci					
Cs-134	Ci					
Cs-136	Ci					
Cs-137	Ci					
Ba-133	Ci					
Ba-140	Ci					
Ce-141	Ci					
Ce-144	Ci					
TOTAL	Ci	None	None	None	None	None

DOCKET NUMBERS: 50-010/50-237/50-249

TABLE OF LOWER LIMITS OF DETECTABILITY FOR LIQUID EFFLUENTS

1.	FISSION/ACTIVATION GASES	μCi/ml
	Kr-87	1.00E-05
	Kr-88	1.00E-05
	Xe-133	1.00E-05
	Xe-133m	1.00E-05
	Xe-135	1.00E-05
	Xe-138	1.00E-05
2.	IODINES	μCi/ml
	I-131	1.00E-06
3.	PARTICULATES	μCi/ml
	Fe-55	1.00E-06
	Sr-89	5.00E-08
	Sr-90	5.00E-08
	Mn-54	5.00E-07
	Co-58	5.00E-07
	Fe-59	5.00E-07
	Co-60	5.00E-07
	Zn-65	5.00E-07
	Mo-99	5.00E-07
	Cs-134	5.00E-07
	Cs-137	5.00E-07
	Ce-141	5.00E-07
	Ce-144	5.00E-06
4.	OTHER	μCi/ml
	H-3	1.00E-05
	Gross Alpha	1.00E-07

The above values are the ODCM-required LLDs. The actual analyses always met the required LLDs.

DOCKET NUMBERS: 50-010/50-237/50-249

SUMMATION OF ALL LIQUID RELEASES

		Units	l st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Est. Total Error. %
_ A	FISSION & ACTIVATION PRODUCTS						
	1. Total Release (not including H-3, gases, alpha)	Ci	5.80E-04	<lld< td=""><td>1.35E-06</td><td>5.41E-03</td><td>17.4%</td></lld<>	1.35E-06	5.41E-03	17.4%
	2. Average Diluted Conc. During Period	<u>uCi/ml</u>	4.55E-09	<lld_< td=""><td>7.75E-10</td><td>3.38E-08</td><td></td></lld_<>	7.75E-10	3.38E-08	
	3. Percent of Technical Specification Limit	%	*	*	*	*	
<u>_B.</u>	TRITIUM						
·	1. Total Release	<u>Ci</u>	4.67E+00		<lld< td=""><td>7.01E+00</td><td><u>1.75%</u></td></lld<>	7.01E+00	<u>1.75%</u>
	2. Average Diluted Conc. During Release	$\mu Ci/ml$	_ <u>3.67E-05</u>	LLD	LLD	4.38E-05	
	3. Percent of Technical Specification Limit	%	*	*	*	*	J
<u> </u>	DISSOLVED AND ENTRAINED GASES	Ci		d I D			20.3%
	2 Average Diluted Conc. During Period	uCi/ml					<u> </u>
	3. Percent of Technical Specification Limit	<u>%</u>	*	*	*	*	
D.	GROSS ALPHA ACTIVITY	<u> </u>	<u> </u>	<u> </u>		<u> </u>	
	1. Total Release	Ci_	<lld< td=""><td><lld< td=""><td><lld< td=""><td><lld< td=""><td>20.1%</td></lld<></td></lld<></td></lld<></td></lld<>	<lld< td=""><td><lld< td=""><td><lld< td=""><td>20.1%</td></lld<></td></lld<></td></lld<>	<lld< td=""><td><lld< td=""><td>20.1%</td></lld<></td></lld<>	<lld< td=""><td>20.1%</td></lld<>	20.1%
	VOLUME OF WASTE RELEASED						
<u> </u>	(prior to dilution)	Liters	1.03E+06	2.63E+05	2.14E+05	1.16E+06	1.00%

F .	VOLUME OF DILUTION WATER USED	T itom	1 265,09	1.995.06	1.520.06	1.500.09	5.000
	DURING PERIOD	Liters	1.200+08	1.886+00	1.536+00	1.596+08	5.00%

*The information is contained in the Radiological Impact on Man section of the report.

RADWASTE LIQUID EFFLUENTS

DOCKET NUMBERS: 50-010/50-237/50-249

- 1. Number of Batch Releases:
- 2. Total Time for Batch Releases: 1.77E+03 minutes
- 3. Maximum Time Period for a Batch Release: 3.39E+02 minutes
- 4. Average Time Period for a Batch Release: 2.96E+02 minutes
- 5. Minimum Time Period for a Batch Release: 1.56E+02 minutes
- 6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream: 1.59E+05 lpm

6

	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci	*			*	*
Sr-89	Ci	*			*	*
Sr-90	Ci	*			*	*
I-131	Ci	*			*	*
I-132	Ci	*			*	*
I-133	Ci	*			*	*
I-134	Ci	*			*	*
I-135	Ci	*			*	*
Cr-51	Ci	*			3.44E-04	3.44E-04
Mn-54	Ci	1.85E-04			2.09E-03	2.27E-03
Co-58	Ci	*			7.41E-05	7.41E-05
Fe-59	Ci	*			5.91E-04	5.91E-04
Co-60	Ci	3.55E-04			1.64E-03	1.99E-03
Zn-65	Ci	*			3.64E-04	3.64E-04
As-76	Ci	*			*	*
Zr-95	Ci	*			*	*
Sr-91	Ci	*			*	*
Mo-99	Ci	*			*	*
Tc-99m	Ci	*			*	*
Ru-103	Ci	*			*	*
Ag-110m	Ci	8.36E-06			2.80E-04	2.89E-04
Sb-124	Ci	*			3.30E-05	3.30E-05
Cs-134	Ci	*			*	*
Cs-136	Ci	*			*	*
Cs-137	Ci	2.70E-05			*	2.70E-05
Ba-139	Ci	*			*	*
Ba-140	Ci	*			*	*
La-140	Ci	*			*	*
Ce-141	Ci	*			*	*
(above)		<u> </u>		<u></u>	<u> </u>	<u> </u>
Total	Ci	5.75E-04	None	None	5.41E-03	5.99E-03
H-3	Ci	4.67E+00_			7.01E+00	1.17E+01
Kr <u>-87</u>	Ci	*			*	*
Кг-88	Ci	*			*	*
Xe-133	Ci	*			*	*
Xe-133m	Ci	*			*	*
Xe-135	Ci	*			*	*
Xe-138	Ci	*			*	*

BATCH MODE

RADWASTE LIQUID EFFLUENTS

DOCKET NUMBERS: 50-010/50-237/50-249

	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	Ci					
I-135	Ci					
Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
Co-60	Ci					
Zn-65	Ci					
As-76	Ci					
Zr-95	Ci					
Sr-91	Ci					
Mo-99	Ci					
Tc-99m	Ci					
Ru-103	Ci					
Ag-110m	Ci					
Sb-124	Ci					
Cs-134	Ci					
Cs-136	Ci					
Cs-137	Ci					
Cs-138	Ci					
Ba-140	Ci					
La-140	Ci					
Ce-141	Ci					
(above)		None	None	None	None	None
Total		NUIC				
<u>H-3</u>	<u> </u>					
<u>Kr-87</u>	<u> </u>					
<u>Kr-88</u>	<u> </u>					
<u>Xe-133</u>	Ci					
<u>Xe-133m</u>	Ci					
Xe-135	Ci					
Xe-138	Ci					

CONTINUOUS MODE

LPCI SYSTEM EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

- 1. Number of Batch Releases:
- 64 2. Total Time for Batch Releases: 7.94E+01 minutes
- 3. Maximum Time Period for a Batch Release: 1.24E+00 minutes
- 4. Average Time Period for a Batch Release: 1.24E+00 minutes
- 1.24E+00 minutes 5. Minimum Time Period for a Batch Release:
- 6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream: 9.46E+04 lpm

	Unit	<u>1st Quarter</u>	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci	*	*	*	*	*
Sr-89	Ci	*	*	*	*	*
Sr-90	Ci	*	*	*	*	*
I-131	Ci	*	*	*	*	*
I-132	Ci	*	*	*	*	*
I-133	Ci	*	*	*	*	*
I-134	Ci	*	*	*	*	*
I-135	Ci	*	*	*	*	*
Cr-51	Ci	*	*	*	*	*
Mn-54	Ci	*	*	8.14E-07	*	8.14E-07
Co-58	Ci	*	*	*	*	*
Fe-59	_Ci	*	*	*	*	*
Co-60	Ci	*	*	5.33E-07	*	5.33E-07
Zn-65	Ci	*	*	*	*	*
As-76	Ci	*	*	*	*	*
Zr-95	Ci	*	*	*	*	*
Sr-91	Ci	*	*	*	*	*
Mo-99	Ci	*	*	*	*	*
Tc-99m	Ci	*	*	*	*	*
Ru-103	Ci	*	*	*	*	*
Ag-110m	Ci	*	*	*	*	*
Sb-124	Ci	*	*	*	*	*
Cs-134	Ci	*	*	*	*	*
<u>Cs-136</u>	Ci	*	*	*	*	*
<u>Cs-137</u>	Ci	4,74E-06	*	*	*	4.74E-06
Ba-139	Ci	*	*	*	*	*
Ba-140	Ci	*	*	*	*	*
La-140	Ci	*	*	*	*	*
Ce-141	Ci	*	*	*	*	*
<u>Np-239</u>	Ci	*	*	*	*	*
(above)	C:	4 74E 06	*	1 250 06	*	6 00E 06
Total		4./4E-00		1.55E-00		0.09E-00
<u>H-3</u>	Ci	*	*	*	*	*
<u>Kr-87</u>	<u> </u>	*	*	*	*	*
Kr-88	Ci	*	*	*	*	*
Xe-133	Ci	*	*	*	*	*
Xe-135	Ci	*	*	*	*	*
Xe-138	Ci	*	*	*	*	*

BATCH MODE

LPCI SYSTEM EFFLUENTS

DOCKET NUMBERS: 50-237/50-249

	Unit	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
Fe-55	Ci					
Sr-89	Ci					
Sr-90	Ci					
I-131	Ci					
I-132	Ci					
I-133	Ci					
I-134	Ci					
I-135	Ci					
_Cr-51	Ci					
Mn-54	Ci					
Co-58	Ci					
Fe-59	Ci					
_Co-60	Ci					
_Zn-65	Ci					
_As-76	Ci					
_Zr-95	Ci					
Sr-91	Ci					
Mo-99	Ci					
Tc-99m	Ci					
Ru-103	Ci					
Ag-110m	Ci					
Sb-124	Ci					
Cs-134	Ci					
Cs-136	Ci					-
<u>Cs-137</u>	Ci					
Cs-138	Ci					
Ba-140	Ci					
La-140	Ci					
Ce-141	Ci					
<u>Np-239</u>	Ci	·				
(above)	Ci	Nono	None	None	None	None
Total		None	None		None	None
<u>H-3</u>	Ci			ļ		
<u>Kr-87</u>	Ci		·····			
<u>Kr-88</u>	Ci					
Xe-133	<u> </u>			·		
Xe-135	Ci					
Xe-138	Ci					

CONTINUOUS MODE

DOCKET NUMBERS: 50-010/50-237/50-249

UNITS 1, 2 & 3 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

1.	Тур	be of Waste	Units	12-month period	Est. Total Error, %
	a.	Spent resins, filter sludges / filters, evaporator	³	2.01E+02	250%
		bottoms, etc.	Ci	1.33E+03	23%
	b.	Dry compressible waste, contaminated equipment, etc.	<u>m³</u>	1.64E+03	250%
				3.01E+00	23%
	c.	Irradiated components, control rods, etc.	³	7.37E+00	05.01
L		· · · · · · · · · · · · · · · · · · ·		1.43E+01	25%
	d.	Other (describe) - Contaminated Oil, Contaminated	³	1.58E+03	250
		Soil, Waste Metals, Combined Packages	Ci	2.09E+01	25%

- 2. Estimate of Major Nuclide Composition (by type of waste)
 - a. Spent resins, filters / filter sludges, evaporator bottoms, etc.

	Percent %	<u>Curies</u>
Fe-55	43.0	5.71E+02
Co-60	28.4	3.76E+02
Zn-65	9.27	1.23E+02
Mn-54	8.09	1.07E+02
Cs-137	7.91	1.05E+02

b. Dry compressible waste, contaminated equipment, etc.

	Percent %	<u>Curies</u>
Co-60	47.2	1.46E+00
Mn-54	25.7	7.96E-01
Fe-55	14.0	4.35E-01
Cs-137	3.94	1.22E-01
Ni-63	3.27	1.01E-01
Zn-65	2.06	6.40E-02
Fe-59	1.64	5.08E-02

c. Irradiated components, control rods, etc.

	Percent %	Curies
Fe-55	54.2	7.74E+00
Co-60	37.4	5.33E+00
Ni-63	5.71	8.14E-01
Mn-54	2.48	3.53E-01

DOCKET NUMBERS: 50-010/50-237/50-249

UNIT 1, 2 & 3 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS (Cont.)

- 2. Estimate of Major Nuclide Composition (by type of waste) Continued
 - d. Other Contaminated Oil, Contaminated Soil, Waste Metals, Combined Packages

	Percent %	Curies		
Co-60	29.5	6.15E+00		
Ni-63	19.1	3.99E+00		
Mn-54	18.8	3.93E+00		
Fe-55	15.1	3.16E+00		
Fe-59	5.77	1.20E+00		
Cr-51	4.33	9.04E-01		
Cs-137	2.02	4.22E-01		
Co-58	1.23	2.56E-01		
Sr-90	1.15	2.41E-01		

3. Solid Waste Description

Number of Shipments	Mode of Transportation	Destination
117	Motor Freight (exclusive use only)	GTS Duratek, Kingston, TN
29	Motor Freight (exclusive use only)	GTS Duratek, Oak Ridge, TN
17	Motor Freight (exclusive use only)	Alaron, Wampum, PA
13	Motor Freight (exclusive use only)	Envirocare, Clive UT
8	Motor Freight (exclusive use only)	Studsvik Processing Facility, Erwin, TN
4	Motor Freight (exclusive use only)	CNS, Barnwell, SC

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None		

C. CHANGES TO THE PROCESS CONTROL PROGRAM (PCP)

The station Process Control Program was not changed during 2005.

DOCKET NUMBER: 50-010/50-237/50-249

ABNORMAL RELEASES*

A. LIQUID

- 1. Number of releases: <u>3</u>
- 2. Total activity released: _____1.30E-01 Ci_____

B. GASEOUS

1.	Number of releases:	0
2	Total activity released:	0

- A.1 On March 10, 2005 the Unit 3 Service Water Radiation Monitor was out of service and compensatory samples were being drawn per site requirements. The sample collected at 0001 on March 10, 2005 contained detectable amounts of Mn-54, Co-58, and Co-60. The previous sample drawn at 1600 on March 9, 2005 did not contain detectable activity, and the following sample drawn at 0205 on March 10, 2005 did not contain detectable activity. The source of the activity was investigated but could not be determined. For conservatism, it is assumed that the measured activity was present for the entire time period between the two samples that did not contain detectable activity, or 605 minutes. Two Service Water pumps were running during this time with an estimated flow rate of 30,000 gallons per minute. The release volume is calculated from this flow rate times the estimated release period, or 605 minutes, for a total estimated release volume of 6.87E+10 ml. This estimated volume times the measured activity results in an estimated release of 4.02E-02 Ci of Mn-54, 3.11E-03 Ci of Co-58, and 4.11E-02 Ci of Co-60, for a total estimated release of 8.44E-02 Ci of activity from 1600 on March 9, 2005 to 0205 on March 10, 2005.
- A.2 On March 11, 2005 the Unit 2 Service Water Radiation Monitor was out of service and compensatory samples were being drawn per site requirements. The sample collected at 0820 on March 11, 2005 contained detectable amounts of Mn-54, Co-58, Fe-59, Co-60, and Sb-124. The in-line monitor was removed from service at 0715 on March 11, 2005 due to low flow conditions, and had not indicated any activity above background levels. The sample drawn at 1035 on March 11, 2005 did not contain detectable activity. The source of the activity was investigated but could not be determined. For conservatism, it is assumed that the measured activity was present for the entire period between the time the monitor was removed from service and a sample that did not contain detectable activity, or 200 minutes. Two Service Water pumps were running during this time with an estimated flow rate of 30,000 gallons per minute. The release volume is calculated from this flow rate times the estimated release period, or 200 minutes, for a total estimated release volume of 2.27E+10 ml. This estimated volume times the measured activity results in an estimated release of 1.14E-02 Ci of Mn-54, 1.04E-03 Ci of Co-58, 4.54E-03 Ci of Fe-59, 6.49E-03 Ci of Co-60, and 1.38E-03 Ci of Sb-124, for a total estimated release of 2.48E-02 Ci of activity from 0715 to 1035 on March 11, 2005.
- A.3 On March 12, 2005 the Unit 2 Service Water Radiation Monitor was out of service and compensatory samples were being drawn per site requirements. The sample collected at 0802 on March 12, 2005 contained detectable amounts of Mn-54 and Co-60. The previous sample drawn at 0003 on March 12, 2005 did not contain detectable activity, and the following sample drawn at 1020 on March 12, 2005 did not contain detectable activity. The source of the activity was investigated but could not be determined. For conservatism, it is assumed that the measured activity was present for the entire time period between the two samples that did not contain detectable activity, or 617 minutes. Two Service Water pumps were running during this time with an estimated flow rate of 30,000 gallons per minute. The release volume is calculated from this flow rate times the estimated release period, or 617 minutes, for a total estimated release volume of 7.01E+10 ml. This estimated volume times the measured activity results in an estimated release of 1.37E-02 Ci of Mn-54 and 7.15E-03 Ci of Co-60, for a total estimated release of 2.08E-02 Ci of activity from 0003 to 1020 on March 12, 2005.
 - *These releases are included in the Effluents Summation of all Releases Tables and in the Radiological Impact on Man.

DOCKET NUMBER: 50-010/50-237/50-249

UNMONITORED RELEASES*

A. LIQUID

- 1. Number of Releases: _____1_____
- 2. Total Activity Releases: <u>2.05E+00 Ci</u>

B. GASEOUS

- 1.
 Number of Releases:
 4______
- 2. Total Activity Releases: _____1.31E-04 Ci
- A.1 Water in on-site storm sewers is routinely sampled and analyzed for tritium content. The highest storm drain concentrations measured during each calendar quarter of 2005 was used to calculate the released activity for each quarter. The total activity released is based on an estimated typical discharge flow of 10 gallons per minute. An estimated 2.05E+00 Ci of tritium was released to the environment during 2005.
- B.1 The Unit 1 Main Turbine Floor (MTF) is used as an area to work on contaminated equipment. The ventilation system is no longer operational and the floor is at ambient pressure with the outside environment. With radiological work activities being performed on the MTF, the potential exists for airborne activity to be released to the environment through various potential release points. The estimated release through these points is 3.60E-05 Ci of Cs-137 during 2005.
- B.2 The Chemistry Laboratory Ventilation system exhausts directly into the environment and is not monitored. The estimated activity released to the environment in 2005 is 8.30E-05 Ci of noble gases and 8.02E-06 Ci of iodines and particulates.
- B.3 The Unit 2/3 Heating Steam system has low-level contamination present. During operation of the system, some steam is vented directly into the environment. It is estimated that 7.48E-07 Ci of Mn-54 and 1.27E-06 Ci of Co-60 were released for a total estimated activity of 2.02E-06 Ci released to the environment from this system during 2005.
- B.4 Past radiological surveys have identified low-level contamination in the East Turbine Building Ventilation ductwork. This system vents directly to the environment and is not monitored. An estimated total activity of 2.14E-06 Ci of Cs-137 was released to the environment from this system during 2005.

*These releases are included in the Effluents Summation of all Releases Tables and in the Radiological Impact on Man.

DOCKET NUMBER: 50-010

RADIOLOGICAL IMPACT ON MAN*

UNIT 1

1. Airborne Releases

		Maximum I					
	Quarterly Obj.	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	Yearly Obj.	Annual Dose
Gamma Air (mrad)	5.0 mrad	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	10.0 mrad	0.00E+00 (e)
Beta Air (mrad)	10.0 mrad	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	20.0 mrad	0.00E+00 (e)
Total Body (mrem)	2.5 mrem	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	5.0 mrem	0.00E+00 (e)
Skin (mrem)	7.5 mrem	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	0.00E+00 (e)	15.0 mrem	0.00E+00 (e)
Organ (mrem)	7.5 mrem	3.77E-06 (t)	1.83E-06 (c)	9.08E-06 (c)	7.90E-04 (i,c)	15.0 mrem	8.00E-04 (c)
Critical Organ		Lung	Liver	Liver	Liver (i) Bone (c)		Liver

2. Liquid Releases

		Maximum]				
	Quarterly Obj.	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	Yearly Obj.	. Annual Dose
Total Body (mrem)	1.5 mrem	None	None	None	None	3.0 mrem	None
Organ (mrem)	5.0 mrem	None	None	None	None	10.0 mrem	None
Critical Organ		None	None	None	None		None

* The doses reported include abnormal and unmonitored releases. These doses are the highest among the four analyzed receptors as described in parentheses [(i)=infant, (c)=child, (t)=teenager, (a)=adult, (e)=every receptor has the same value].

DOCKET NUMBER: 50-237

RADIOLOGICAL IMPACT ON MAN*

UNIT 2

1. Airborne Releases

		Maximum I					
	Quarterly Obj.	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	Yearly Obj.	Annual Dose
Gamma Air (mrad)	5.0 mrad	1.67E-04 (e)	1.41E-04 (e)	1.10e-04 (e)	7.24E-05 (e)	10.0 mrad	4.91E-04 (e)
Beta Air (mrad)	10.0 mrad	1.01E-05 (e)	8.96E-06 (e)	6.74E-06 (e)	4.64E-06 (e)	20.0 mrad	3.05E-05 (e)
Total Body (mrem)	2.5 mrem	1.26E-04 (e)	1.06e-04 (e)	8.33E-05 (e)	5.47E-05 (e)	5.0 mrem	3.70E-04 (e)
Skin (mrem)	7.5 mrem	1.38E-04 (e)	1.17e-04 (e)	9.11E-05 (e)	5.99E-05 (e)	15.0 mrem	4.05E-04 (e)
Organ (mrem)	7.5 mrem	3.48E-04 (c)	2.23E-03 (c)	4.86E-03 (c)	2.50E-03 (c)	15.0 mrem	9.94E-03 (c)
Critical Organ		Lung	Thyroid	Thyroid	Thyroid		Thyroid

2. Liquid Releases

Liquid Releases							
		Maximum	Doses from Aqu	atic Effluents			
	Quarterly Obj.	l st QTR	2 nd QTR	3 rd QTR	4 th QTR	Yearly Obj.	Annual Dose
Total Body (mrem)	1.5 mrem	5.98E-05 (c)	0.00E+00 (e)	1.30E-09 (c)	3.04E-05 (c)	3.0 mrem	9.01E-05 (c)
Organ (mrem)	5.0 mrem	4.67E-04 (a)	0.00E+00 (e)	1.39E-08 (a)	4.63E-05 (a)	10.0 mrem	5.14E-04 (a)
Critical Organ		GI_LLI	None	GI_LLI	GI_LLI		GI_LLI

* The doses reported include abnormal and unmonitored releases. These doses are the highest among the four analyzed receptors as described in parentheses [(i)=infant, (c)=child, (t)=teenager, (a)=adult, (e)=every receptor has the same value].

DOCKET NUMBER: 50-249

RADIOLOGICAL IMPACT ON MAN*

UNIT 3

1. Airborne Releases

		Maximum I					
!	Quarterly Obj.	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	Yearly Obj.	Annual Dose
Gamma Air (mrad)	5.0 mrad	3.21E-04 (e)	2.96E-04 (e)	2.67E-04 (e)	1.37E-04 (e)	10.0 mrad	1.02E-03 (e)
Beta Air (mrad)	10.0 mrad	1.82E-05 (e)	1.68E-05 (e)	1.45E-05 (e)	8.24E-06 (e)	20.0 mrad	5.77E-05 (e)
Total Body (mrem)	2.5 mrem	2.42E-04 (e)	2.23E-04 (e)	2.01E-04 (e)	1.03E-04 (e)	5.0 mrem	7.70E-04 (e)
Skin (mrem)	7.5 mrem	2.64E-04 (e)	2.43E-04 (e)	2.19E-04 (e)	1.13E-04 (e)	15.0 mrem	8.38E-04 (e)
Organ (mrem)	7.5 mrem	2.86E-04 (c)	3.26E-03 (c)	3.53E-03 (c)	1.49E-03 (c)	15.0 mrem	8.56E-03 (c)
Critical Organ		Lung	Thyroid	Thyroid	Thyroid		Thyroid

2. Liquid Releases

		Maximum						
	Quarterly Obj.	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR	Yearly Obj.	Annual Dose	
Total Body (mrem)	1.5 mrem	9.66E-05 (c)	0.00E+00 (e)	0.00E+00 (e)	4.32E-05 (c)	3.0 mrem	1.40E-04 (c)	
Organ (mrem)	5.0 mrem	7.99E-04 (a)	0.00E+00 (e)	0.00E+00 (e)	5.61E-05 (a)	10.0 mrem	8.55E-04 (a)	
Critical Organ		GI_LLI	None	None	GI_LLI		GI_LLI	

* The doses reported include abnormal and unmonitored releases. These doses are the highest among the four analyzed receptors as described in parentheses [(i)=infant, (c)=child, (t)=teenager, (a)=adult, (e)=every receptor has the same value].

DOCKET NUMBER: 50-010/50-237/50-249

Summary of Offsite Dose Calculation Manual (ODCM) Changes by Dresden Station in 2005

The Dresden ODCM was not revised in 2005.

DOCKET NUMBER: 50-010/50-237/50-249

METEOROLOGICAL DATA

1. The following table represents the percentage of valid hours of recoverable meteorological data for 2005:

	Percentage of valid parameter hours in 2005								
Parameter	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Ouarter	Year				
35 ft. Wind Speed	96.7%	99.9%	99.8%	99.9%	99.1%				
150 ft. Wind Speed	99.7%	100.0%	100.0%	99.9%	99.9%				
300 ft. Wind Speed	98.1%	100.0%	99.9%	99.8%	99.4%				
35 ft. Wind Direction	98.5%	99.2%	99.7%	99.8%	99.3%				
150 ft. Wind Direction	99.8%	99.9%	99.9%	99.8%	99.9%				
300 ft. Wind Direction	97.9%	99.8%	99.9%	99.8%	99.4%				
35 ft. Temperature	99.9%	100.0%	100.0%	99.9%	99.9%				
150-35 ft. delta T	99.9%	100.0%	99.9%	99.9%	99.9%				
300-35 ft. delta T	99.9%	100.0%	100.0%	99.9%	99.9%				

- 2. Dresden station was able to achieve an average of 99.6% meteorological data recovery for the year. This exceeds the minimum criterion of 90% delineated in Regulatory Guide 1.23.
- 3. The remaining pages of this report contain the Dresden Station meteorological site quarterly joint-frequency wind rose tables for 2005.

Period of Record: January - March 2005 Stability Class - Extremely Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

	will speed (ill mpil)								
Wind Direction	1-3 	4-7	8-12	13-18	19-24	> 24	Total		
N	0	3	5	0	0	0	8		
NNE	0	5	2	0	0	0	7		
NE	0	5	8	0	0	0	13		
ENE	0	7	7	0	0	0	14		
E	0	0	6	2	0	0	8		
ESE	0	0	2	1	0	0	3		
SE	0	0	1	0	0	0	1		
SSE	0	0	0	1	0	0	1		
S	0	0	0	0	1	0	1		
SSW	0	0	0	1	0	0	1		
SW	0	0	0	0	0	0	0		
WSW	0	0	5	5	0	0	10		
W	0	2	5	5	0	0	12		
WNW	0	6	14	7	0	0	27		
NW	0	8	27	7	0	0	42		
NNW	0	3	23	1	0	0	27		
Variable	0	0	0	0	0	0	0		
Total	0	39	105	30	1	0	175		

Wind Speed (in mph)

Period of Record: January - March 2005 Stability Class - Moderately Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

		rv.,	ind speed	a (III ubi	,		
Wind Direction	1-3	4-7 	8-12	13-18	19-24	> 24	Total
N	0	3	1	0	0	0	4
NNE	0	3	0	0	0	0	3
NE	0	1	1	0	0	0	2
ENE	0	2	1	0	0	0	3
E	0	3	1	0	0	0	4
ESE	0	0	3	2	0	0	5
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	1	0	0	4	0	5
SSW	0	1	1	0	0	0	2
SW	0	0	1	0	0	0	1
WSW	0	1	3	0	0	0	4
W	0	0	3	2	0	0	5
WNW	0	2	1	0	0	0	3
NW	0	2	8	1	0	0	11
NNW	0	5	1	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	0	24	25	5	4	0	58

Wind Speed (in mph)

Period of Record: January - March 2005 Stability Class - Slightly Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

		Wind Speed (in mph)						
Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total	
N	0	0	2	1	0	0	3	
NNE	0	1	0	0	0	0	1	
NE	0	3	0	0	0	0	3	
ENE	1	3	1	0	0	0	5	
E	0	2	2	0	0	0	4	
ESE	0	1	5	0	0	0	6	
SE	0	0	1	0	0	0	1	
SSE	0	1	0	2	1	0	4	
S	0	0	1	1	1	0	3	
SSW	0	2	1	1	0	0	4	
SW	0	0	1	0	0	0	1	
WSW	0	4	1	1	0	0	6	
W	1	3	4	1	0	0	9	
WNW	0	2	2	2	0	0	6	
NW	0	5	4	4	0	0	13	
NNW	0	6	6	0	0	0	12	
Variable	0	0	0	0	0	0	0	
Total	2	33	31	13	2	0	81	

Period of Record: January - March 2005 Stability Class - Neutral - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

		wind Speed (in mpn)							
Wind Direction	1-3	4-7	8-12	13-18 	19-24	> 24	Total		
N	7	26	18	5	0	0	56		
NNE	4	49	9	0	0	0	62		
NE	3	36	46	15	0	0	100		
ENE	2	33	29	0	0	0	64		
Е	4	31	30	0	0	0	65		
ESE	3	14	46	23	0	0	86		
SE	2	2	8	8	0	0	20		
SSE	0	5	13	8	1	0	27		
S	0	20	30	11	9	2	72		
SSW	8	10	23	6	2	0	49		
SW	2	8	7	9	1	0	27		
WSW	2	13	8	6	2	0	31		
W	3	18	18	13	2	0	54		
WNW	6	19	26	11	0	0	62		
NW	1	57	62	14	0	0	134		
NNW	2	32	50	8	0	0	92		
Variable	0	0	0	0	0	0	0		
Total	49	373	423	137	17	2	1001		

Wind Speed (in mph)

Period of Record: January - March 2005 Stability Class - Slightly Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

		W	ind Spee	d (in mpl	h)						
Wind Direction	1-3	4-7 	8-12	13-18 	19-24	> 24	Total				
N	13	17	4	0	0	0	34				
NNE	7	18	0	0	0	0	25				
NE	8	15	4	0	0	0	27				
ENE	6	16	5	0	0	0	27				
E	8	23	3	0	0	0	34				
ESE	5	12	10	0	0	0	27				
SE	5	6	4	5	0	0	20				
SSE	4	26	19	12	0	0	61				
S	8	14	14	7	7	0	50				
SSW	5	11	7	8	2	1	34				
SW	3	18	7	9	1	0	38				
WSW	1	9	5	7	0	0	22				
W	6	14	6	2	0	0	28				
WNW	5	20	12	2	0	0	39				
NW	6	38	9	1	0	0	54				
NNW	12	38	18	4	0	0	72				
Variable	0	0	0	0	0	0	0				
Total	102	295	127	57	10	1	592				

Period of Record: January - March 2005 Stability Class - Moderately Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

		wind Speed (in mpn)							
Wind Direction	1-3	4-7	8-12	13-18 	19-24	> 24	Total		
N	0	0	0	0	0	0	0		
NNE	4	1	0	0	0	0	5		
NE	0	0	0	0	0	0	0		
ENE	2	0	0	0	0	0	2		
E	2	1	0	0	0	0	3		
ESE	1	8	0	0	0	0	9		
SE	2	4	0	0	0	0	6		
SSE	3	2	0	0	0	0	5		
S	3	7	1	0	0	0	11		
SSW	4	9	0	0	0	0	13		
SW	1	12	9	0	0	0	22		
WSW	7	8	1	0	0	0	16		
W	2	4	0	0	0	0	6		
WNW	5	2	0	0	0	0	7		
NW	4	0	0	0	0	0	4		
NNW	9	5	0	0	0	0	14		
Variable	0	0	0	0	0	0	0		
Total	49	63	11	0	0	0	123		

Wind Speed (in mph)

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: 0 Hours of missing stability measurements in all stability classes: 0

.

Period of Record: January - March 2005 Stability Class - Extremely Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	1	1	0	0	0	0	2
ESE	1	3	0	0	0	0	4
SE	2	0	0	0	0	0	2
SSE	2	0	0	0	0	0	2
S	0	0	0	0	0	0	0
SSW	2	0	0	0	0	0	2
SW	1	4	0	0	0	0	5
WSW	4	1	0	0	0	0	5
W	2	0	0	0	0	0	2
WNW	3	0	0	0	0	0	3
NW	2	0	0	0	0	0	2
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	22	9	0	0	0	0	31

Period of Record: January - March 2005 Stability Class - Extremely Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

		wind speed (in mpn)							
Wind Direction	1-3	4-7 	8-12	13-18	19-24	> 24	Total		
N	0	0	1	0	0	0	1		
NNE	0	0	0	1	0	0	1		
NE	0	0	2	0	0	0	2		
ENE	0	0	1	0	0	0	1		
E	0	0	0	0	0	0	0		
ESE	0	0	0	0	0	0	0		
SE	0	0	0	0	0	0	0		
SSE	0	0	0	0	0	1	1		
S	0	0	0	0	0	0	0		
SSW	0	0	0	0	0	0	0		
SW	0	0	0	0	0	0	0		
WSW	0	0	0	0	0	0	0		
W	0	0	0	2	0	0	2		
WNW	0	0	1	2	1	2	6		
NW	0	0	0	7	0	0	7		
NNW	0	0	0	5	0	0	5		
Variable	0	0	0	0	0	0	0		
Total	0	0	5	17	1	3	26		

Wind Speed (in mph)

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: 0 Hours of missing stability measurements in all stability classes: 2

.
Period of Record: January - March 2005 Stability Class - Moderately Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

		Wind Speed (in mph)										
Direction	1-3	4-7 	8-12	13-18 	19-24	> 24	Total					
N	0	0	0	1	0	0	1					
NNE	0	1	1	0	0	0	2					
NE	0	0	3	1	0	0	4					
ENE	0	1	1	1	0	0	3					
Е	0	0	0	2	1	0	3					
ESE	0	0	0	0	0	0	0					
SE	0	0	0	0	0	0	0					
SSE	0	0	0	0	1	0	1					
S	0	0	0	0	1	3	4					
SSW	0	0	0	1	0	0	1					
SW	0	0	0	0	0	0	0					
WSW	0	1	0	2	1	0	4					
W	0	0	2	1	0	0	3					
WNW	0	0	1	1	0	2	4					
NW	0	1	3	3	0	3	10					
NNW	0	0	2	5	1	0	8					
Variable	0	0	0	0	0	0	0					
Total	0	4	13	18	5	8	48					

Period of Record: January - March 2005 Stability Class - Slightly Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind Speed (in mph)

Wind				•	-•		
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	0	2	1	0	4
NNE	0	2	0	0	0	0	2
NE	0	3	1	2	0	0	6
ENE	0	4	3	1	0	0	8
Е	0	0	5	1	1	0	7
ESE	0	0	1	2	1	0	4
SE	0	0	1	0	0	0	1
SSE	0	1	0	0	1	0	2
S	0	0	0	0	0	1	1
SSW	0	0	1	0	0	0	1
SW	0	0	0	2	0	0	2
WSW	0	1	2	5	1	0	9
W	0	1	6	4	1	1	13
WNW	0	1	6	1	3	0	11
NW	0	0	12	8	1	3	24
NNW	0	1	3	4	1	0	9
Variable	0	0	0	0	0	0	0
Total	0	15	41	32	11	5	104

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: 0 Hours of missing stability measurements in all stability classes: 2

.

Period of Record: January - March 2005 Stability Class - Neutral - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

	with sheed (in mbit)									
Wind Direction	1-3	4-7	8-12	13-18	19-24 	> 24	Total			
N	2	9	19	17	13	5	65			
NNE	0	7	39	31	1	0	78			
NE	2	9	25	37	10	0	83			
ENE	2	17	28	20	0	0	67			
Е	1	13	33	29	2	0	78			
ESE	1	10	15	43	20	2	91			
SE	0	4	1	13	8	0	26			
SSE	0	1	11	10	5	6	33			
S	1	9	24	26	10	10	80			
SSW	0	11	18	19	6	3	57			
SW	2	6	7	8	6	4	33			
WSW	1	9	10	9	5	4	38			
W	0	10	18	22	14	11	75			
WNW	3	11	27	29	18	4	92			
NW	1	7	64	66	42	4	184			
NNW	0	11	41	51	18	4	125			
Variable	0	0	0	0	0	0	0			
Total	16	144	380	430	178	57	1205			

Wind Speed (in mph)

Period of Record: January - March 2005 Stability Class - Slightly Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

		W:	ind Speed	d (in mph	1)		
Wind Direction	1-3	4-7 	8-12	13-18 	19-24	> 24	Total
N	1	1	17	10	2	0	31
NNE	1	2	15	10	0	0	28
NE	0	8	15	6	0	0	29
ENE	3	20	9	2	0	0	34
Е	2	12	6	2	0	0	22
ESE	1	6	10	5	6	0	28
SE	0	3	14	4	5	0	26
SSE	3	5	11	16	17	3	55
S	2	6	9	21	10	14	62
SSW	1	4	2	9	10	6	32
SW	0	3	10	13	9	7	42
WSW	1	1	6	9	13	5	35
W	2	2	7	11	3	0	25
WNW	0	1	6	3	3	0	13
NW	0	3	18	26	0	0	47
NNW	0	3	13	17	5	5	43
Variable	0	0	0	0	0	0	0
Total	17	80	168	164	83	40	552

Wind Speed (in mph)

Period of Record: January - March 2005 Stability Class - Moderately Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind 1-3 8-12 13-18 19-24 > 24 Total Direction 4-7 ---------------------____ --------N NNE NE ENE E ESE SE SSE S SSW SW WSW W WNW NW NNW Variable

Wind Speed (in mph)

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: 1 Hours of missing stability measurements in all stability classes:

Total

36 52

Period of Record: January - March 2005 Stability Class - Extremely Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

		with speed (in which										
Wind Direction	1-3	4-7	8-12	13-18 	19-24	> 24	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	0	0	0	0	0	0	0					
E	0	0	0	0	0	0	0					
ESE	0	0	0	0	0	0	0					
SE	0	0	0	0	0	0	0					
SSE	0	0	0	0	0	0	0					
S	0	1	1	2	0	0	4					
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	1	1	0	0	2					
WNW	0	0	0	0	0	0	0					
NW	0	0	0	0	0	0	0					
NNW	0	0	0	0	0	0	0					
Variable	0	0	0	0	0	0	0					
Total	0	3	2	3	0	0	8					

Wind Speed (in mph)

Period of Record: April - June 2005 Stability Class - Extremely Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind			-	• -			
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	6	12	2	0	0	21
NNE	0	11	1	4	0	0	16
NE	0	28	11	5	0	0	44
ENE	0	18	10	0	0	0	28
E	0	24	12	4	0	0	40
ESE	1	2	2	2	0	0	7
SE	0	3	1	2	0	0	6
SSE	0	8	3	2	0	0	13
S	1	10	20	6	6	0	43
SSW	0	13	6	2	0	0	21
SW	0	11	5	2	2	0	20
WSW	0	9	33	11	0	0	53
W	0	11	14	14	0	0	39
WNW	2	3	24	5	1	0	35
NW	0	7	13	7	0	0	27
NNW	1	9	9	7	0	0	26
Variable	0	0	0	0	0	0	0
Total	6	173	176	75	9	0	439

Period of Record: April - June 2005 Stability Class - Moderately Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

	with sheed (in mbu)									
Wind Direction	1-3	4-7	8-12	13-18 	19-24	> 24	Total			
N	0	0	1	0	0	0	1			
NNE	0	0	1	1	0	0	2			
NE	1	7	0	0	0	0	8			
ENE	2	3	0	0	0	0	5			
Е	1	5	2	0	0	0	8			
ESE	1	2	0	1	0	0	4			
SE	0	0	2	1	0	0	3			
SSE	0	1	2	1	0	0	4			
S	1	4	2	1	0	0	8			
SSW	1	4	1	4	0	0	10			
SW	0	4	0	2	0	0	6			
WSW	0	2	5	1	0	0	8			
W	0	1	3	4	0	0	8			
WNW	0	1	5	0	0	0	6			
NW	0	0	0	0	0	0	0			
NNW	0	2	0	2	0	0	4			
Variable	0	0	0	0	0	0	0			
Total	7	36	24	18	0	0	85			

Wind Speed (in mph)

Period of Record: April - June 2005 Stability Class - Slightly Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph) Wind Direction 1-3 4-7 8-12 13-18 19-24 > 24 Total _____ ----_____ --------____ ____ ____ N NNE NE ENE Е ESE SE SSE S SSW SW WSW W WNW NW NNW

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: 0 Hours of missing stability measurements in all stability classes: 0

Variable

Total

Period of Record: April - June 2005 Stability Class - Neutral - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind				· · · · · · · · · · · · · · · · · · ·	-,		
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	4	5	2	0	0	14
NNE	1	9	15	7	0	0	32
NE	4	21	26	2	0	0	53
ENE	2	32	6	0	0	0	40
Е	5	22	26	10	0	0	63
ESE	3	14	9	11	0	0	37
SE	5	10	22	0	0	0	37
SSE	2	19	15	3	0	0	39
S	3	11	13	6	2	0	35
SSW	4	12	20	8	0	0	44
SW	3	10	13	2	0	0	28
WSW	1	9	12	7	0	0	29
Ŵ	3	7	27	6	0	0	43
WNW	0	7	27	8	0	0	42
NW	1	6	9	0	0	0	16
NNW	2	3	8	1	0	0	14
Variable	0	0	0	0	0	0	0
Total	42	196	253	73	2	0	566

Period of Record: April - June 2005 Stability Class - Slightly Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind	1 7	4 7	- 10	12 10	10.04		metel
Jirection	1-3 	4-/ 	8-12		19-24 	> 24	
N	9	4	4	0	0	0	17
NNE	14	15	10	0	0	0	39
NE	5	33	7	0	0	0	45
ENE	7	37	0	0	0	0	44
Е	9	42	9	5	0	0	65
ESE	1	38	16	12	0	0	67
SE	4	18	15	1	0	0	38
SSE	6	31	15	8	0	0	60
S	6	35	29	8	0	0	78
SSW	6	17	7	8	0	0	38
SW	6	17	7	2	0	0	32
WSW	2	7	15	1	0	0	25
W	4	18	21	0	0	0	43
WNW	5	25	10	2	0	0	42
NW	9	11	6	0	0	0	26
NNW	6	3	4	0	0	0	13
Variable	0	0	0	0	0	0	0
Total	99	351	175	47	0	0	672

Period of Record: April - June 2005 Stability Class - Moderately Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

	wind pheed (in whith									
Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total			
N	9	3	0	0	0	0	12			
NNE	4	5	0	0	0	0	9			
NE	3	1	0	0	0	0	4			
ENE	1	2	0	0	0	0	3			
E	4	12	1	0	0	0	17			
ESE	4	15	2	0	0	0	21			
SE	5	9	1	0	0	0	15			
SSE	5	6	0	0	0	0	11			
S	6	11	0	0	0	0	17			
SSW	4	10	2	0	0	0	16			
SW	8	16	0	0	0	0	24			
WSW	10	6	0	0	0	0	16			
W	8	8	0	0	0	0	16			
WNW	5	0	0	0	0	0	5			
NW	11	0	0	0	0	0	11			
NNW	11	0	0	0	0	0	11			
Variable	0	0	0	0	0	0	0			
Total	98	104	6	0	0	0	208			

Wind Speed (in mph)

Period of Record: April - June 2005 Stability Class - Extremely Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind			_				
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	0	0	0	0	0	2
NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	1	0	0	0	0	0	1
E	2	1	0	0	0	0	3
ESE	0	6	0	0	0	0	6
SE	3	0	1	0	0	0	4
SSE	1	0	0	0	0	0	1
S	6	1	0	0	0	0	7
SSW	8	5	0	0	0	0	13
SW	4	13	0	0	0	0	17
WSW	3	1	0	0	0	0	4
W	0	1	0	0	0	0	1
WNW	2	0	0	0	0	0	2
NW	6	0	0	0	0	0	6
NNW	3	0	0	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	42	28	1	0	0	0	71

Period of Record: April - June 2005 Stability Class - Extremely Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

	Wind Speed (in mph)									
Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total			
N	0	0	1	2	3	0	6			
NNE	0	0	1	5	4	1	11			
NE	0	2	6	2	3	0	13			
ENE	0	2	5	0	0	0	7			
E	0	0	4	3	1	0	8			
ESE	0	0	0	0	0	0	0			
SE	0	0	0	0	0	0	0			
SSE	0	1	0	0	0	0	1			
S	0	0	1	0	0	0	1			
SSW	0	1	0	2	0	0	3			
SW	0	0	0	2	0	0	2			
WSW	0	0	1	4	4	0	9			
W	0	0	, 0	2	0	2	4			
WNW	0	0	0	1	0	0	1			
NW	0	0	1	4	4	2	11			
NNW	0	0	2	0	1	0	3			
Variable	0	0	0	0	0	0	0			
Total	0	6	22	27	20	5	80			

Period of Record: April - June 2005 Stability Class - Moderately Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

	wind Speed (in mpn)									
Wind Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total			
N	0	0	0	1	0	0	1			
NNE	0	0	1	3	2	1	7			
NE	0	0	4	3	0	0	7			
ENE	0	5	5	0	0	0	10			
E	0	3	7	1	1	0	12			
ESE	0	1	0	0	1	0	2			
SE	0	0	0	3	0	0	3			
SSE	0	1	1	1	0	0	3			
S	0	1	6	3	2	0	12			
SSW	0	2	3	0	0	0	5			
SW	0	2	4	0	0	0	6			
WSW	0	5	0	9	1	1	16			
W	1	0	1	3	2	0	7			
WNW	0	0	2	7	3	1	13			
NW	0	0	1	3	1	0	5			
NNW	0	0	4	1	4	1	10			
Variable	0	0	0	0	0	0	0			
Total	1	20	39	38	17	4	11 9			

Wind Speed (in mph)

Period of Record: April - June 2005 Stability Class - Slightly Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

*** 1	and speed (in month									
Wind Direction	1-3	4 -7	8-12	13-18	19-24	> 24	Total			
N	0	0	0	3	0	0	3			
NNE	0	0	2	0	3	2	7			
NE	0	6	5	1	2	0	14			
ENE	0	6	7	0	0	0	13			
E	0	4	9	2	3	0	18			
ESE	1	2	3	2	0	0	8			
SE	0	2	2	2	0	0	6			
SSE	0	1	3	6	0	0	10			
S	0	3	6	4	2	2	17			
SSW	0	1	0	1	3	0	5			
SW	0	4	1	0	2	2	9			
WSW	0	2	4	6	1	0	13			
W	0	0	1	8	2	0	11			
WNW	0	1	1	10	2	1	15			
NW	0	1	2	4	3	0	10			
NNW	0	0	1	0	4	0	5			
Variable	0	0	0	0	0	0	0			
Total	1	33	47	49	27	7	164			

Wind Speed (in mph)

Period of Record: April - June 2005 Stability Class - Neutral - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind Speed (in mph)

Wind							
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	8	18	4	30
NNE	3	5	6	13	15	6	48
NE	1	6	22	22	15	0	66
ENE	3	27	27	8	0	0	65
Е	5	16	37	20	9	11	98
ESE	2	9	14	10	11	7	53
SE	5	11	26	7	0	0	49
SSE	1	12	17	16	4	0	50
S	0	10	23	19	7	4	63
SSW	2	12	15	21	10	2	62
SW	0	11	8	12	6	0	37
WSW	1	8	13	19	9	6	56
W	0	7	9	27	24	3	70
WNW	0	3	4	31	16	8	62
NW	1	1	5	18	2	1	28
NNW	0	0	1	3	17	1	22
Variable	0	0	0	0	0	0	0
Total	24	138	227	254	163	53	859

Period of Record: April - June 2005 Stability Class - Slightly Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

	wind speed (in mpn)								
Wind Direction	1-3	4-7	8-12	13-18	19-24 	> 24	Total		
N	2	4	2	2	0	0	10		
NNE	1	6	11	12	10	0	40		
NE	2	8	16	19	2	0	47		
ENE	4	11	23	4	0	0	42		
Е	2	4	17	20	2	1	46		
ESE	0	1	5	20	10	0	36		
SE	0	6	18	36	3	0	63		
SSE	0	3	19	15	6	2	45		
S	1	1	12	45	25	3	87		
SSW	1	7	8	31	9	4	60		
SW	0	7	7	19	8	1	42		
WSW	0	3	7	15	7	1	33		
W	1	6	8	25	6	0	46		
WNW	1	1	11	15	6	0	34		
NW	1	1	9	8	8	0	27		
NNW	0	5	5	2	1	0	13		
Variable	0	0	0	0	0	0	0		
Total	16	74	178	288	103	12	671		

Wind Speed (in mph)

Period of Record: April - June 2005 Stability Class - Moderately Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

1.12 ···		uning of a criticity									
Direction	1-3	4-7 	8-12	13-18	19-24	> 24	Total				
N	0	2	1	2	0	0	5				
NNE	2	2	1	6	1	0	12				
NE	0	4	5	5	1	0	15				
ENE	2	1	2	1	0	0	6				
Е	0	5	3	0	2	0	10				
ESE	0	0	3	7	4	0	14				
SE	1	2	4	19	2	0	28				
SSE	2	1	13	7	1	0	24				
S	1	2	6	3	0	0	12				
SSW	1	5	6	7	4	0	23				
SW	0	4	4	13	0	0	21				
WSW	1	3	8	13	0	0	25				
W	2	1	3	2	1	0	9				
WNW	1	1	5	11	2	0	20				
NW	2	3	8	0	1	0	14				
NNW	0	1	3	0	0	0	4				
Variable	0	0	0	0	0	0	0				
Total	15	37	75	96	19	0	242				

Wind Speed (in mph)

Period of Record: April - June 2005 Stability Class - Extremely Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Mi	Wind Speed (in mph)								
Direction	1-3	4-7 	8-12	13-18 	19-24 	> 24	Total		
N	0	0	0	0	0	0	0		
NNE	0	2	0	0	0	0	2		
NE	0	0	2	0	0	0	2		
ENE	0	1	0	0	0	0	1		
E	0	1	0	0	0	0	1		
ESE	0	0	0	0	0	0	0		
SE	0	0	0	1	2	0	3		
SSE	0	1	0	4	1	0	6		
S	1	1	1	0	0	0	3		
SSW	0	1	1	1	0	0	3		
SW	0	1	3	3	1	0	8		
WSW	0	2	5	4	0	0	11		
W	0	1	0	0	0	0	1		
WNW	0	0	0	0	0	0	0		
NW	0	0	0	0	0	0	0		
NNW	0	0	1	0	0	0	1		
Variable	0	0	0	0	0	0	0		
Total	1	11	13	13	4	0	42		

Period of Record: July - September 2005 Stability Class - Extremely Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind			· · · •	•	•		
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	15	0	0	0	0	16
NNE	1	12	5	0	0	0	18
NE	1	18	14	0	0	0	33
ENE	6	19	4	0	0	0	29
E	2	6	8	0	0	0	16
ESE	0	5	2	1	0	0	8
SE	0	7	4	0	0	0	11
SSE	0	7	5	0	0	0	12
S	1	6	9	1	0	0	17
SSW	0	11	21	7	0	0	39
SW	0	11	6	5	0	0	22
WSW	0	12	2	0	0	0	14
w	0	12	9	1	0	0	22
WNW	0	14	11	1	0	0	26
NW	1	21	5	0	0	0	27
NNW	2	24	1	0	0	0	27
Variable	0	0	0	0	0	0	0
Total	15	200	106	16	0	0	337

Period of Record: July - September 2005 Stability Class - Moderately Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

111 - A	Wind Speed (in mph)									
Direction	1-3	4-7 	8-12	13-18	19-24 	> 24	Total			
N	2	3	0	0	0	0	5			
NNE	0	1	1	0	0	0	2			
NE	1	0	2	0	0	0	3			
ENE	1	5	0	0	0	0	6			
E	1	5	2	0	0	0	8			
ESE	0	1	1	0	0	0	2			
SE	0	3	2	0	0	0	5			
SSE	0	3	0	0	0	0	3			
S	0	4	3	0	0	0	7			
SSW	0	0	7	1	0	0	8			
SW	0	6	2	1	0	0	9			
WSW	1	8	2	0	0	0	11			
W	0	4	1	0	0	0	5			
WNW	0	7	2	0	0	0	9			
NW	1	5	1	0	0	0	7			
NNW	2	3	1	0	0	0	6			
Variable	0	0	0	0	0	0	0			
Total	9	58	27	2	0	0	96			

Period of Record: July - September 2005 Stability Class - Slightly Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph) Wind Direction 1-3 4-7 8-12 13-18 19-24 > 24 Total _____ ----------------------------Ν NNE NE ENE Е ESE SE SSE S SSW SW WSW W WNW NW NNW Variable

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: Hours of missing stability measurements in all stability classes:

Total

Period of Record: July - September 2005 Stability Class - Neutral - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

24 T	otal
0	14
0	20
0	48
0	21
0	30
0	21
0	24
0	36
0	44
0	44
0	22
0	26
0	17
0	27
0	27
0	17
0	0
	0 0 0 0 0 0 0

Period of Record: July - September 2005 Stability Class - Slightly Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

	wind Speed (in mpn)								
Wind Direction	1-3	4-7 	8-12	13-18	19-24 	> 24	Total		
N	24	11	1	0	0	0	36		
NNE	25	36	0	0	0	0	61		
NE	15	34	6	0	0	0	55		
ENE	14	38	2	0	0	0	54		
E	9	53	4	0	0	0	66		
ESE	12	27	4	0	0	0	43		
SE	6	27	11	0	0	0	44		
SSE	14	36	20	0	0	0	70		
S	12	38	25	1	0	0	76		
SSW	9	20	18	2	0	0	49		
SW	9	9	6	1	0	0	25		
WSW	10	11	2	0	0	0	23		
W	17	16	4	0	0	0	37		
WNW	14	26	0	0	0	0	40		
NW	15	18	5	2	0	0	40		
NNW	25	15	1	0	0	0	41		
Variable	0	0	0	0	0	0	0		
Total	230	415	109	6	0	0	760		

Wind Speed (in mph)

Period of Record: July - September 2005 Stability Class - Moderately Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

tili a d	Wind Speed (in mph)									
Direction	1-3	4 -7	8-12	13-18 	19-24 	> 24	Total			
N	17	0	0	0	0	0	17			
NNE	13	0	0	0	0	0	13			
NE	3	1	0	0	0	0	4			
ENE	2	0	0	0	0	0	2			
Е	3	9	0	0	0	0	12			
ESE	11	12	0	0	0	0	23			
SE	8	13	3	0	0	0	24			
SSE	7	27	1	0	0	0	35			
S	18	16	1	0	0	0	35			
SSW	14	11	0	0	0	0	25			
SW	14	9	1	0	0	0	24			
WSW	11	4	0	0	0	0	15			
W	6	6	0	0	0	0	12			
WNW	13	4	0	0	0	0	17			
NW	28	0	0	0	0	0	28			
NNW	30	0	0	0	0	0	30			
Variable	0	0	0	0	0	0	0			
Total	198	112	6	0	0	0	316			

Period of Record: July - September 2005 Stability Class - Extremely Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind			•	•	-•		
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	0	0	0	0	1
NNE	4	0	0	0	0	0	4
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
Е	0	0	0	0	0	0	0
ESE	7	1	0	0	0	0	8
SE	1	4	0	0	0	0	5
SSE	2	2	0	0	0	0	4
S	7	4	0	0	0	0	11
SSW	8	2	0	0	0	0	10
SW	16	3	0	0	0	0	19
WSW	7	1	0	0	0	0	8
W	3	0	0	0	0	0	3
WNW	8	0	0	0	0	0	8
NW	19	2	0	0	0	0	21
NNW	9	0	0	0	0	0	9
Variable	0	0	0	0	0	0	0
Total	92	19	0	0	0	0	111

Period of Record: July - September 2005 Stability Class - Extremely Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind Speed (in mph) Wind Direction 1-3 4-7 19-24 8-12 13-18 > 24 Total ----------____ ____ ----____ _____ ----N NNE NE ENE Е ESE SE SSE S SSW SW WSW W WNW NW NNW Variable Total

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: 0 Hours of missing stability measurements in all stability classes: 1

-

Period of Record: July - September 2005 Stability Class - Moderately Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind Speed (in mph) Wind Direction 1-3 4-7 8-12 13-18 19-24 > 24 Total ----____ ----------------_ _ _ _ _ ----Ν NNE ΝE ENE Е ESE SE SSE S SSW SW WSW W WNW NW NNW Variable Total

Period of Record: July - September 2005 Stability Class - Slightly Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind Speed (in mph)

Wind				•			
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	4	0	0	0	6
NNE	0	1	3	0	1	0	5
NE	1	3	3	1	0	0	8
ENE	1	5	5	1	0	0	12
Е	0	4	6	1	0	0	11
ESE	0	5	2	0	1	0	8
SE	0	4	5	0	0	0	9
SSE	0	4	4	0	0	0	8
S	0	1	5	3	0	0	9
SSW	0	4	6	8	0	0	18
SW	0	0	2	2	2	0	6
WSW	0	6	2	1	1	0	10
W	0	6	3	2	0	0	11
WNW	0	8	7	5	0	0	20
NW	0	4	9	3	0	0	16
NNW	0	8	2	1	0	0	11
Variable	0	0	0	0	0	0	0
Total	2	65	68	28	5	0	168

Period of Record: July - September 2005 Stability Class - Neutral - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

1.17 d an <i>a</i> l		wind Speed (in mpn)								
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total			
N	2	6	8	9	2	0	27			
NNE	1	7	5	23	7	0	43			
NE	0	10	31	29	2	0	72			
ENE	0	23	32	2	0	0	57			
E	0	12	19	12	0	0	43			
ESE	7	15	9	2	0	0	33			
SE	2	13	7	5	0	0	27			
SSE	3	21	17	11	0	0	52			
S	3	10	21	25	0	0	59			
SSW	3	16	28	16	4	0	67			
SW	3	15	10	8	4	0	40			
WSW	6	16	6	4	1	0	33			
W	2	7	10	8	1	0	28			
WNW	1	9	16	10	1	0	37			
NW	3	18	14	10	2	3	50			
NNW	1	13	10	10	0	1	35			
Variable	0	0	0	0	0	0	0			
Total	37	211	243	184	24	4	703			

Wind Speed (in mph)

Period of Record: July - September 2005 Stability Class - Slightly Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

112 - J		W:	ind Spee	d (in mpl	n)							
Direction	1-3	4-7 	8-12	13-18	19-24	> 24	Total					
N	1	4	14	18	0	0	37					
NNE	0	6	18	34	1	0	59					
NE	0	5	21	10	0	0	36					
ENE	1	29	17	2	0	0	49					
Е	1	7	28	16	6	0	58					
ESE	0	7	19	16	2	0	44					
SE	0	8	21	23	0	0	52					
SSE	0	11	23	35	3	0	72					
S	1	10	29	37	17	0	94					
SSW	0	8	23	25	11	0	67					
SW	1	4	7	7	6	1	26					
WSW	0	4	9	9	1	0	23					
W	2	10	13	10	0	0	35					
WNW	0	7	9	14	0	0	30					
NW	0	5	11	11	0	0	27					
NNW	2	5	9	9	1	0	26					
Variable	0	0	0	0	0	0	0					
Total	9	130	271	276	48	1	735					

Period of Record: July - September 2005 Stability Class - Moderately Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

total an ell		wind Speed (in mpn)							
Direction	1-3	4 -7	8-12	13-18	19-24	> 24	Total		
N	1	4	9	2	1	0	17		
NNE	2	3	10	10	0	0	25		
NE	0	10	7	2	0	0	19		
ENE	0	5	2	0	0	0	7		
Е	2	6	8	1	3	0	20		
ESE	0	1	5	4	1	0	11		
SE	0	5	6	8	1	0	20		
SSE	1	4	17	13	2	0	37		
S	2	6	19	17	4	0	48		
SSW	2	2	10	10	4	0	28		
SW	0	5	14	9	0	0	28		
WSW	3	3	7	5	0	0	18		
W	1	3	6	6	0	0	16		
WNW	0	1	6	4	0	0	11		
NW	2	0	7	9	0	0	18		
NNW	2	1	1	2	2	0	8		
Variable	0	0	0	0	0	0	0		
Total	18	59	134	102	18	0	331		

Wind Speed (in mph)

Period of Record: July - September 2005 Stability Class - Extremely Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

		EM	nd Speed	d (in mpi	1)		
Wind Direction	1-3	4 -7	8-12	13-18	19-24	> 24	Total
N	0	1	0	3	1	0	5
NNE	0	3	1	2	0	0	6
NE	0	0	0	1	0	0	1
ENE	0	0	0	0	0	0	0
Е	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	1	0	0	0	1
SSE	0	0	2	0	0	0	2
S	0	2	1	2	2	0	7
SSW	0	2	0	3	2	0	7
SW	0	0	1	10	0	0	11
WSW	0	0	1	0	0	0	1
W	0	0	1	5	0	0	6
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	2	0	2
NNW	0	0	0	3	2	0	5
Variable	0	0	0	0	0	0	0
Total	0	8	8	29	9	0	54

Mind Consol (in much)

Period of Record: October - December2005 Stability Class - Extremely Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

•		wind speed (in mpn)							
Wind Direction	1-3	4 -7	8-12	13-18	19-24	> 24	Total		
N	0	7	5	0	0	0	12		
NNE	1	2	3	0	0	0	6		
NE	1	11	10	0	0	0	22		
ENE	1	4	4	0	0	0	9		
Е	0	1	5	0	0	0	6		
ESE	0	0	0	3	0	0	3		
SE	0	0	1	1	0	0	2		
SSE	0	0	1	0	0	0	1		
S	0	0	1	2	0	0	3		
SSW	0	2	5	10	0	0	17		
SW	0	3	4	4	1	0	12		
WSW	1	5	7	2	2	0	17		
W	0	6	15	2	2	0	25		
WNW	0	3	23	1	0	0	27		
NW	0	6	15	3	1	0	25		
NNW	1	12	7	0	1	0	21		
Variable	0	0	0	0	0	0	0		
Total	5	62	106	28	7	0	208		

Wind Speed (in mph)

Period of Record: October - December2005 Stability Class - Moderately Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

•••• •		Wi	nd Speed	d (in mpl	n)						
Wind Direction	1-3	4 -7	8-12	13-18 	19-24 	> 24	Total				
N	0	1	2	0	0	0	3				
NNE	0	1	0	0	0	0	1				
NE	0	1	1	0	0	0	2				
ENE	0	3	0	0	0	0	3				
Е	0	0	1	0	0	0	1				
ESE	0	0	1	0	0	0	1				
SE	0	0	0	0	0	0	0				
SSE	0	1	2	0	0	0	3				
S	0	3	2	0	0	0	5				
SSW	0	2	4	4	0	0	10				
SW	0	1	2	0	0	0	3				
WSW	0	0	4	0	0	0	4				
W	1	1	3	0	1	0	6				
WNW	0	2	2	3	0	0	7				
NW	0	1	2	1	0	0	4				
NNW	0	5	4	0	0	0	9				
Variable	0	0	0	0	0	0	0				
Total	1	22	30	8	1	0	62				
Period of Record: October - December2005 Stability Class - Slightly Unstable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

tati - A	Wind Speed (in mph)								
Direction	1-3	4 -7	8-12	13-18	19-24 	> 24	Total		
N	0	2	0	0	0	0	2		
NNE	0	4	0	0	0	0	4		
NE	0	1	0	0	0	0	1		
ENE	0	0	0	0	0	0	0		
E	1	2	2	0	0	0	5		
ESE	0	0	0	0	0	0	0		
SE	0	0	0	0	0	0	0		
SSE	0	2	2	0	0	0	4		
S	2	1	2	2	0	0	7		
SSW	1	0	2	3	0	0	6		
SW	0	0	4	2	0	0	6		
WSW	0	2	1	2	0	0	5		
W	0	5	3	3	0	0	11		
WNW	0	4	2	0	0	0	6		
NW	0	2	1	0	0	0	3		
NNW	0	1	0	0	0	0	1		
Variable	0	0	0	0	0	0	0		
Total	4	26	19	12	0	0	61		

Period of Record: October - December2005 Stability Class - Neutral - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph)

Wind			-	. –			
Direction	1-3	4-7	8-12	13-18	19-24	> 24	Total
~							
N	2	8	4	0	0	0	14
NNE	2	9	2	0	0	0	13
NE	2	21	5	0	0	0	28
ENE	2	17	7	0	0	0	26
E	5	25	29	0	0	0	59
ESE	2	14	18	4	0	0	38
SE	1	4	13	8	0	0	26
SSE	1	5	15	3	0	0	24
S	1	10	17	16	5	0	49
SSW	0	7	16	24	2	0	49
SW	2	8	20	17	3	0	50
WSW	4	14	11	11	9	0	49
W	3	21	40	15	13	0	92
WNW	1	25	25	18	0	0	69
NW	3	21	22	7	0	0	53
NNW	5	14	21	4	0	0	44
Variable	0	0	0	0	0	0	0
Total	36	223	265	127	32	0	683

Period of Record: October - December2005 Stability Class - Slightly Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

	Wind Speed (in mph)									
Wind Direction	1-3	4-7 	8-12	13-18	19-24	> 24	Total			
N	12	16	3	1	0	0	32			
NNE	20	9	1	0	0	0	30			
NE	6	. 15	3	0	0	0	24			
ENE	4	5	4	0	0	0	13			
E	0	13	5	0	0	0	18			
ESE	9	11	7	3	0	0	30			
SE	6	15	19	7	1	0	48			
SSE	11	32	25	3	0	0	71			
S	7	48	67	16	8	0	146			
SSW	6	14	40	14	4	0	78			
SW	10	15	18	3	0	0	46			
WSW	6	15	11	3	1	0	36			
W	15	50	29	7	0	0	101			
WNW	21	53	16	9	0	0	99			
NW	16	18	5	0	0	0	39			
NNW	11	47	26	1	0	0	85			
Variable	0	0	0	0	0	0	0			
Total	160	376	279	67	14	0	896			

Period of Record: October - December2005 Stability Class - Moderately Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

	Wind Speed (in mph)								
Direction	1-3	4-7 	8-12	13-18	19-24 	> 24	Total		
N	9	0	0	0	0	0	9		
NNE	3	1	0	0	0	0	4		
NE	2	0	0	0	0	0	2		
ENE	0	1	0	0	0	0	1		
Е	0	0	0	0	0	0	0		
ESE	1	2	0	0	0	0	3		
SE	4	4	0	0	0	0	8		
SSE	5	10	0	0	0	0	15		
S	12	16	9	0	0	0	37		
SSW	11	18	0	0	0	0	29		
SW	8	12	2	0	0	0	22		
WSW	7	5	0	0	0	0	12		
W	6	2	0	0	0	0	8		
WNW	5	3	0	0	0	0	8		
NW	8	15	0	0	0	0	23		
NNW	10	2	0	0	0	0	12		
Variable	0	0	0	0	0	0	0		
Total	91	91	11	0	0	0	193		

Period of Record: October - December2005 Stability Class - Extremely Stable - 150Ft-35Ft Delta-T (F) Winds Measured at 35 Feet

Wind Speed (in mph) Wind Direction 4-7 1-3 8-12 13-18 19-24 > 24 Total -------------____ ____ ____ ----_____ N NNE NE 0 0 ENE Е ESE SE SSE S SSW SW WSW W WNW NW NNW Variable

Hours of calm in this stability class: 0 Hours of missing wind measurements in this stability class: 0 Hours of missing stability measurements in all stability classes: 0

Total

Period of Record: October - December2005 Stability Class - Extremely Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind	Wind Speed (in mph)								
Direction	1-3	4 -7	8-12	13-18	19-24	> 24	Total		
N	0	0	1	1	0	0	2		
NNE	0	0	1	0	1	0	2		
NE	0	0	4	6	0	0	10		
ENE	0	0	1	0	0	0	1		
Е	0	0	0	0	0	0	0		
ESE	0	0	0	0	0	0	0		
SE	0	0	0	0	0	0	0		
SSE	0	0	0	0	0	0	0		
S	0	0	0	0	0	0	0		
SSW	0	0	0	0	0	0	0		
SW	0	0	0	0	1	0	1		
WSW	0	0	1	0	0	0	1		
W	0	0	0	0	0	1	1		
WNW	0	0	1	6	0	0	7		
NW	0	0	0	3	0	1	4		
NNW	0	0	2	2	0	1	5		
Variable	0	0	0	0	0	0	0		
Total	0	0	11	18	2	3	34		

Period of Record: October - December2005 Stability Class - Moderately Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

*** - 1	Wind Speed (in mph)								
Wind Direction	1-3	4-7 	8-12	13-18 	19-24 	> 24	Total		
N	0	1	1	3	0	0	5		
NNE	0	0	1	0	0	0	1		
NE	0	0	4	4	0	0	8		
ENE	0	0	1	0	0	0	1		
E	0	0	0	0	0	0	0		
ESE	0	0	0	0	0	0	0		
SE	0	0	0	0	0	0	0		
SSE	0	0	0	0	0	0	0		
S	0	0	0	0	0	0	0		
SSW	0	0	0	6	1	0	7		
SW	0	0	0	2	2	1	5		
WSW	0	2	1	2	0	2	7		
W	0	0	3	2	0	2	7		
WNW	0	0	4	5	0	1	10		
NW	0	0	1	3	0	2	6		
NNW	0	1	1	4	0	0	6		
Variable	0	0	0	0	0	0	0		
Total	0	4	17	31	3	8	63		

Period of Record: October - December2005 Stability Class - Slightly Unstable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

	wind Speed (in mpn)								
Direction	1-3	4-7 	8-12	13-18	19-24	> 24	Total		
N	0	1	2	1	0	0	4		
NNE	0	0	0	0	1	0	1		
NE	0	1	2	0	0	0	3		
ENE	0	0	2	2	0	0	4		
Ē	0	0	1	0	0	0	1		
ESE	0	0	0	0	0	0	0		
SE	0	0	1	0	0	0	1		
SSE	0	0	4	1	0	0	5		
S	0	0	2	2	1	0	5		
SSW	0	0	1	8	5	0	14		
SW	0	1	1	1	0	0	3		
WSW	0	1	4	1	1	1	8		
W	0	0	5	2	0	1	8		
WNW	1	1	3	3	1	1	10		
NW	0	2	2	2	0	0	6		
NNW	0	2	1	4	1	0	8		
Variable	0	0	0	0	0	0	0		
Total	1	9	31	27	10	3	81		

Wind Speed (in mph)

Period of Record: October - December2005 Stability Class - Neutral - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind Speed (in mph)

Wind							
Direction	1-3	4-7 	8-12	13-18	19-24 	> 24	Total
N	3	4	9	18	6	2	42
NNE	3	5	10	13	3	0	34
NE	0	1	17	6	0	0	24
ENE	0	9	30	13	0	0	52
E	1	9	18	37	0	0	65
ESE	2	1	18	10	3	2	36
SE	1	1	7	18	19	2	48
SSE	0	3	10	18	14	1	46
S	1	6	18	30	19	8	82
SSW	1	4	11	24	26	4	70
SW	2	9	18	11	18	10	68
WSW	1	9	16	14	12	14	66
W	1	17	37	47	32	23	157
WNW	1	8	37	27	27	12	112
NW	0	9	23	32	4	8	76
NNW	0	10	12	50	11	3	86
Variable	0	0	0	0	0	0	0
Total	17	105	291	368	194	89	1064

Period of Record: October - December2005 Stability Class - Slightly Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind											
Direction	1-3 	4-7 	8-12	13-18	19-24	> 24 	Total				
N	0	5	12	16	6	0	39				
NNE	1	7	15	3	0	0	26				
NE	0	5	12	7	0	0	24				
ENE	2	10	3	0	0	0	15				
Е	0	1	11	1	0	0	13				
ESE	1	1	13	4	0	0	19				
SE	1	2	5	10	0	3	21				
SSE	1	3	8	23	9	0	44				
S	0	2	11	49	38	11	111				
SSW	0	3	12	36	48	10	109				
SW	1	4	9	15	11	0	40				
WSW	3	5	11	9	2	3	33				
W	0	7	17	27	3	0	54				
WNW	0	4	28	39	10	1	82				
NW	2	3	10	18	6	0	39				
NNW	1	9	3	16	16	0	45				
Variable	0	0	0	0	0	0	0				
Total	13	71	180	273	149	28	714				

Wind Speed (in mph)

Period of Record: October - December2005 Stability Class - Moderately Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

Wind	ning of the many									
Direction	1-3 	4-7 	8-12	13-18	19-24	> 24	Total			
N	0	1	2	1	0	0	4			
NNE	1	0	6	2	0	0	9			
NE	0	2	0	2	0	0	4			
ENE	0	3	4	0	0	0	7			
E	0	0	0	0	0	0	0			
ESE	0	1	0	0	0	0	1			
SE	0	2	1	0	0	0	3			
SSE	0	2	6	3	1	0	12			
S	1	2	6	2	5	0	16			
SSW	0	2	0	23	5	0	30			
SW	0	5	1	11	0	0	17			
WSW	0	2	6	18	1	0	27			
W	1	0	9	17	0	0	27			
WNW	0	1	2	0	1	0	4			
NW	0	3	8	7	6	0	24			
NNW	1	4	2	5	0	0	12			
Variable	0	0	0	0	0	0	0			
Total	4	30	53	91	19	0	197			

Wind Speed (in mph)

Period of Record: October - December2005 Stability Class - Extremely Stable - 300Ft-35Ft Delta-T (F) Winds Measured at 300 Feet

	Wind Speed (in mph)								
Wind Direction	1-3	<u>4</u> -7	8-12	13-18	19-24	> 24	Total		
N	0	0	0	3	4	0	7		
NNE	0	0	1	3	3	0	7		
NE	0	1	0	0	0	0	1		
ENE	0	0	0	0	0	0	0		
Έ	0	0	0	0	0	0	0		
ESE	0	0	0	0	0	0	0		
SE	0	0	0	0	0	0	0		
SSE	0	0	0	0	0	0	0		
S	0	0	0	0	0	0	0		
SSW	0	0	1	4	1	0	6		
SW	0	1	0	3	1	0	5		
WSW	0	1	0	2	0	0	3		
W	0	1	1	2	2	0	6		
WNW	0	0	1	0	0	0	1		
NW	0	0	2	1	0	0	3		
NNW	0	0	2	4	0	0	6		
Variable	0	0	0	0	0	0	0		
Total	0	4	8	22	11	0	45		