Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

April 30, 2013

10 CFR 50.36a(a)(2)
10 CFR 50.4

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

Watts Bar Nuclear Plant, Unit 1
Facility Operating License No. NPF-90
NRC Docket No. 50-390

Subject: **ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2012**

Enclosed is the subject Annual Radioactive Effluent Release Report (ARERR) for the period of January 1, 2012 to December 31, 2012. This report (Enclosure 1) is being submitted as required by the respective Watts Bar Nuclear Plant (WBN), Unit 1, Technical Specification 5.9.3, which specifies that the report be submitted prior to May 1st of each year.

Enclosure 1 is divided into four principal sections. The first section provides the required effluent release data. Attachment 1 to Enclosure 1 documents any deviations which have occurred from Offsite Dose Calculation Manual (ODCM) requirements. Attachment 2 addresses any radioactive effluent monitoring instrumentation which was inoperable for greater than 30 days. Attachment 3 of Enclosure 1 provides a copy of Revision 23 of the ODCM. This revision was in effect as of February 12, 2010, and is provided in accordance with Technical Specification 5.7.2.3.

Enclosure 2 addresses requirements of the Process Control Program (PCP) which are reported in conjunction with the ARERR in accordance with Section 2.4 of the PCP.

A009
IE48

There are no regulatory commitments in this letter. If you have any questions concerning this matter, please contact Donna Guinn, Site Licensing Manager, at (423) 365-1589.

Respectfully,

for

J. W. Shea
Vice President, Nuclear Licensing

Enclosures: 1. Annual Radioactive Effluent Release Report, 2012
2. Process Control Program Reporting Requirements

cc (Enclosures):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Watts Bar Nuclear Plant Unit 1

Enclosure 1

Watts Bar Nuclear Plant Unit 1

Annual Radioactive Effluent Release Report - 2012

2012
WATTS BAR NUCLEAR PLANT UNIT 1
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

1. Regulatory Limits

A. Gaseous Effluents

1. Dose rates due to radioactivity released in gaseous effluents from the site to areas at and beyond the unrestricted area boundary shall be limited to the following:

   a. Noble gases: - Less than or equal to 500 mrem/year to the total body.
   - Less than or equal to 3000 mrem/year to the skin.

   b. Iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days:

   - Less than or equal to 1500 mrem/year to any organ.

2. Air dose due to noble gases released in gaseous effluents to areas at and beyond the unrestricted area boundary shall be limited to the following:

   a. Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation during any calendar quarter.

   b. Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation during any calendar year.

3. Dose to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released to areas at and beyond the unrestricted area boundary shall be limited to the following:

   a. Less than or equal to 7.5 mrem to any organ during any calendar quarter.

   b. Less than or equal to 15 mrem to any organ during any calendar year.

B. Liquid Effluents

1. The concentration of radioactivity released in liquid effluents to unrestricted areas shall be limited to 10 times the concentrations specified in Title 10 of the Code of Federal Regulations, Part 20 (Standards for Protection against Radiation), 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 2.0 E-04 μCi/ml total activity.

2. The dose or dose commitment to a member of the public from radioactivity in liquid effluents released to unrestricted areas shall be limited to:

   a. Less than or equal to 1.5 mrem to the total body and less than or equal to 5 mrem to any organ during any calendar quarter.

   b. Less than or equal to 3 mrem to the total body and less than or equal to 10 mrem to any organ during any calendar year.

SUPPLEMENTAL INFORMATION

2. Effluent Concentration Limits

A. Liquids

The Effluent Concentration Limits (ECL) for liquids are those listed in 10 CFR 20, Appendix B, Table 2, Column 2. For dissolved and entrained gases the ECL of 2.0E-04 μCi/ml is applied. This ECL is based on the Xe-135 concentration in air (submersion dose) converted to an equivalent concentration in water as discussed in the International Commission on Radiological Protection (ICRP), Publication 2.

B. Gaseous

Concentration limits for gaseous releases are met through compliance with the maximum permissible dose rates for gaseous releases as defined in plant Offsite Dose Calculation Manual (ODCM) and presented in Section 1.A.1 of this report.

3. Average Energy

Watts Bar Nuclear Plant's (WBN) ODCM limits the dose equivalent rates due to the release of noble gases to less than or equal to 500 mrem/year to the total body and less than or equal to 3000 mrem/year to the skin. Therefore, the average beta and gamma energies (E) for gaseous effluents as described in Regulatory Guide 1.21, "Measuring, Evaluation, 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.

4. Measurements and Approximations of Total Radioactivity

Radioactivity measurements performed in support of the WBN ODCM meet the Lower Limit of Detection requirements given in ODCM Tables 2.2-1 and 2.2-2.

A. Liquid Effluents

Batch (Radwaste and Condensate Demineralizer tanks)

Total gamma isotopic and tritium concentrations are determined on each Radwaste batch tank prior to release. The total activity of a batch release is obtained by determining the concentration of each nuclide and then multiplying by the volume discharged to arrive at the curie activity for each nuclide. The curies of each nuclide are then summed. Composite samples are maintained and analyzed monthly for gross alpha and quarterly for iron-55, strontium-89, and strontium-90. During periods of no significant identified primary to secondary leakage, composite samples are not maintained for batch releases from the Condensate Demineralizer Tank releases. During periods of no significant identified primary to secondary leakage or when the Condensate Demineralizer Tanks are discharged to the Turbine Building Station Sump, the feedwater tritium concentration is used to determine the curies of tritium released from Condensate Demineralizer Tank.

Continuous Releases (Turbine Building Station Sump (TBSS), Steam Generator Blowdown (SGB), and Groundwater Sump (GWS))

During periods of no significant identified primary to secondary leakage, the volume released from the TBSS and SGB is obtained. The TBSS tritium concentration is determined via weekly grab samples. The feedwater tritium concentration is used to determine the curies of tritium released from SGB. The GWS is sampled monthly and analyzed for gross gamma and tritium on a monthly basis and for strontium-89 and strontium-90 on a quarterly basis. The total activity released is obtained by determining the concentration of each nuclide and then multiplying by the volume discharged to arrive at the curie activity for each nuclide.

Monitoring Wells

WBN started conducting an investigation of tritium releases to the groundwater in 2003 due to identification of tritium in three of the four newly installed on-site monitoring wells associated with the December 2002 Department of Energy tritium production program site preparation activity. This study involved pressure testing of the radwaste discharge line, evaporation calculations of the Spent Fuel Pool (SFP) and Refueling Water Storage Tank (RWST), installation and sampling of groundwater wells, inspection of drain lines, boroscopic investigation of the SFP, and Fuel Transfer Canal leak collection system channels and drains.

In addition to the six (6) Radiologocial Environmental Monitoring Program (REMP) on-site groundwater monitoring wells, WBN also has 19 non-REMP monitoring wells to support monitoring the onsite groundwater plume for the presence or increase of radioactivity. WBN contracted with ARCADIS in 2004 to perform an investigation of the impact tritium had on groundwater and to perform a site characterization, area of impact, and preliminary human health and ecological risk screening. ARCADIS has been performing an updated site conceptual model since 2011. Comments are currently being resolved and the final report should be complete in 2013.

Monitoring Wells (Continued)

The on-site monitoring wells are sampled semi-annually for gamma and tritium. These wells continue to exhibit a downward trend. The tritium concentrations obtained in 2012 from these monitoring wells are listed below. The Well K sample was also analyzed for Sr-89, Sr-90, Fe-55, and Ni-63, with no detectable results.

Well ID	06/26/2012 Activity pCi/L	12/05/2012 Activity pCi/L
A	<270	<270
B	1,111	1,429
C	401	425
D	700	Dry
E	<270	<270
F	<270	727
G	<270	<270
H	1,555	Dry
I	<270	583
J	1,955	1,853
K	9,202	5,665
L	712	775
O	<270	<270
P	<270	288
Q	<270	<270
R	1461	1,822
S	508	<270

Doses from I-131 Water Ingestion Pathway

The radiological environmental monitoring program (REMP) specified in Table 3.12-1 from NUREG 1301, "Offsite Does Calculation Manual Guidance: Standard Radiological Effluent Controls for Pressurized Water Reactors," April 1991, requires an I-131 specific analysis for drinking water pathway samples if the annual dose from I-131 is greater than 1 mrem. To evaluate the need for implementation of this additional analysis, the drinking water pathway dose from I-131 to the maximum organ and age group was calculated. The results reported confirm that the drinking water pathway dose from I-131 was only a small fraction of the 1 mrem limit and that the performance of the I-131 specific analysis is not required for WBN REMP drinking water samples.

Quarter	1	2	3	4	Totals
I-131 Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Child/Thyroid (mrem)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Population/Thyroid (mrem)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

B. Gaseous Effluents

Fission and Activation Gases

Airborne effluent gaseous activity is continuously monitored and recorded. Weekly grab samples from the Auxiliary Building and monthly grab samples from the Service Building are taken and analyzed to determine the quantity of noble gas activity released based on the total flows for the sample period. Also, noble gas samples are collected and evaluated following startup, shutdown, or rated thermal power change exceeding 15 percent within one hour. Sampling is only required if dose equivalent I-131 concentration in the primary coolant or if the noble gas activity monitor indicates that the containment activity has increased more than a factor of three.

The concentration of noble gases released through the Shield Building exhaust due to purging of containment is determined by using the purge monitor response in combination with containment air samples obtained prior to purge. The quantity of activity released during the purge is determined using the duration, flowrate, and concentration of noble gases for each purge. Also, noble gas samples are collected and evaluated for ongoing containment purges following startup, shutdown, or rated thermal power change exceeding 15 percent within one hour. Sampling is only required if DEI concentration in the primary coolant or if the noble gas activity monitor shows that the containment activity has increased more than a factor of three.

The quantity of noble gases released through the Shield Building exhaust due to the batch release of waste gas decay tanks is determined by sampling each tank prior to release. The total activity released is determined from the total pressure change recorded for the tank during the release.

Iodines and Particulates in Gaseous Releases

Iodine and particulate activity are continuously sampled. Weekly charcoal and particulate samples are taken from the Shield Building exhaust and auxiliary building exhausts and from the Condenser Vacuum Exhaust during periods of primary to secondary leakage. These samples are analyzed at least weekly to determine the total activity released from the plant based on the total vent flows recorded for the sampling period. Also, when a primary to secondary leak exists, particulate and charcoal samples are taken from the Shield Building Exhausts, Auxiliary Building Exhaust, and Condenser Vacuum Exhaust once per 24 hours for 7 days following startup, shutdown, or a rated thermal power change exceeding 15 percent within one hour if dose equivalent I-131 concentration in the primary coolant or the noble gas activity monitor shows that the containment activity has increased more than a factor of three.

Carbon-14 in Gaseous Releases

The carbon-14 production and effluent source term estimates were based on EPRI methodology provided in EPRI Report 1021106, "Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents," dated December 2010. It was determined that 10.6 curies of carbon-14 is generated annually at WBN. However, only 98% is considered released as gas and only the carbon dioxide form (20%) of that is used in the gaseous dose calculations.

5. Batch Releases

	Value		
	1st Half	2nd Half	Units
A. Liquid (Radwaste only)			
1. Number of releases	35	71	Each
2. Total time period of releases	4,853	14,330	Minutes
3. Maximum time period of release	405	760	Minutes
4. Average time period of releases	139	202	Minutes
5. Minimum time period for release	75	80	Minutes
6. Average dilution stream flow during release periods	25,845	21,871	CFS
B. Gaseous (Batches only - containment purges, and waste gas decay tanks)			
1. Number of releases	19	23	Each
2. Total time period of releases	23,400	78,597	Minutes
3. Maximum time period for release	10962	28,157	Minutes
4. Average time period for releases	1232	3,417	Minutes
5. Minimum time period for release	5	4	Minutes

6. Abnormal Releases

	Value		Units
	1st Half	2nd Half	
A. Liquid			
Number of Releases	0	0	
Total Activity Released	0.00E+00	0.00E+00	Ci
B. Gaseous			
Number of Releases	0	0	
Total Activity Released	0.00E+00	0.00E+00	Ci

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TABLE 1-A

Liquid Effluents - Summation of All Releases
During the period
Starting: 1-Jan-2012 Ending: 30-Jun-2012

Type Of Effluent	Units	Quarter 1	Quarter 2	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release (Not Including Tritium, Gases, Alpha)	Ci	3.77E-03	6.52E-03	25%
2. Average Diluted Concentration During Period	µCi/ml	3.34E-10	7.08E-10	
3. Percent Of Applicable Limit	%	*	*	
B. Tritium				
1. Total Release	Ci	5.10E+01	3.35E+02	18%
2. Average Diluted Concentration During Period	µCi/ml	5.90E-06	2.26E-05	
3. Percent Of Applicable Limit	%	*	*	
C. Dissolved And Entrained Gases				
1. Total Release	Ci	0.00E+00	3.63E-06	39%
2. Average Diluted Concentration During Period	µCi/ml	0.00E+00	2.45E-13	
3. Percent Of Applicable Limit	%	0.00E+00	1.23E-07	
D. Gross Alpha Radioactivity				
1. Total Release	Curies	0.000E+00**	0.000E+00	N/A**
E. Total Waste Volume Released (Pre-Dilution)	Liters	1.13E+10	2.31E+09	2%
F. Volume Of Dilution Water Used	Liters	3.13E+08	9.20E+09	12%
G. Radwaste Volume Released	Liters	5.95E+05	7.07E+05	12%

Zeroes in this table indicate that no radioactivity was present at detectable levels.

* Applicable limits are expressed in terms of dose. See Table 7A of this report.

** N/A - Errors in measurements are not reported for these values, because none were identified during the reporting period.

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WATTS BAR NUCLEAR PLANT UNIT 1
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TABLE 1-B

Liquid Effluents - Summation of All Releases
During the period
Starting: 1-Jul-2012 Ending: 31-Dec-2012

Type Of Effluent	Units	Quarter 3	Quarter 4	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release (Not Including Tritium, Gases, Alpha)	Ci	1.74E-02	1.09E-02	25%
2. Average Diluted Concentration During Period	µCi/ml	1.82E-09	9.23E-10	
3. Percent Of Applicable Limit	%	*	*	
B. Tritium				
1. Total Release	Ci	2.24E+03	8.84E+01	18%
2. Average Diluted Concentration During Period	µCi/ml	1.27E-04	6.96E-06	
3. Percent Of Applicable Limit	%	*	*	
C. Dissolved And Entrained Gases				
1. Total Release	Ci	1.76E-02	1.95E-05	39%
2. Average Diluted Concentration During Period	µCi/ml	9.96E-10	1.54E-12	
3. Percent Of Applicable Limit	%	4.98E-04	7.68E-07	
D. Gross Alpha Radioactivity				
1. Total Release	Ci	0.00E+00**	0.00E+00	N/A**
E. Total Waste Volume Released (Pre-Dilution)	Liters	2.08E+08	2.70E+08	2%
F. Volume Of Dilution Water Used	Liters	9.55E+09	1.18E+10	12%
G. Radwaste Volume Released	Liters	1.93E+06	8.62E+05	12%

Zeroes in this table indicate that no radioactivity was present at detectable levels.

* Applicable limits are expressed in terms of dose. See Table 7A of this report.

** N/A - Errors in measurements are not reported for these values, because none were identified during the reporting period.

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TABLE 2-A

Curies Released in Liquid Effluents
During the period
Starting: 1-Jan-2012 Ending: 31-Mar-2012

	CONTINUOUS	BATCH	TOTAL
H-3	2.99E-01	5.07E+01	5.10E+01
FISSION & ACTIVATION PRODUCTS			
CO-57	0.00E+00	8.91E-06	8.91E-06
CO-58	0.00E+00	5.02E-04	5.02E-04
CO-60	0.00E+00	3.33E-04	3.33E-04
CS-134	0.00E+00	3.19E-05	3.19E-05
CS-137	0.00E+00	1.86E-04	1.86E-04
FE-55	0.00E+00	2.36E-03	2.36E-03
MN-54	0.00E+00	1.15E-04	1.15E-04
SB-125	0.00E+00	2.14E-04	2.14E-04
AG-117M	0.00E+00	1.34E-06	1.34E-06
TOTALS	0.00E+00	3.77E-03	3.77E-03
DISSOLVED AND ENTRAINED GASES			
TOTALS	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 2-B

Curies Released in Liquid Effluents
During the period
Starting: 1-Apr-2012 Ending: 30-Jun-2012

	CONTINUOUS	BATCH	TOTAL
H-3	1.17E-02	3.35E+02	3.35E+02
FISSION & ACTIVATION PRODUCTS			
CO-57	0.00E+00	5.38E-06	5.38E-06
CO-58	0.00E+00	2.21E-04	2.21E-04
CO-60	0.00E+00	2.33E-04	2.33E-04
CS-137	0.00E+00	7.82E-07	7.82E-07
FE-55	0.00E+00	5.41E-03	5.41E-03
MN-54	0.00E+00	1.79E-05	1.79E-05
SB-125	0.00E+00	6.22E-04	6.22E-04
SR-89	0.00E+00	4.69E-05	5.38E-06
TOTALS	0.00E+00	6.52E-03	6.52E-03
DISSOLVED AND ENTRAINED GASES			
XE-133	0.00E+00	3.63E-06	3.63E-06
TOTALS	0.00E+00	3.63E-06	3.63E-06

*Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 2-C

Curies Released in Liquid Effluents
During the period
Starting: 1-Jul-2012 Ending: 30-Sep-2012

	CONTINUOUS	BATCH	TOTAL
H-3	1.59E-02	2.24E+03	2.24E+03
FISSION & ACTIVATION PRODUCTS			
CO-57	0.00E+00	9.69E-06	9.69E-06
CO-58	0.00E+00	1.05E-03	1.05E-03
CO-60	0.00E+00	6.19E-04	6.19E-04
CR-51	0.00E+00	8.42E-05	8.42E-05
CS-137	0.00E+00	2.26E-05	2.26E-05
FE-55	0.00E+00	1.43E-02	1.43E-02
MN-54	0.00E+00	2.08E-05	2.08E-05
NB-95	0.00E+00	4.73E-06	4.73E-06
SB-125	0.00E+00	6.13E-04	6.13E-04
SR-89	0.00E+00	6.32E-04	6.32E-04
TOTALS	0.00E+00	1.74E-02	1.74E-02
DISSOLVED AND ENTRAINED GASES			
XE-131M	0.00E+00	7.57E-05	7.57E-05
XE-133	0.00E+00	1.67E-02	1.67E-02
XE-133M	0.00E+00	2.95E-04	2.95E-04
XE-135	0.00E+00	5.05E-04	5.05E-04
TOTALS	0.00E+00	1.76E-02	1.76E-02

*Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 2-D

Curies Released in Liquid Effluents
During the period
Starting: 1-Oct-2012 Ending: 31-Dec-2012

	CONTINUOUS	BATCH	TOTAL
H-3	5.62E-02	8.83E+01	8.84E+01
FISSION & ACTIVATION PRODUCTS			
CO-57	0.00E+00	8.64E-07	8.64E-07
CO-58	0.00E+00	2.39E-03	2.39E-03
CO-60	0.00E+00	2.94E-04	2.94E-04
CR-51	0.00E+00	2.20E-04	2.20E-04
FE-55	0.00E+00	7.80E-03	7.80E-03
MN-54	0.00E+00	1.15E-06	1.15E-06
NB-95	0.00E+00	5.40E-06	5.40E-06
SB-125	0.00E+00	3.99E-05	3.99E-05
SR-89	0.00E+00	1.70E-04	1.70E-04
TOTALS	0.00E+00	1.09E-02	1.09E-02
DISSOLVED AND ENTRAINED GASES			
XE-133	0.00E+00	1.95E-05	1.95E-05
TOTALS	0.00E+00	1.95E-05	1.95E-05

* Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 3-A

Gaseous Effluents - Summation of All Releases
During the period
Starting: 1-Jan-2012 Ending: 30-Jun-2012

Type Of Effluent	Units	Quarter 1	Quarter 2	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release	Ci	8.39E-01	4.33E+01	22
2. Average Release Rate For Period	µCi/sec	1.06E-01	5.51E-01	
3. Percent Of Applicable Limit	%	*	*	
B. Radioiodines				
1. Total Iodine-131	Ci	0.000E+00	0.000E+00	N/A**
2. Average Release Rate For Period	µCi/sec	0.000E+00	0.000E+00	
3. Percent Of Applicable Limit	%	*	*	
C. Particulates				
1. Particulates (Half-Lives>8 Days)	Ci	1.30E-03	1.78E-03	15
2. Average Release Rate For Period	µCi/sec	1.65E-04	2.26E-04	
3. Percent Of Applicable Limit	%	*	0.000E+00 *	
4. Gross Alpha Radioactivity	Ci	0.000E+00	0.000E+00	N/A**
D. Tritium				
1. Total Release	Ci	7.75E+00	6.45E+00	11
2. Average Release Rate For Period	µCi/sec	9.89E-01	8.21E-01	
3. Percent Of Applicable Limit	%	*	*	
E. Carbon-14				
1. Total Release	Ci	2.72E+00	2.72E+00	N/A
2. Average Release Rate For Period	µCi/sec	3.44E-01	3.46E-02	
3. Percent Of Applicable Limit	%	*	*	

Zeroes in this table indicate that no radioactivity was present at detectable levels.

* Applicable limits are expressed in terms of dose. See Table 6A of this report.

** N/A - Errors in measurements are not reported for these values, because none were identified during the reporting period.

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WATTS BAR NUCLEAR PLANT UNIT 1
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TABLE 3-B

Gaseous Effluents - Summation of All Releases
During the period
Starting: 1-Jul-2012 Ending: 31-Dec-2012

Type Of Effluent	Units	Quarter 3	Quarter 4	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release	Ci	4.19E+00	2.29E+00	22
2. Average Release Rate For Period	µCi/sec	5.27E-01	2.88E-01	
3. Percent Of Applicable Limit	%	*	*	
B. Radioiodines				
1. Total Iodine-131	Ci	7.63E-07	0.000E+00	N/A
2. Average Release Rate For Period	µCi/sec	9.60E-8	0.000E+00	
3. Percent Of Applicable Limit	%	*	*	
C. Particulates				
1. Particulates (Half-Lives>8 Days)	Ci	1.59E-05	0.000E+00	15
2. Average Release Rate For Period	µCi/sec	2.00E-06	0.000E+00	
3. Percent Of Applicable Limit	%	*	*	
4. Gross Alpha Radioactivity	Ci	0.000E+00	0.000E+00	**N/A
D. Tritium				
1. Total Release	Ci	1.14E+01	3.23E+01	11
2. Average Release Rate For Period	µCi/sec	1.44E+00	4.07E+00	
3. Percent Of Applicable Limit	%	*	*	
E. Carbon-14				
1. Total Release	Ci	2.04E+00	1.82E+00	N/A
2. Average Release Rate For Period	µCi/sec	2.57E-01	2.29E-01	
3. Percent Of Applicable Limit	%	*	*	

Zeroes in this table indicate that no radioactivity was present at detectable levels.

* Applicable limits are expressed in terms of dose. See Table 6A of this report.

** N/A - Errors in measurements are not reported for these values, because none were identified during the reporting period.

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TABLE 4-A

Curies released in Gaseous Ground Level Releases

During the period
Starting: 1-Jan-2012 Ending: 31-Mar-2012

	CONTINUOUS	BATCH	TOTAL
FISSION GASES			
KR-85	0.00E+00	3.44E-07	3.44E-07
XE-131M	0.00E+00	2.91E-04	2.91E-04
XE-133M	0.00E+00	3.08E-04	3.08E-04
XE-135	4.20E-02	6.53E-03	4.85E-02
XE-133	0.00E+00	1.57E-01	1.57E-01
AR-41	0.00E+00	6.32E-01	6.32E-01
TOTALS	4.20E-02	6.39E-01	8.38E-01
IODINES	0.00E+00	0.00E+00	0.00E+00
PARTICULATES			
BR-82	1.54E-07	0.00E+00	1.54E-07
MN-54	4.11E-06	0.00E+00	4.11E-06
CO-58	8.84E-06	0.00E+00	8.84E-06
CO-60	4.58E-05	0.00E+00	4.58E-05
TOTALS	5.89E-05	0.00E+00	5.89E-05
H-3	7.75E+00	0.00E+00	7.75E+00
C-14 (Total)	2.72E+00	0.00E+00	2.72E+00
C-14 (CO_2 Form)	5.44E-01	0.00E+00	5.44E-01

* Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 4-B

Curies released in Gaseous Ground Level Releases

During the period
Starting: 1-Apr-2012 Ending: 30-Jun-2012

	CONTINUOUS	BATCH	TOTAL
FISSION GASES			
KR-85	0.00E+00	5.74E-07	5.74E-07
XE-135	3.15E-02	2.73E-02	5.88E-02
XE-133	0.00E+00	2.63E-01	2.63E-01
AR-41	0.00E+00	4.01E+00	4.01E+00
TOTALS	3.15E-02	4.30E+00	4.33E+00
IODINES	0.00E+00	0.00E+00	0.00E+00
PARTICULATES			
BR-82	1.19E-06	0.00E+00	1.19E-06
TOTALS	1.19E-06	0.00E+00	1.19E-06
H-3	6.45E+00	4.27e-11	1.04E+01
C-14 (Total)	2.72E+00	0.00E+00	2.72E+00
C-14 (CO2 Form)	5.43E-01	0.00E+00	5.43E-01

* Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 4-C

Curies released in Gaseous Ground Level Releases

During the period
Starting: 1-Jul-2012 Ending: 30-Sep-2012

	CONTINUOUS	BATCH	TOTALS
FISSION GASES			
XE-135	0.00E+00	3.81E-02	3.81E-02
XE-133	0.00E+00	3.52E-01	3.52E-01
AR-41	0.00E+00	3.80E+00	3.80E+00
TOTALS	0.00E+00	4.19E+00	4.19E+00
IODINES			
I-131	7.63E-07	0.00E+00	7.63E-07
I-132	2.37E-05	0.00E+00	2.37E-05
TOTALS	2.45E-05	0.00E+00	2.45E-05
PARTICULATES			
BR-82	2.78E-06	0.00E+00	2.78E-06
CR-51	7.51E-06	0.00E+00	7.51E-06
CO-58	8.41E-06	0.00E+00	8.41E-06
TOTALS	1.87E-05	0.00E+00	1.87E-05
H-3	1.12E+01	2.67E-01	1.15E+01
C-14 (Total)	2.04E+00	0.00E+00	2.04E+00
C-14 (CO_2 Form)	4.07E-01	0.00E+00	4.07E-01

* Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 4-D

Curies released in Gaseous Ground Level Releases

During the period

Starting: 1-Oct-2012 Ending: 31-Dec-2012

	CONTINUOUS	BATCH	TOTALS
FISSION GASES			
KR-85	0.00E+00	2.65E-07	2.65E-07
XE-131M	0.00E+00	1.36E-04	1.36E-04
XE-133	0.00E+00	2.37E-02	2.37E-02
AR-41	0.00E+00	3.85E-01	3.85E-01
TOTALS	0.00E+00	4.09E-01	4.09E-01
IODINES			
I-131	7.62E-06	0.00E+00	7.62E-06
I-132	9.48E-06	0.00E+00	9.48E-06
TOTALS	1.71E-05	0.00E+00	1.71E-05
PARTICULATES			
CO-58	1.88E-06	0.00E+00	1.88E-06
CR-51	3.00E-06	0.00E+00	3.00E-06
TOTALS	4.89E-06	0.00E+00	4.89E-06
H-3	1.75E+01	5.16E+00	2.27E+01
C-14 (Total)	1.82E+00	0.00E+00	1.82E+00
C-14 (CO2 Form)	3.63E-01	0.00E+00	3.63E-01

* Zeroes in this table indicate that no radioactivity was present at detectable levels.

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TABLE 5-A

SOLID WASTE (RADIOACTIVE SHIPMENTS)

A. Solid Waste Shipped Offsite for Burial or Disposal (not Irradiated Fuel)

1. Type of Waste	Unit	12 Month Period	Est. (Ci) Error %
a. Spent resins, filters, sludges, evaporator bottoms, etc.	m^3	3.27	N/A
	Ci	16.1	+/-25%
b. Dry Active Waste, Compressible Waste Contaminated Equipment, etc.	m^3	102.0	N/A
	Ci	0.248	+/-25%
c. Irradiated Components, Control Rods, etc.	m^3	0.0	N/A
	Ci	0.0	N/A

2. Estimate of Major Nuclide Composition (by type of waste)
(Percent Cutoff = 1.0 percent)

a. Spent resins, filter sludges, evaporator bottoms, etc. (nuclides determined by measurement)

	Percent	***Ci***
H-3	2.969	4.77E-01
Mn-54	6.463	1.04E-00
Fe-55	41.77	6.72E+00
Co-58	1.111	1.79E-01
Co-60	31.05	4.99E+00
Ni-63	12.36	1.99E+00
Sb-125	2.901	4.66E-01

b. Dry active waste, compressible waste, contaminated equipment, etc. (nuclides determined by estimate)

	Percent	***Ci***
Mn-54	2.57	6.35E-03
Fe-55	46.48	1.15E-01
Co-58	1.38	3.42E-03
Co-60	28.54	7.07E-02
Ni-63	15.27	3.78E-02
Nb-95	1.44	3.57E-03
Sb-125	1.42	3.52E-03

c. Irradiated Components None **N/A**

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TABLE 5-B

SOLID WASTE (RADIOACTIVE SHIPMENTS)

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
14	Motor Freight	Energy Solutions Facility - Clive, UT

4. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Type Quantity	Mode of Transportation	Destination
None	N/A	N/A	N/A

5. Solidification of Waste

Was solidification performed? No

If yes, solidification media: N/A

Radiological Impact

Introduction

Potential doses to maximum individuals and the population around WBN are calculated for each quarter as required in Section 5.2 of the Offsite Dose Calculation Manual (ODCM). Measured plant releases for the reporting period are used to estimate these doses. Dispersion of radioactive effluents in the environment is estimated using meteorological data and riverflow data measured during the period. In this report, the doses resulting from releases are described and compared to limits established for WBN.

Dose Limits

The ODCM specifies limits for the release of radioactive effluents, as well as limits for doses to the general public, from the release of radioactive effluents. These limits are set well below the Technical Specification limits which govern the concentrations of radioactivity and doses permissible in unrestricted areas. This ensures that radioactive effluent releases are As Low As Reasonably Achievable.

Dose Calculations

Estimated doses to the public are determined using computer models (the Gaseous Effluent Licensing Code, GELC, and the Quarterly Water Dose Assessment Code (QWATA)). These models are based on guidance provided by the NRC (in Regulatory Guides 1.109, 1.111 and 1.113) for determining the potential dose to individuals and populations living in the vicinity of the plant. The area around the plant is analyzed to determine the pathways through which the public may receive a dose. The doses calculated are a representation of the dose to a "maximum exposed individual." Some of the factors used in these calculations (such as ingestion rates) are maximum values. Many of these factors are obtained from NUREG/CR-1004. The values chosen will tend to overestimate the dose to this "maximum" person. The expected dose to actual individuals is lower. The calculated doses are presented in Tables 6A, 6B, 7A, and 7B.

Doses From Airborne Effluents

For airborne effluents, the public can be exposed to radiation from several sources: direct radiation from the radioactivity in the air, direct radiation from radioactivity deposited on the ground, inhalation of airborne radioactivity, ingestion of vegetation which contains radioactivity deposited from the atmosphere, and ingestion of milk and beef which contains radioactivity deposited from the atmosphere onto vegetation and subsequently eaten by milk and beef animals.

Airborne Discharge Points

All releases from WBN are considered ground-level releases. The ground-level Joint Frequency Distribution (JFD) is derived from wind speeds and directions measured 10 meters above ground and from the vertical temperature difference between 10 and 46 meters, as presented for each quarter on pages E1-33 through E1-60.

Radiological Impact

Meteorological Data

Meteorological variables at WBN are measured continuously. Measurements collected include wind speed, wind direction, and temperature at heights of 10, 46, and 91 meters above the ground. Quarterly JFDs are calculated for each release point using the appropriate levels of meteorological data. A JFD provides the percentage of the time in a quarter that the wind is blowing out of a particular upwind compass sector in a particular range of wind speeds for a given stability class A through G. The wind speeds are divided into nine wind speed ranges. Calms are distributed by direction in proportion to the distribution of non-calm wind directions less than 0.7 m/s (1.5 mph). Stability classes are determined from the vertical temperature difference between two measurement levels.

External Exposure Dose

Dose estimates for maximum external air dose (gamma-air and beta-air doses) are made for points at and beyond the unrestricted area boundary as described in the WBN ODCM. The highest of these doses is then selected.

Submersion Dose

External doses to the skin and total body, due to submersion in a cloud of noble gases, are estimated for the nearest residence in each sector. The residence with the highest dose is then selected from all sectors.

Organ Dose

Doses to organs due to releases of airborne effluents are estimated for the inhalation, ground contamination, and ingestion pathways. The ingestion pathway is further divided into four possible contributing pathways: ingestion of cow/goat milk, ingestion of beef, and ingestion of vegetables. Doses from applicable pathways are calculated for each real receptor location identified in the most recent land use survey. To determine the maximum organ dose, the doses from the pathways are summed for each receptor. For the ingestion dose, however, only those pathways that exist for each receptor are considered in the sum, i.e., milk ingestion doses are included only for locations where milk is consumed without commercial preparation and vegetable ingestion is included only for those locations where a garden is identified. Because specific data on beef animals was not available, the location of the highest beef dose for all receptors within an age group will be considered the beef dose for each receptor within that age group. For ground contamination, the dose added to the organ dose being calculated is the total body dose calculated for that location, i.e., it is assumed that the dose to an individual organ is equal to the total body dose.

Doses from airborne effluents are presented in Tables 6A and 6B.

Radiological Impact

Land Use Survey

2012 Land Use Survey

Receptor Number	Receptor Type*	Sector	Distance (m)	GPS Coordinates N	GPS Coordinates W	Terrain Adj. Factor
1	NR	N	4590	35.64356	84.79812	1.5
2	NR	NNE	3750	35.63226	84.77014	1.8
3	NR	NE	3399	35.62474	84.76412	**2.3**
4	NR	ENE	3072	35.61506	84.75984	1.9
5	NR	E	3263	35.60587	84.75439	1.7
6	NR	ESE	4654	35.58139	84.74604	**1.8**
7	NR	SE	1409	35.59439	84.77861	1.5
8	NR	SSE	1646	35.58963	84.78191	**1.5**
9	NR	S	1550	35.58879	84.79047	1.8
10	NR	SSW	1832	35.58690	84.79567	1.9
11	NR	SW	4141	35.58118	84.82758	2.0
12	NR	WSW	2422	35.59270	84.81403	1.7
13	NR	W	2901	35.60557	84.82218	1.1
14	NR	WNW	1448	35.60967	84.80387	2.5
15	NR	NW	2065	35.61308	84.80929	1.5
16	NR	NNW	4376	35.63792	84.81208	1.0
17	**NG**	**N**	**6658**	**35.66260**	**84.79348**	**1.0**
18	**NG**	**NNE**	**5030**	**35.64057**	**84.75969**	**1.6**
19	NG	NE	3793	35.62840	84.76258	2.2
20	**NG**	**ENE**	**4847**	**35.62769**	**84.74628**	**1.6**
21	NG	E	4656	35.60406	84.73881	1.6
22	**NG**	**ESE**	**4931**	**35.58282**	**84.74158**	**1.8**
23	NG	SE	1409	35.59439	84.77861	1.5
24	**NG**	**SSE**	**1711**	**35.58799**	**84.78504**	**1.5**
25	NG	S	3535	35.57100	84.79110	2.0
26	**NG**	**SSW**	**8100**	**N/A**	**N/A**	**1.4**
27	NG	SW	8100	N/A	N/A	1.7
28	NG	WSW	3080	35.59324	84.82214	**1.7**
29	NG	W	3138	35.60768	84.82446	**1.1**
30	NG	WNW	2963	35.61725	84.81780	2.2
31	NG	NW	2065	35.61308	84.80929	1.5
32	**NG**	**NNW**	**4607**	**35.64017**	**84.81224**	**1.0**
33	MC	ESE	6889	35.57698	84.72101	1.7
34	MC	SSW	2286	35.58312	84.49693	2.0
35	MC	SSW	3353	35.63895	84.58937	2.0

* NR: Nearest Residence, NG: Nearest Garden, MC: Milk Cow

New locations and Terrain Adjustment Factors are represented by being bolded.

Radiological Impact

Doses From Liquid Effluents

For liquid effluents, the public can be exposed to radiation from three sources: the ingestion of water from the Tennessee River, the ingestion of fish caught in the Tennessee River, and direct exposure from radioactive material deposited on the river shoreline sediment (recreation).

The concentrations of radioactivity in the Tennessee River are estimated by a computer model which uses measured hydraulic data downstream of WBN. Parameters used to determine the doses are based on guidance given by the NRC (in Regulatory Guide 1.109) for maximum ingestion rates, exposure times, etc. Wherever possible, parameters used in the dose calculation are site specific use factors determined by TVA. The models that are used to estimate doses, as well as the parameters input to the models, are described in detail in the WBN ODCM.

Liquid Release Points and River Data

Radioactivity concentrations in the Tennessee River are calculated assuming that releases in liquid effluents are continuous. All routine liquid releases from WBN, located at Tennessee River Mile 528.5, are made through diffusers which extend into the Tennessee River. It is assumed that releases to the river through these diffusers will initially be entrained in one-tenth of the water which flows past the plant. The QWATA code makes the assumption that this mixing condition holds true until the water is completely mixed at Tennessee River Mile 510.0.

Doses are calculated for locations within a 50 mile radius downstream of the plant site. The maximum potential recreation dose is calculated for a location immediately downstream from the plant outfall. The maximum individual dose from ingestion of fish is assumed to be that calculated for the consumption of fish caught anywhere between the plant and the first downstream dam (Chickamauga Dam). The maximum individual dose from drinking water is assumed to be that calculated at the nearest downstream public water supply (Dayton, TN). This could be interpreted as indicating that the maximum individual, as assumed for liquid releases from WBN, is an individual who obtains all of his drinking water at Dayton, TN, consumes fish caught from the Tennessee River between WBN and Chickamauga Dam, and spends 500 hours per year on the shoreline just below the outfall from WBN. Dose estimates for the maximum individual due to liquid effluents for each quarter in the period are presented in Tables 7A and 7B, along with the average river flows past the plant site for the periods.

Population Doses

Population doses for highest exposed organ due to airborne effluents are calculated for an estimated 1,066,600 persons living within a 50-mile radius of the plant site. Doses from external pathways and inhalation are based on the 50-mile human population distribution. Ingestion population doses are calculated assuming that each individual consumes milk, vegetables, and meat produced within the sector annulus in which he resides. Doses from external pathways and inhalation are based on the 50-mile human population distribution.

Population doses for total body and the maximum exposed organ due to liquid effluents are calculated for the entire downstream Tennessee River Population. Water ingestion population doses are calculated using actual population figures for downstream public water supplies.

Radiological Impact

Fish ingestion population doses are calculated assuming that all sport fish caught in the Tennessee River are consumed by the Tennessee River population. Recreation population doses are calculated using actual recreational data on the number of shoreline visits at downstream locations.

Population dose estimates for airborne and liquid effluents are presented in Tables 6A, 6B, 7A and 7B.

Direct Radiation

External gamma radiation levels were measured by Landauer InLight environmental dosimeters deployed around WBN as part of the offsite Environmental Radiological Monitoring Program. The quarterly gamma radiation levels determined from these dosimeters during this reporting period averaged 17.0 mR/quarter at onsite (at or near the site boundary) stations and 15.25 mR/quarter at offsite stations or 1.75 mR/quarter higher onsite than at offsite stations. This difference is consistent with levels measured for preoperation and construction phases of the WBN plant site where the average radiation levels onsite were generally 2-8 mR/quarter higher than the levels offsite. This may be attributable to natural variations in environmental radiation levels, earth moving activities onsite, the mass of concrete employed in the construction of the plants, or other undetermined influences. Fluctuations in natural background dose rates and in dosimeters readings tend to mask any small increments which may be due to plant operations. Thus, there was no identifiable increase in dose rate levels attributable to direct radiation from plant equipment and/or gaseous effluents.

Dose To A Member Of The Public Inside The Unrestricted Area Boundary

As stated in the WBN ODCM, an evaluation of the dose to a member of the public inside the unrestricted area boundary is performed for a hypothetical TVA employee who works just outside the restricted area boundary for an entire work year (2000 hours). Results from onsite quarterly dosimeter measurements indicated that the highest annual dosimeter reading outside Radiological Control Areas was 90 mrem. Using this value, subtracting an annual background value of approximately 68.0 mrem/year (see previous section), and multiplying by the ratio of the occupancy times (2000/8760), the highest external dose to a member of the public inside the unrestricted area boundary would be 5.02 mrem. The doses due to radioactive effluents released to the atmosphere calculated in this report would not add a significant amount to this measured dose. This dose is below the 10 CFR 20 annual limit of 100 mrem.

Total Dose

To determine compliance with 40 CFR 190, annual total dose contributions to the maximum individual from WBN radioactive effluents and all other nearby uranium fuel cycle sources are considered.

The annual dose to any organ other than thyroid for the maximum individual is conservatively estimated by summing the following doses: the total body air submersion dose for each quarter, the critical organ dose (for any organ other than the thyroid) from airborne effluents for each quarter from ground contamination, inhalation and ingestion, the total body dose from liquid effluents for each quarter, the maximum organ dose (for any organ other than the thyroid) from liquid effluents for each quarter, and any identifiable increase in direct radiation dose levels as measured by the environmental monitoring program. This dose is compared to the 40 CFR 190 limit for total body or any organ dose (other than thyroid) to determine compliance.

Radiological Impact

The annual thyroid dose to the maximum individual is conservatively estimated by summing the following doses: the total body air submersion dose for each quarter, the thyroid dose from airborne effluents for each quarter, the total body dose from liquid effluents for each quarter, the thyroid dose from liquid effluents for each quarter, and any identifiable increase in direct radiation dose levels as measured by the environmental monitoring program. This dose is compared to the 40 CFR 190 limit for thyroid dose to determine compliance. Cumulative annual total doses are presented in Table 8.

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TABLE 6-A
Doses from Airborne Effluents

First Quarter

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
External				
Gamma Air	1.90E-03 mrad	5 mrad	< 1%	E/1280 meters
Beta Air	7.62E-04 mrad	10 mrad	< 1%	E/1280 meters
Submersion				
Total Body	1.08E-03 mrem	N/A	N/A	SE/1409 meters
Skin	1.48E-03 mrem	N/A	N/A	SE/1409 meters
Organ Doses[1]				
(Max) Child/Bone	5.15E-01 mrem	7.5 mrem	6.87%	SE/1409 meters
Child/Thyroid	1.10E-01 mrem	7.5 mrem	1.47%	SE/1409 meters
Child/Total Body	1.10E-01 mrem	7.5 mrem	1.47%	SE/1409 meters

Population Doses
Total Body Dose 2.09E-01 man-rem
Maximum Organ Dose (organ) 9.31E-01 man-rem (bone)

Second Quarter

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
External				
Gamma Air	2.09E-02 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	7.63E-03 mrad	10 mrad	< 1%	ESE/1250 meters
Submersion				
Total Body	7.42E-03 mrem	N/A	N/A	SE/1409 meters
Skin	1.10E-02 mrem	N/A	N/A	SE/1409 meters
Organ Doses[1]				
(Max) Child/Bone	1.01E+00 mrem	7.5 mrem	13.46%	SE/1409 meters
Child/Thyroid	2.24E-01 mrem	7.5 mrem	2.99%	SE/1409 meters
Child/Total Body	2.24E-01 mrem	7.5 mrem	2.99%	SE/1409 meters

Population Doses
Total Body Dose 2.42E-01 man-rem
Maximum Organ Dose (organ) 1.01E+00 man-rem (bone)

Population doses can be compared to the natural background dose for the entire 50-mile population of about 150,000 man-rem/year (based on 140 mrem/yr for natural background).

[1]Organ Doses include contributions from Carbon 14 as carbon dioxide

TABLE 6-B
Doses from Airborne Effluents

Third Quarter

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
External				
Gamma Air	2.39E-02 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	8.78E-03 mrad	10 mrad	< 1%	ESE/1250 meters
Submersion				
Total Body	9.13E-03 mrem	N/A	N/A	SE/1409 meters
Skin	1.35E-02 mrem	N/A	N/A	SE/1409 meters
Organ Doses[1]				
(Max) Child/Bone	9.48E-01 mrem	7.5 mrem	12.64%	SE/1409 meters
Child/Thyroid	2.19E-01 mrem	7.5 mrem	2.92%	SE/1409 meters
Child/Total Body	2.19E-01 mrem	7.5 mrem	2.92%	SE/1409 meters

Population Doses
Total Body Dose 1.54E-01 man-rem
Maximum Organ Dose (organ) 6.24E-01 man-rem (bone)

Fourth Quarter

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
External				
Gamma Air	2.20E-03 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	7.94E-04 mrad	10 mrad	< 1%	ESE/1250 meters
Submersion				
Total Body	9.26E-04 mrem	N/A	N/A	SE/1409 meters
Skin	1.37E-03 mrem	N/A	N/A	SE/1409 meters
Organ Doses[1]				
Child/Bone	8.52E-01 mrem	7.5 mrem	11.7%	SE/1409 meters
Child/Thyroid	2.15E-01 mrem	7.5 mrem	2.87%	SE/1409 meters
Child/Total Body	2.15E-01 mrem	7.5 mrem	2.87%	SE/1409 meters

Population Doses
Total Body Dose 2.10E-01 man-rem
Maximum Organ Dose (organ) 7.14E-01 man-rem (bone)

Population doses can be compared to the natural background dose for the entire 50-mile population of about 150,000 man-rem/year (based on 140 mrem/yr for natural background).

[1]Organ Doses include contributions from Carbon 14 as carbon dioxide

TABLE 7-A
Doses from Liquid Effluents

First Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Adult	Total Body	3.50E-04	1.5 mrem	< 1 %
Child	Bone	4.40E-04	5 mrem	< 1 %
Child	Thyroid	1.90E-04	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 41,649

Population Doses

Total Body Dose 1.00E-02 man-rem
Maximum Organ Dose (organ) 1.00E-02 man-rem (bone)

Second Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	4.50E-03	1.5 mrem	< 1 %
Child	Bone	4.50E-3	5 mrem	< 1 %
Child	Thyroid	4.50E-03	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 10,041

Population Doses

Total Body Dose 2.90E-01 man-rem
Maximum Organ Dose (organ) 2.90E-01 man-rem (Bone)

Population doses can be compared to the natural background dose for the entire 50-mile population of about 150,000 man-rem/year (based on 140 mrem/yr for natural background).

TABLE 7-B
Doses from Liquid Effluents

Third Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	1.50E-02	1.5 mrem	< 1 %
Child	Bone	1.50E-02	5 mrem	< 1 %
Child	Thyroid	1.50E-02	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 19,611

Population Doses

Total Body Dose 9.70E-01 man-rem
Maximum Organ Dose (organ) 9.70E-01 man-rem (bone)

Fourth Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	5.20E-04	1.5 mrem	< 1 %
Child	Bone	5.90E-04	5 mrem	< 1 %
Child	Thyroid	5.10E-04	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 24,130

Population Doses

Total Body Dose 3.10E-02 man-rem
Maximum Organ Dose (organ) 3.10E-02 man-rem (bone)

Population doses can be compared to the natural background dose for the entire 50-mile population of about 150,000 man-rem/year (based on 140 mrem/yr for natural background).

2012
WATTS BAR NUCLEAR PLANT UNIT 1
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

TABLE 8
Total Dose from Fuel Cycle

Dose	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Total Body or any Organ (except thyroid)					
Total body air (submersion)	1.95E-04	6.39E-04	4.68E-03	4.90E-03	
Critical organ dose (airborne)	5.05E-01	4.11E-01	1.18E+00	1.24E+00	
Total body dose (liquid)	1.50E-03	1.90E-03	3.04E-04	7.80E-04	
Maximum organ dose (liquid)	1.50E-03	3.30E-03	3.04E-04	8.10E-04	
Direct Radiation Dose	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Total	**5.08E-01**	**4.17E-01**	**1.19E+00**	**1.25E+00**	
				Cumulative Total Dose (mrem)	**3.36E+00**
				Annual Dose Limit (mrem)	**25**
				Percent of Limit	**13.43%**
Thyroid					
Total body air (submersion)	1.95E-04	6.39E-04	4.68E-03	4.90E-03	
Thyroid dose (airborne)	1.05E-01	1.00E-01	2.77E-01	3.18E-01	
Total body dose (liquid)	1.50E-03	1.90E-03	3.04E-04	7.80E-04	
Thyroid dose (liquid)	1.50E-03	1.10E-03	2.90E-04	7.80E-04	
Total	**1.08E-01**	**1.04E-01**	**2.82E-01**	**3.24E-01**	
				Cumulative Total Dose (mrem)	**8.19E-01**
				Annual Dose Limit (mrem)	**75**
				Percent of Limit	**1.09%**

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS A (DELTA T<=-1.9 C/100 M)

WATTS BAR NUCLEAR PLANT

JAN 1, 2012 - MAR 31, 2012

DIRECTION	CALM	WIND SPEED(MPH) 0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.046	0.184	0.092	0.046	0.000	0.000	0.000	0.367
NNE	0.000	0.000	0.046	0.138	0.367	0.000	0.000	0.000	0.000	0.551
NE	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.092
ENE	0.000	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.046
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.000	0.000	0.092	0.092	0.000	0.000	0.000	0.184
SSW	0.000	0.000	0.000	0.046	0.276	0.230	0.000	0.000	0.000	0.551
SW	0.000	0.000	0.000	0.000	0.138	0.000	0.000	0.000	0.000	0.138
WSW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WNW	0.000	0.000	0.000	0.000	0.046	0.092	0.092	0.000	0.000	0.230
NW	0.000	0.000	0.000	0.046	0.000	0.092	0.000	0.000	0.000	0.138
NNW	0.000	0.000	0.000	0.092	0.138	0.230	0.000	0.000	0.000	0.459
SUBTOTAL	0.000	0.000	0.092	0.551	1.194	0.827	0.092	0.000	0.000	2.756

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2177
TOTAL HOURS OF STABILITY CLASS A	60
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	60
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2177
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL
DATE PRINTED: 2012/05/21
MEAN WIND SPEED = 6.95

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS B (-1.9< DELTA T<=-1.7 C/100 M)

WATTS BAR NUCLEAR PLANT

JAN 1, 2012 - MAR 31, 2012

DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.000	0.322	0.092	0.184	0.000	0.000	0.000	0.597
NNE	0.000	0.000	0.092	0.138	0.092	0.367	0.000	0.000	0.000	0.689
NE	0.000	0.000	0.000	0.184	0.000	0.046	0.000	0.000	0.000	0.230
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.046
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.046
S	0.000	0.000	0.000	0.000	0.230	0.138	0.000	0.000	0.000	0.367
SSW	0.000	0.000	0.000	0.092	0.322	0.276	0.000	0.000	0.000	0.689
SW	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.046
WSW	0.000	0.000	0.000	0.000	0.138	0.000	0.000	0.000	0.000	0.138
W	0.000	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.092
WNW	0.000	0.000	0.000	0.000	0.046	0.138	0.092	0.000	0.000	0.276
NW	0.000	0.000	0.000	0.000	0.184	0.138	0.092	0.000	0.000	0.413
NNW	0.000	0.000	0.000	0.000	0.092	0.046	0.046	0.000	0.000	0.184
SUBTOTAL	0.000	0.000	0.092	0.735	1.332	1.424	0.230	0.000	0.000	3.813

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2177
TOTAL HOURS OF STABILITY CLASS B	83
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	83
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2177
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL
DATE PRINTED: 2012/05/21
MEAN WIND SPEED = 7.60

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS C (-1.7< DELTA T<=-1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

JAN 1, 2012 - MAR 31, 2012

DIRECTION	CALM	WIND SPEED(MPH) 0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.000	0.092	0.138	0.046	0.000	0.000	0.000	0.276
NNE	0.000	0.000	0.230	0.046	0.092	0.184	0.000	0.000	0.000	0.551
NE	0.000	0.000	0.092	0.092	0.046	0.000	0.000	0.000	0.000	0.230
ENE	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.046
E	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.046
ESE	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.046
SE	0.000	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.046
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.000	0.322	0.138	0.092	0.000	0.000	0.000	0.551
SSW	0.000	0.000	0.000	0.781	0.413	0.046	0.046	0.000	0.000	1.286
SW	0.000	0.000	0.000	0.230	0.138	0.046	0.000	0.000	0.000	0.413
WSW	0.000	0.000	0.000	0.184	0.138	0.046	0.000	0.000	0.000	0.367
W	0.000	0.000	0.000	0.046	0.000	0.184	0.000	0.000	0.000	0.230
WNW	0.000	0.000	0.000	0.046	0.230	0.046	0.000	0.000	0.000	0.322
NW	0.000	0.000	0.000	0.092	0.138	0.092	0.092	0.000	0.000	0.413
NNW	0.000	0.000	0.046	0.046	0.046	0.000	0.092	0.000	0.000	0.230
SUBTOTAL	0.000	0.000	0.367	2.113	1.516	0.827	0.230	0.000	0.000	5.053

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2177
TOTAL HOURS OF STABILITY CLASS C	110
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	110
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2177
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL
DATE PRINTED: 2012/05/21
MEAN WIND SPEED = 6.35

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS D (-1.5< DELTA T<=-0.5 C/100 M)

WATTS BAR NUCLEAR PLANT

JAN 1, 2012 - MAR 31, 2012

DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.092	0.551	0.781	0.873	0.781	0.046	0.000	0.000	3.124
NNE	0.000	0.000	0.919	0.781	0.597	0.505	0.000	0.000	0.000	2.802
NE	0.000	0.000	0.367	0.551	0.046	0.092	0.000	0.000	0.000	1.056
ENE	0.000	0.046	0.413	0.138	0.000	0.000	0.000	0.000	0.000	0.597
E	0.000	0.184	0.322	0.046	0.092	0.000	0.000	0.000	0.000	0.643
ESE	0.000	0.138	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.276
SE	0.000	0.000	0.459	0.092	0.000	0.000	0.000	0.000	0.000	0.551
SSE	0.000	0.000	0.459	0.551	0.184	0.092	0.000	0.000	0.000	1.286
S	0.000	0.046	0.689	0.827	0.322	0.735	0.000	0.000	0.000	2.618
SSW	0.000	0.138	1.332	2.205	1.378	1.654	0.138	0.000	0.000	6.844
SW	0.000	0.000	1.011	1.332	0.276	0.046	0.000	0.000	0.000	2.664
WSW	0.000	0.276	0.367	0.643	0.184	0.413	0.000	0.000	0.000	1.883
W	0.000	0.000	0.459	0.230	0.230	0.597	0.000	0.000	0.000	1.516
WNW	0.000	0.000	0.276	0.138	0.551	0.551	0.046	0.000	0.000	1.562
NW	0.000	0.092	0.184	0.276	0.551	0.735	0.138	0.000	0.000	1.975
NNW	0.000	0.000	0.322	0.322	0.643	1.332	0.184	0.000	0.000	2.802
SUBTOTAL	0.000	1.011	8.268	8.911	5.926	7.533	0.551	0.000	0.000	32.200

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2177
TOTAL HOURS OF STABILITY CLASS D 701
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 701
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2177
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL
DATE PRINTED: 2012/05/21
MEAN WIND SPEED = 5.43

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS E (-0.5< DELTA T<= 1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

JAN 1, 2012 - MAR 31, 2012

DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.689	0.643	0.322	0.046	0.000	0.000	0.000	1.700
NNE	0.000	0.092	0.781	0.322	0.092	0.046	0.000	0.000	0.000	1.332
NE	0.000	0.092	0.459	0.505	0.046	0.000	0.000	0.000	0.000	1.102
ENE	0.000	0.092	0.459	0.000	0.000	0.000	0.000	0.000	0.000	0.551
E	0.000	0.138	0.459	0.000	0.000	0.000	0.000	0.000	0.000	0.597
ESE	0.000	0.322	0.276	0.000	0.000	0.000	0.000	0.000	0.000	0.597
SE	0.000	0.230	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.322
SSE	0.000	0.184	0.322	0.092	0.000	0.000	0.000	0.000	0.000	0.597
S	0.000	0.413	0.827	0.505	0.276	0.230	0.000	0.000	0.000	2.251
SSW	0.000	0.276	2.480	1.424	1.608	1.102	0.046	0.000	0.000	6.936
SW	0.000	0.322	2.159	0.367	0.230	0.046	0.000	0.000	0.000	3.124
WSW	0.000	0.551	0.735	0.184	0.184	0.000	0.000	0.000	0.000	1.654
W	0.000	0.689	0.781	0.138	0.230	0.046	0.000	0.000	0.000	1.883
WNW	0.000	0.184	0.781	0.184	0.138	0.138	0.000	0.000	0.000	1.424
NW	0.000	0.138	0.367	0.689	0.643	0.413	0.000	0.000	0.000	2.251
NNW	0.000	0.092	0.459	0.597	0.459	0.138	0.000	0.000	0.000	1.746
SUBTOTAL	0.000	3.813	12.081	5.696	4.226	2.205	0.046	0.000	0.000	28.066

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2177
TOTAL HOURS OF STABILITY CLASS E	611
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	611
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2177
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL
DATE PRINTED: 2012/05/21
MEAN WIND SPEED = 3.71

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS F (1.5< DELTA T<= 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

JAN 1, 2012 - MAR 31, 2012

DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.184	0.322	0.000	0.000	0.000	0.000	0.000	0.000	0.505
NNE	0.000	0.138	0.184	0.000	0.000	0.000	0.000	0.000	0.000	0.322
NE	0.000	0.092	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.184
ENE	0.000	0.230	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.322
E	0.000	0.322	0.230	0.000	0.000	0.000	0.000	0.000	0.000	0.551
ESE	0.000	0.184	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.184
SE	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.092
SSE	0.000	0.092	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.184
S	0.000	0.092	0.322	0.046	0.000	0.000	0.000	0.000	0.000	0.459
SSW	0.000	0.367	0.597	0.230	0.000	0.000	0.000	0.000	0.000	1.194
SW	0.000	0.459	1.148	0.000	0.000	0.000	0.000	0.000	0.000	1.608
WSW	0.000	0.965	0.827	0.046	0.000	0.000	0.000	0.000	0.000	1.837
W	0.000	0.597	0.597	0.046	0.000	0.000	0.000	0.000	0.000	1.240
WNW	0.000	1.056	0.919	0.000	0.000	0.000	0.000	0.000	0.000	1.975
NW	0.000	0.505	0.781	0.046	0.000	0.000	0.000	0.000	0.000	1.332
NNW	0.000	0.138	0.230	0.092	0.000	0.000	0.000	0.000	0.000	0.459
SUBTOTAL	0.000	5.512	6.431	0.505	0.000	0.000	0.000	0.000	0.000	12.448

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2177
TOTAL HOURS OF STABILITY CLASS F	271
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	271
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2177
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL
DATE PRINTED: 2012/05/21
MEAN WIND SPEED = 1.72

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS G (DELTA T > 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

JAN 1, 2012 - MAR 31, 2012

DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.001	0.276	0.184	0.000	0.000	0.000	0.000	0.000	0.000	0.461
NNE	0.001	0.230	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.276
NE	0.003	0.551	0.322	0.000	0.000	0.000	0.000	0.000	0.000	0.875
ENE	0.001	0.138	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.230
E	0.001	0.276	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.415
ESE	0.002	0.413	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.553
SE	0.001	0.322	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.415
SSE	0.001	0.230	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.276
S	0.002	0.551	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.645
SSW	0.002	0.689	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.829
SW	0.005	1.194	0.597	0.046	0.000	0.000	0.000	0.000	0.000	1.843
WSW	0.009	1.929	1.011	0.000	0.000	0.000	0.000	0.000	0.000	2.948
W	0.009	2.251	0.689	0.000	0.000	0.000	0.000	0.000	0.000	2.948
WNW	0.005	1.286	0.413	0.000	0.000	0.000	0.000	0.000	0.000	1.705
NW	0.002	0.413	0.367	0.000	0.000	0.000	0.000	0.000	0.000	0.783
NNW	0.001	0.322	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.461
SUBTOTAL	0.046	11.070	4.502	0.046	0.000	0.000	0.000	0.000	0.000	15.664

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2177
TOTAL HOURS OF STABILITY CLASS G 341
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G 341
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2177
TOTAL HOURS CALM 1

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL
DATE PRINTED: 2012/05/21
MEAN WIND SPEED = 1.30

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS A (DELTA T<=-1.9 C/100 M)

WATTS BAR NUCLEAR PLANT

APR 1, 2012 - JUN 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.046	0.550	0.642	0.550	0.000	0.000	0.000	1.788
NNE	0.000	0.000	0.046	0.917	0.596	0.413	0.000	0.000	0.000	1.972
NE	0.000	0.000	0.000	0.092	0.092	0.092	0.000	0.000	0.000	0.275
ENE	0.000	0.000	0.046	0.138	0.138	0.138	0.000	0.000	0.000	0.459
E	0.000	0.000	0.046	0.000	0.092	0.000	0.000	0.000	0.000	0.138
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.000	0.000	0.229	0.000	0.000	0.000	0.000	0.229
SSW	0.000	0.000	0.092	0.229	0.504	0.183	0.000	0.000	0.000	1.009
SW	0.000	0.000	0.000	0.275	0.092	0.000	0.000	0.000	0.000	0.367
WSW	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.092
W	0.000	0.000	0.046	0.000	0.092	0.000	0.000	0.000	0.000	0.138
WNW	0.000	0.000	0.000	0.092	0.092	0.046	0.000	0.000	0.000	0.229
NW	0.000	0.000	0.000	0.092	0.046	0.000	0.000	0.000	0.000	0.138
NNW	0.000	0.000	0.046	0.229	0.459	0.642	0.183	0.000	0.000	1.559
SUBTOTAL	0.000	0.000	0.413	2.659	3.072	2.063	0.183	0.000	0.000	8.391

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2181
TOTAL HOURS OF STABILITY CLASS A	183
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	183
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2181
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 6.41

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS B (-1.9< DELTA T<=-1.7 C/100 M)

WATTS BAR NUCLEAR PLANT

APR 1, 2012 - JUN 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.046	0.138	0.138	0.092	0.000	0.000	0.000	0.413
NNE	0.000	0.000	0.092	0.504	0.321	0.183	0.000	0.000	0.000	1.100
NE	0.000	0.000	0.046	0.138	0.000	0.183	0.000	0.000	0.000	0.367
ENE	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.092
E	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.046
SSE	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.046
S	0.000	0.000	0.000	0.092	0.138	0.092	0.000	0.000	0.000	0.321
SSW	0.000	0.000	0.000	0.825	0.504	0.138	0.000	0.000	0.000	1.467
SW	0.000	0.000	0.046	0.642	0.000	0.000	0.000	0.000	0.000	0.688
WSW	0.000	0.000	0.046	0.183	0.000	0.000	0.000	0.000	0.000	0.229
W	0.000	0.000	0.000	0.092	0.046	0.000	0.000	0.000	0.000	0.138
WNW	0.000	0.000	0.046	0.138	0.092	0.275	0.000	0.000	0.000	0.550
NW	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
NNW	0.000	0.000	0.046	0.183	0.046	0.138	0.000	0.000	0.000	0.413
SUBTOTAL	0.000	0.000	0.459	3.072	1.330	1.100	0.000	0.000	0.000	5.961

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2181
TOTAL HOURS OF STABILITY CLASS B	130
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	130
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2181
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 5.44

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS C (-1.7< DELTA T<=-1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

APR 1, 2012 - JUN 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.138	0.092	0.138	0.046	0.000	0.000	0.000	0.413
NNE	0.000	0.000	0.046	0.138	0.046	0.092	0.000	0.000	0.000	0.321
NE	0.000	0.000	0.092	0.321	0.000	0.000	0.000	0.000	0.000	0.413
ENE	0.000	0.000	0.183	0.275	0.046	0.000	0.000	0.000	0.000	0.504
E	0.000	0.000	0.046	0.138	0.000	0.000	0.000	0.000	0.000	0.183
ESE	0.000	0.000	0.046	0.092	0.000	0.000	0.000	0.000	0.000	0.138
SE	0.000	0.000	0.046	0.138	0.000	0.000	0.000	0.000	0.000	0.183
SSE	0.000	0.000	0.046	0.046	0.046	0.000	0.000	0.000	0.000	0.138
S	0.000	0.000	0.183	0.459	0.092	0.138	0.000	0.000	0.000	0.871
SSW	0.000	0.000	0.138	1.146	0.229	0.092	0.000	0.000	0.000	1.605
SW	0.000	0.000	0.504	0.688	0.046	0.000	0.000	0.000	0.000	1.238
WSW	0.000	0.000	0.183	0.183	0.000	0.000	0.000	0.000	0.000	0.367
W	0.000	0.000	0.000	0.138	0.000	0.000	0.000	0.000	0.000	0.138
WNW	0.000	0.000	0.046	0.092	0.138	0.229	0.000	0.000	0.000	0.504
NW	0.000	0.000	0.000	0.046	0.046	0.183	0.046	0.000	0.000	0.321
NNW	0.000	0.000	0.092	0.046	0.092	0.138	0.000	0.000	0.000	0.367
SUBTOTAL	0.000	0.000	1.788	4.035	0.917	0.917	0.046	0.000	0.000	7.703

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2181
TOTAL HOURS OF STABILITY CLASS C 168
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C 168
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2181
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 4.83

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS D (-1.5< DELTA T<=-0.5 C/100 M)

WATTS BAR NUCLEAR PLANT

APR 1, 2012 - JUN 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.046	0.275	0.779	0.688	0.459	0.000	0.000	0.000	2.247
NNE	0.000	0.000	0.367	0.459	0.275	0.550	0.000	0.000	0.000	1.651
NE	0.000	0.092	0.459	0.688	0.138	0.046	0.000	0.000	0.000	1.421
ENE	0.000	0.046	0.642	0.413	0.046	0.138	0.000	0.000	0.000	1.284
E	0.000	0.046	0.504	0.046	0.000	0.000	0.000	0.000	0.000	0.596
ESE	0.000	0.092	0.504	0.275	0.000	0.000	0.000	0.000	0.000	0.871
SE	0.000	0.000	0.275	0.138	0.046	0.000	0.000	0.000	0.000	0.459
SSE	0.000	0.046	0.917	0.321	0.000	0.000	0.000	0.000	0.000	1.284
S	0.000	0.183	1.376	1.421	0.550	0.138	0.000	0.000	0.000	3.668
SSW	0.000	0.229	1.559	0.917	0.642	0.275	0.000	0.000	0.000	3.622
SW	0.000	0.046	1.100	0.963	0.000	0.000	0.000	0.000	0.000	2.109
WSW	0.000	0.046	0.504	0.138	0.000	0.000	0.000	0.000	0.000	0.688
W	0.000	0.183	0.229	0.138	0.046	0.092	0.000	0.000	0.000	0.688
WNW	0.000	0.046	0.229	0.138	0.367	0.321	0.000	0.000	0.000	1.100
NW	0.000	0.046	0.275	0.183	0.183	0.229	0.046	0.000	0.000	0.963
NNW	0.000	0.000	0.138	0.459	0.459	0.550	0.000	0.000	0.000	1.605
SUBTOTAL	0.000	1.146	9.354	7.474	3.439	2.797	0.046	0.000	0.000	24.255

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2181
TOTAL HOURS OF STABILITY CLASS D 529
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 529
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2181
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 4.26

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS E (-0.5< DELTA T<= 1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

APR 1, 2012 - JUN 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.046	0.734	0.917	0.642	0.046	0.000	0.000	0.000	2.384
NNE	0.000	0.046	0.459	0.092	0.046	0.046	0.000	0.000	0.000	0.688
NE	0.000	0.046	0.321	0.138	0.046	0.000	0.000	0.000	0.000	0.550
ENE	0.000	0.138	0.459	0.183	0.000	0.000	0.000	0.000	0.000	0.779
E	0.000	0.046	0.596	0.138	0.000	0.000	0.000	0.000	0.000	0.779
ESE	0.000	0.046	0.183	0.000	0.000	0.000	0.000	0.000	0.000	0.229
SE	0.000	0.138	0.275	0.092	0.000	0.000	0.000	0.000	0.000	0.504
SSE	0.000	0.275	0.183	0.000	0.000	0.000	0.000	0.000	0.000	0.459
S	0.000	0.504	1.421	0.367	0.046	0.000	0.000	0.000	0.000	2.338
SSW	0.000	0.642	1.605	0.917	0.321	0.000	0.000	0.000	0.000	3.485
SW	0.000	0.688	1.146	0.046	0.000	0.000	0.000	0.000	0.000	1.880
WSW	0.000	0.550	0.550	0.138	0.046	0.000	0.000	0.000	0.000	1.284
W	0.000	0.504	0.596	0.275	0.000	0.000	0.000	0.000	0.000	1.376
WNW	0.000	0.367	0.229	0.183	0.092	0.000	0.000	0.000	0.000	0.871
NW	0.000	0.229	0.504	0.138	0.092	0.000	0.000	0.000	0.000	0.963
NNW	0.000	0.138	0.183	1.009	0.275	0.046	0.000	0.000	0.000	1.651
SUBTOTAL	0.000	4.402	9.445	4.631	1.605	0.138	0.000	0.000	0.000	20.220

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2181
TOTAL HOURS OF STABILITY CLASS E	441
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	441
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2181
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 2.88

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS F (1.5< DELTA T<= 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

APR 1, 2012 - JUN 30, 2012

WIND DIRECTION	CALM	WIND SPEED(MPH) 0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.001	0.092	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.185
NNE	0.000	0.046	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.092
NE	0.001	0.092	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.139
ENE	0.005	0.138	0.321	0.046	0.000	0.000	0.000	0.000	0.000	0.509
E	0.003	0.138	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.278
ESE	0.001	0.046	0.046	0.000	0.046	0.000	0.000	0.000	0.000	0.138
SE	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SSE	0.003	0.183	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.278
S	0.006	0.275	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.556
SSW	0.011	0.688	0.413	0.092	0.000	0.000	0.000	0.000	0.000	1.203
SW	0.015	0.688	0.779	0.000	0.000	0.000	0.000	0.000	0.000	1.482
WSW	0.027	1.696	1.009	0.046	0.000	0.000	0.000	0.000	0.000	2.778
W	0.028	1.696	1.055	0.046	0.000	0.000	0.000	0.000	0.000	2.825
WNW	0.023	1.926	0.321	0.046	0.000	0.000	0.000	0.000	0.000	2.315
NW	0.010	0.596	0.413	0.092	0.000	0.000	0.000	0.000	0.000	1.111
NNW	0.004	0.000	0.367	0.046	0.000	0.000	0.000	0.000	0.000	0.416
SUBTOTAL	0.138	8.299	5.365	0.504	0.046	0.000	0.000	0.000	0.000	14.351

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2181
TOTAL HOURS OF STABILITY CLASS F	313
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	313
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2181
TOTAL HOURS CALM	3

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 1.56

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS G (DELTA T > 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

APR 1, 2012 - JUN 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.001	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.093
NNE	0.003	0.183	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.278
NE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ENE	0.001	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
E	0.001	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
ESE	0.001	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.093
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.004	0.183	0.183	0.000	0.000	0.000	0.000	0.000	0.000	0.371
SSW	0.006	0.459	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.510
SW	0.014	0.871	0.275	0.000	0.000	0.000	0.000	0.000	0.000	1.160
WSW	0.042	2.155	1.330	0.000	0.000	0.000	0.000	0.000	0.000	3.527
W	0.062	3.576	1.559	0.000	0.000	0.000	0.000	0.000	0.000	5.198
WNW	0.056	3.439	1.192	0.046	0.000	0.000	0.000	0.000	0.000	4.733
NW	0.033	2.017	0.688	0.000	0.000	0.000	0.000	0.000	0.000	2.738
NNW	0.004	0.275	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.325
SUBTOTAL	0.229	13.343	5.502	0.046	0.000	0.000	0.000	0.000	0.000	19.120

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2181
TOTAL HOURS OF STABILITY CLASS G	417
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G	417
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2181
TOTAL HOURS CALM	5

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 1.27

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS A (DELTA T<=-1.9 C/100 M)

WATTS BAR NUCLEAR PLANT

JUL 1, 2012 - SEP 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.000	0.412	0.366	0.046	0.000	0.000	0.000	0.824
NNE	0.000	0.000	0.046	0.595	0.275	0.092	0.000	0.000	0.000	1.007
NE	0.000	0.000	0.046	0.229	0.183	0.000	0.000	0.000	0.000	0.458
ENE	0.000	0.000	0.046	0.000	0.046	0.000	0.000	0.000	0.000	0.092
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.092	0.092	0.092	0.000	0.000	0.000	0.000	0.275
SSW	0.000	0.000	0.046	0.549	0.549	0.000	0.000	0.000	0.000	1.144
SW	0.000	0.000	0.046	0.595	0.092	0.000	0.000	0.000	0.000	0.732
WSW	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.092
W	0.000	0.000	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.137
WNW	0.000	0.000	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.137
NW	0.000	0.000	0.000	0.092	0.000	0.046	0.000	0.000	0.000	0.137
NNW	0.000	0.000	0.000	0.275	0.183	0.046	0.000	0.000	0.000	0.503
SUBTOTAL	0.000	0.000	0.366	3.158	1.785	0.229	0.000	0.000	0.000	5.538

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2185
TOTAL HOURS OF STABILITY CLASS A	121
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	121
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2185
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 5.13

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS B (-1.9< DELTA T<=-1.7 C/100 M)

WATTS BAR NUCLEAR PLANT

JUL 1, 2012 - SEP 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.000	0.183	0.183	0.000	0.000	0.000	0.000	0.366
NNE	0.000	0.000	0.092	0.320	0.275	0.046	0.000	0.000	0.000	0.732
NE	0.000	0.000	0.046	0.275	0.046	0.000	0.000	0.000	0.000	0.366
ENE	0.000	0.000	0.046	0.137	0.046	0.000	0.000	0.000	0.000	0.229
E	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.046
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.092
SSE	0.000	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.092
S	0.000	0.000	0.046	0.137	0.183	0.000	0.000	0.000	0.000	0.366
SSW	0.000	0.000	0.046	0.732	0.229	0.000	0.000	0.000	0.000	1.007
SW	0.000	0.000	0.000	0.503	0.000	0.000	0.000	0.000	0.000	0.503
WSW	0.000	0.000	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.137
W	0.000	0.000	0.046	0.137	0.046	0.000	0.000	0.000	0.000	0.229
WNW	0.000	0.000	0.000	0.137	0.137	0.000	0.000	0.000	0.000	0.275
NW	0.000	0.000	0.046	0.000	0.183	0.046	0.000	0.000	0.000	0.275
NNW	0.000	0.000	0.000	0.137	0.000	0.000	0.000	0.000	0.000	0.137
SUBTOTAL	0.000	0.000	0.366	3.066	1.327	0.092	0.000	0.000	0.000	4.851

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2185
TOTAL HOURS OF STABILITY CLASS B	106
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	106
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2185
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 4.88

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS C (-1.7< DELTA T<=-1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

JUL 1, 2012 - SEP 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.092	0.275	0.046	0.000	0.000	0.000	0.000	0.412
NNE	0.000	0.000	0.092	0.183	0.137	0.000	0.000	0.000	0.000	0.412
NE	0.000	0.000	0.366	0.275	0.000	0.000	0.000	0.000	0.000	0.641
ENE	0.000	0.000	0.366	0.183	0.000	0.000	0.000	0.000	0.000	0.549
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.092
SE	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.092
SSE	0.000	0.000	0.046	0.183	0.000	0.000	0.000	0.000	0.000	0.229
S	0.000	0.000	0.000	0.320	0.000	0.000	0.000	0.000	0.000	0.320
SSW	0.000	0.000	0.137	0.870	0.229	0.000	0.000	0.000	0.000	1.236
SW	0.000	0.000	0.275	0.641	0.000	0.000	0.000	0.000	0.000	0.915
WSW	0.000	0.000	0.046	0.183	0.000	0.000	0.000	0.000	0.000	0.229
W	0.000	0.000	0.092	0.320	0.000	0.000	0.000	0.000	0.000	0.412
WNW	0.000	0.000	0.046	0.183	0.092	0.092	0.000	0.000	0.000	0.412
NW	0.000	0.000	0.183	0.137	0.092	0.046	0.000	0.000	0.000	0.458
NNW	0.000	0.000	0.092	0.092	0.046	0.000	0.000	0.000	0.000	0.229
SUBTOTAL	0.000	0.000	1.876	3.982	0.641	0.137	0.000	0.000	0.000	6.636

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2185
TOTAL HOURS OF STABILITY CLASS C	145
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	145
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2185
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 4.22

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS D (-1.5< DELTA T<=-0.5 C/100 M)

WATTS BAR NUCLEAR PLANT

JUL 1, 2012 - SEP 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.366	0.366	0.137	0.000	0.000	0.000	0.000	0.870
NNE	0.000	0.000	0.275	0.458	0.046	0.046	0.000	0.000	0.000	0.824
NE	0.000	0.000	0.641	0.549	0.092	0.046	0.046	0.000	0.000	1.373
ENE	0.000	0.000	1.007	0.595	0.275	0.046	0.000	0.000	0.000	1.922
E	0.000	0.046	1.190	0.412	0.092	0.000	0.000	0.000	0.000	1.739
ESE	0.000	0.000	0.732	0.092	0.046	0.000	0.000	0.000	0.000	0.870
SE	0.000	0.137	1.007	0.320	0.046	0.000	0.000	0.000	0.000	1.510
SSE	0.000	0.183	1.190	0.092	0.092	0.000	0.000	0.000	0.000	1.556
S	0.000	0.137	1.144	1.510	0.229	0.000	0.000	0.000	0.000	3.021
SSW	0.000	0.366	2.426	2.197	0.320	0.000	0.000	0.000	0.000	5.309
SW	0.000	0.229	1.281	0.961	0.000	0.000	0.000	0.000	0.000	2.471
WSW	0.000	0.183	1.053	0.320	0.000	0.000	0.000	0.000	0.000	1.556
W	0.000	0.183	0.549	0.183	0.000	0.000	0.000	0.000	0.000	0.915
WNW	0.000	0.092	0.595	0.183	0.137	0.046	0.000	0.000	0.000	1.053
NW	0.000	0.092	0.275	0.046	0.183	0.229	0.000	0.000	0.000	0.824
NNW	0.000	0.046	0.320	0.229	0.137	0.046	0.000	0.000	0.000	0.778
SUBTOTAL	0.000	1.693	14.050	8.513	1.831	0.458	0.046	0.000	0.000	26.590

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2185
TOTAL HOURS OF STABILITY CLASS D 581
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 581
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2185
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 3.40

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS E (-0.5< DELTA T<= 1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

JUL 1, 2012 - SEP 30, 2012

WIND DIRECTION	CALM	WIND SPEED(MPH) 0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.002	0.137	0.229	0.595	0.046	0.092	0.000	0.000	0.000	1.101
NNE	0.002	0.137	0.183	0.183	0.046	0.092	0.000	0.000	0.000	0.643
NE	0.004	0.000	0.641	0.320	0.092	0.046	0.000	0.000	0.000	1.102
ENE	0.004	0.092	0.549	0.229	0.046	0.000	0.000	0.000	0.000	0.919
E	0.003	0.137	0.412	0.092	0.046	0.000	0.000	0.000	0.000	0.690
ESE	0.002	0.137	0.229	0.092	0.000	0.000	0.000	0.000	0.000	0.460
SE	0.004	0.412	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.691
SSE	0.004	0.320	0.320	0.046	0.000	0.000	0.000	0.000	0.000	0.690
S	0.011	0.320	1.419	0.092	0.046	0.000	0.000	0.000	0.000	1.887
SSW	0.022	0.641	2.929	0.503	0.092	0.000	0.000	0.000	0.000	4.187
SW	0.017	0.915	1.876	0.229	0.046	0.000	0.000	0.000	0.000	3.084
WSW	0.015	1.098	1.327	0.046	0.000	0.000	0.000	0.000	0.000	2.486
W	0.018	1.556	1.281	0.275	0.000	0.000	0.000	0.000	0.000	3.130
WNW	0.015	1.465	0.870	0.183	0.092	0.046	0.000	0.000	0.000	2.669
NW	0.010	0.595	0.961	0.229	0.046	0.000	0.000	0.000	0.000	1.840
NNW	0.004	0.137	0.458	0.503	0.229	0.092	0.000	0.000	0.000	1.422
SUBTOTAL	0.137	8.101	13.959	3.616	0.824	0.366	0.000	0.000	0.000	27.002

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2185
TOTAL HOURS OF STABILITY CLASS E 590
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E 590
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2185
TOTAL HOURS CALM 3

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 2.39

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS F (1.5< DELTA T<= 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

JUL 1, 2012 - SEP 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.046	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.275
NNE	0.000	0.000	0.092	0.046	0.000	0.000	0.000	0.000	0.000	0.137
NE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ENE	0.000	0.092	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.183
E	0.000	0.046	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.183
ESE	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
S	0.000	0.046	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.275
SSW	0.000	0.549	0.641	0.000	0.000	0.000	0.000	0.000	0.000	1.190
SW	0.000	0.503	0.824	0.000	0.000	0.000	0.000	0.000	0.000	1.327
WSW	0.000	1.465	1.327	0.000	0.000	0.000	0.000	0.000	0.000	2.792
W	0.000	2.197	1.373	0.000	0.046	0.000	0.000	0.000	0.000	3.616
WNW	0.000	3.021	1.831	0.000	0.000	0.000	0.000	0.000	0.000	4.851
NW	0.000	1.922	0.961	0.046	0.000	0.000	0.000	0.000	0.000	2.929
NNW	0.000	0.092	0.458	0.092	0.000	0.000	0.000	0.000	0.000	0.641
SUBTOTAL	0.000	10.023	8.238	0.183	0.046	0.000	0.000	0.000	0.000	18.490

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2185
TOTAL HOURS OF STABILITY CLASS F 404
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F 404
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2185
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 1.53

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS G (DELTA T > 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

JUL 1, 2012 - SEP 30, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
NNE	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.092
NE	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSW	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.092
SW	0.000	0.137	0.503	0.000	0.000	0.000	0.000	0.000	0.000	0.641
WSW	0.000	0.595	0.366	0.000	0.000	0.000	0.000	0.000	0.000	0.961
W	0.000	1.602	0.686	0.000	0.000	0.000	0.000	0.000	0.000	2.288
WNW	0.000	2.517	1.510	0.000	0.000	0.000	0.000	0.000	0.000	4.027
NW	0.000	1.465	0.824	0.000	0.000	0.000	0.000	0.000	0.000	2.288
NNW	0.000	0.229	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.366
SUBTOTAL	0.000	6.773	4.119	0.000	0.000	0.000	0.000	0.000	0.000	10.892

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2185
TOTAL HOURS OF STABILITY CLASS G 238
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G 238
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2185
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 1.37

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS A (DELTA T<=-1.9 C/100 M)

WATTS BAR NUCLEAR PLANT

OCT 1, 2012 - DEC 31, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.136	0.136	0.182	0.045	0.000	0.000	0.000	0.499
NNE	0.000	0.000	0.272	0.454	0.363	0.182	0.000	0.000	0.000	1.271
NE	0.000	0.000	0.182	0.182	0.091	0.045	0.000	0.000	0.000	0.499
ENE	0.000	0.000	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.182
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.045
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.000	0.000	0.000	0.091	0.000	0.000	0.000	0.091
SSW	0.000	0.000	0.045	0.091	0.227	0.000	0.000	0.000	0.000	0.363
SW	0.000	0.000	0.136	0.045	0.182	0.000	0.000	0.000	0.000	0.363
WSW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W	0.000	0.000	0.000	0.000	0.091	0.091	0.000	0.000	0.000	0.182
WNW	0.000	0.000	0.000	0.000	0.227	0.227	0.000	0.000	0.000	0.454
NW	0.000	0.000	0.000	0.045	0.045	0.182	0.000	0.000	0.000	0.272
NNW	0.000	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.045
SUBTOTAL	0.000	0.000	0.999	0.953	1.453	0.862	0.000	0.000	0.000	4.267

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2203
TOTAL HOURS OF STABILITY CLASS A 94
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A 94
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2203
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 5.72

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS B (-1.9< DELTA T<=-1.7 C/100 M)

WATTS BAR NUCLEAR PLANT

OCT 1, 2012 - DEC 31, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.000	0.045	0.136	0.045	0.000	0.000	0.000	0.227
NNE	0.000	0.000	0.045	0.227	0.272	0.091	0.000	0.000	0.000	0.635
NE	0.000	0.000	0.136	0.136	0.000	0.045	0.000	0.000	0.000	0.318
ENE	0.000	0.000	0.045	0.091	0.000	0.000	0.000	0.000	0.000	0.136
E	0.000	0.000	0.091	0.045	0.000	0.000	0.000	0.000	0.000	0.136
ESE	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.045
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.045
SSW	0.000	0.000	0.000	0.091	0.227	0.091	0.000	0.000	0.000	0.409
SW	0.000	0.000	0.000	0.136	0.000	0.000	0.000	0.000	0.000	0.136
WSW	0.000	0.000	0.000	0.091	0.000	0.000	0.000	0.000	0.000	0.091
W	0.000	0.000	0.000	0.045	0.000	0.136	0.000	0.000	0.000	0.182
WNW	0.000	0.000	0.000	0.000	0.136	0.045	0.000	0.000	0.000	0.182
NW	0.000	0.000	0.000	0.000	0.045	0.045	0.000	0.000	0.000	0.091
NNW	0.000	0.000	0.045	0.000	0.091	0.182	0.000	0.000	0.000	0.318
SUBTOTAL	0.000	0.000	0.363	0.999	0.908	0.681	0.000	0.000	0.000	2.951

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2203
TOTAL HOURS OF STABILITY CLASS B 65
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B 65
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2203
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 5.95

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS C (-1.7< DELTA T<=-1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

OCT 1, 2012 - DEC 31, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.000	0.045	0.091	0.045	0.000	0.000	0.000	0.182
NNE	0.000	0.000	0.091	0.045	0.091	0.182	0.000	0.000	0.000	0.409
NE	0.000	0.000	0.091	0.045	0.000	0.000	0.000	0.000	0.000	0.136
ENE	0.000	0.000	0.136	0.045	0.000	0.000	0.000	0.000	0.000	0.182
E	0.000	0.000	0.091	0.045	0.000	0.000	0.000	0.000	0.000	0.136
ESE	0.000	0.000	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.091
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.045
S	0.000	0.000	0.045	0.182	0.091	0.091	0.000	0.000	0.000	0.409
SSW	0.000	0.000	0.000	0.272	0.091	0.045	0.000	0.000	0.000	0.409
SW	0.000	0.000	0.091	0.499	0.000	0.000	0.000	0.000	0.000	0.590
WSW	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.045
W	0.000	0.000	0.000	0.136	0.045	0.000	0.000	0.000	0.000	0.182
WNW	0.000	0.000	0.000	0.045	0.182	0.091	0.045	0.000	0.000	0.363
NW	0.000	0.000	0.000	0.000	0.045	0.045	0.000	0.000	0.000	0.091
NNW	0.000	0.000	0.045	0.000	0.045	0.000	0.000	0.000	0.000	0.091
SUBTOTAL	0.000	0.000	0.681	1.453	0.681	0.499	0.045	0.000	0.000	3.359

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2203
TOTAL HOURS OF STABILITY CLASS C 74
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C 74
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2203
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 5.29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS D (-1.5< DELTA T<=-0.5 C/100 M)

WATTS BAR NUCLEAR PLANT

OCT 1, 2012 - DEC 31, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.000	0.363	0.681	1.180	0.999	0.000	0.000	0.000	3.223
NNE	0.000	0.045	0.409	0.635	0.681	0.272	0.000	0.000	0.000	2.043
NE	0.000	0.045	0.953	0.817	0.409	0.136	0.000	0.000	0.000	2.360
ENE	0.000	0.045	1.271	0.681	0.227	0.045	0.000	0.000	0.000	2.270
E	0.000	0.136	0.499	0.045	0.045	0.000	0.000	0.000	0.000	0.726
ESE	0.000	0.136	0.318	0.000	0.000	0.000	0.000	0.000	0.000	0.454
SE	0.000	0.045	0.227	0.000	0.000	0.000	0.000	0.000	0.000	0.272
SSE	0.000	0.091	0.681	0.136	0.000	0.000	0.000	0.000	0.000	0.908
S	0.000	0.045	1.089	0.545	1.089	0.409	0.000	0.000	0.000	3.177
SSW	0.000	0.272	1.589	1.589	1.044	0.227	0.000	0.000	0.000	4.721
SW	0.000	0.045	1.089	0.908	0.136	0.091	0.000	0.000	0.000	2.270
WSW	0.000	0.091	0.817	0.227	0.000	0.318	0.000	0.000	0.000	1.453
W	0.000	0.091	0.499	0.272	0.136	0.681	0.000	0.000	0.000	1.680
WNW	0.000	0.136	0.454	0.318	0.454	0.635	0.045	0.000	0.000	2.043
NW	0.000	0.000	0.499	0.318	0.454	0.862	0.000	0.000	0.000	2.133
NNW	0.000	0.091	0.182	0.454	0.953	1.271	0.000	0.000	0.000	2.951
SUBTOTAL	0.000	1.316	10.940	7.626	6.809	5.946	0.045	0.000	0.000	32.683

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2203
TOTAL HOURS OF STABILITY CLASS D	720
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D	720
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2203
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 4.89

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS E (-0.5< DELTA T<= 1.5 C/100 M)

WATTS BAR NUCLEAR PLANT

OCT 1, 2012 - DEC 31, 2012

WIND DIRECTION	CALM	WIND SPEED(MPH) 0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.182	0.318	0.454	0.272	0.000	0.000	0.000	0.000	1.226
NNE	0.000	0.091	0.318	0.318	0.318	0.000	0.000	0.000	0.000	1.044
NE	0.000	0.136	0.545	0.409	0.091	0.136	0.000	0.000	0.000	1.316
ENE	0.000	0.136	0.363	0.227	0.000	0.091	0.000	0.000	0.000	0.817
E	0.000	0.091	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.272
ESE	0.000	0.091	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.272
SE	0.000	0.045	0.045	0.091	0.045	0.000	0.000	0.000	0.000	0.227
SSE	0.000	0.227	0.182	0.045	0.045	0.000	0.000	0.000	0.000	0.499
S	0.000	0.318	0.908	0.545	0.272	0.000	0.000	0.000	0.000	2.043
SSW	0.000	0.454	1.816	1.407	0.635	0.091	0.000	0.000	0.000	4.403
SW	0.000	0.681	1.089	0.272	0.091	0.045	0.000	0.000	0.000	2.179
WSW	0.000	0.862	1.044	0.136	0.000	0.136	0.000	0.000	0.000	2.179
W	0.000	0.409	0.862	0.363	0.136	0.000	0.000	0.000	0.000	1.770
WNW	0.000	0.681	0.726	0.363	0.409	0.045	0.000	0.000	0.000	2.224
NW	0.000	0.545	0.908	0.590	0.227	0.227	0.000	0.000	0.000	2.497
NNW	0.000	0.045	0.363	0.545	0.590	0.091	0.000	0.000	0.000	1.634
SUBTOTAL	0.000	4.993	9.850	5.765	3.132	0.862	0.000	0.000	0.000	24.603

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2203
TOTAL HOURS OF STABILITY CLASS E 542
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E 542
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2203
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 3.31

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS F (1.5< DELTA T<= 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

OCT 1, 2012 - DEC 31, 2012

WIND DIRECTION	CALM	WIND SPEED(MPH) 0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.000	0.091	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.272
NNE	0.000	0.136	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.272
NE	0.000	0.045	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.227
ENE	0.000	0.091	0.272	0.000	0.000	0.000	0.000	0.000	0.000	0.363
E	0.000	0.045	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.136
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.091
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.136
SSW	0.000	0.182	0.545	0.045	0.000	0.045	0.000	0.000	0.000	0.817
SW	0.000	0.409	0.635	0.000	0.000	0.000	0.000	0.000	0.000	1.044
WSW	0.000	0.953	0.272	0.045	0.000	0.000	0.000	0.000	0.000	1.271
W	0.000	1.543	1.180	0.045	0.000	0.000	0.000	0.000	0.000	2.769
WNW	0.000	2.406	0.953	0.000	0.000	0.000	0.000	0.000	0.000	3.359
NW	0.000	1.498	1.135	0.091	0.000	0.000	0.000	0.000	0.000	2.724
NNW	0.000	0.409	0.227	0.045	0.000	0.000	0.000	0.000	0.000	0.681
SUBTOTAL	0.000	7.898	5.946	0.272	0.000	0.045	0.000	0.000	0.000	14.163

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2203
TOTAL HOURS OF STABILITY CLASS F	312
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	312
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2203
TOTAL HOURS CALM	0

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 1.53

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

STABILITY CLASS G (DELTA T > 4.0 C/100 M)

WATTS BAR NUCLEAR PLANT

OCT 1, 2012 - DEC 31, 2012

WIND DIRECTION	WIND SPEED(MPH) CALM	0.6-1.4	1.5-3.4	3.5-5.4	5.5-7.4	7.5-12.4	12.5-18.4	18.5-24.4	>=24.5	TOTAL
N	0.005	0.545	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.595
NNE	0.002	0.182	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.229
NE	0.002	0.136	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.274
ENE	0.003	0.227	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.366
E	0.002	0.272	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.320
ESE	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SE	0.001	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.183
SSE	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
S	0.001	0.136	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.183
SSW	0.006	0.545	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.732
SW	0.006	0.590	0.227	0.000	0.000	0.000	0.000	0.000	0.000	0.823
WSW	0.016	1.725	0.363	0.000	0.000	0.000	0.000	0.000	0.000	2.104
W	0.034	3.450	0.999	0.000	0.000	0.000	0.000	0.000	0.000	4.483
WNW	0.032	3.223	0.908	0.000	0.000	0.000	0.000	0.000	0.000	4.162
NW	0.018	1.634	0.726	0.045	0.000	0.000	0.000	0.000	0.000	2.424
NNW	0.008	0.681	0.318	0.000	0.000	0.000	0.000	0.000	0.000	1.006
SUBTOTAL	0.136	13.618	4.176	0.045	0.000	0.000	0.000	0.000	0.000	17.975

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2203
TOTAL HOURS OF STABILITY CLASS G 396
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G 396
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2203
TOTAL HOURS CALM 3

METEOROLOGICAL FACILITY: WATTS BAR NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

MEAN WIND SPEED = 1.20

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2012
WATTS BAR NUCLEAR PLANT UNIT 1
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

ATTACHMENT 1

Deviations from ODCM Controls/Surveillance Requirements

None

ATTACHMENT 2

Radioactive Effluent Monitoring Instrumentation Inoperable for Greater than 30 days

None