Enclosure 1

Watts Bar Nuclear Plant

2008 Annual Radioactive Effluent Release Report

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

SUPPLEMENTAL INFORMATION

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's 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 Offsite Dose Calculation Manual (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 activity concentrations are determined on each Radwaste and Condensate Demineralizer 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 tritium and 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 Condensate Demineralizer Tank releases and the feedwater tritium concentration is used to determine the curies of tritium released from Condensate Demineralizer Tank.

Continuous Releases (Turbine Building Sump, Steam Generator Blowdown, and Groundwater Sump)

During periods of no significant identified primary to secondary leakage, the volume released from the TBS and SGB is obtained. The TBS tritium concentration is determined via weekly grab samples. The feedwater tritium concentration is used to determine the curies of tritium released from SGB. The Groundwater Sump is sampled monthly and analyzed for gross gamma and tritium on a monthly basis and Sr-89, and Sr-90 quarterly. 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 DOE tritium production program site preparation activity in December 2002. This study involved pressure testing of the radwaste discharge line, evaporation calculations of the SFP and RWST, installation and sampling of groundwater wells, inspection of drain lines, boroscopic investigation of the SFP, and FTC leak collection system channels and drains. In addition to the Six (6) REMP on-site groundwater monitoring wells Watts Bar Nuclear Plant also has 37 non-REMP monitoring wells to support monitoring the onsite groundwater plume and for the presence or increase of radioactivity. These wells are sampled periodically for tritium and continue to exhibit a downward trend. The tritium concentrations obtained in 2008 from these non-REMP monitoring wells are listed below. Well samples analyzed for Sr-89, Sr-90, Fe-55, and Ni-63 were all non-detectable.

Well ID	05/13/2008 Activity pCi/L	11/06/2008 Activity pCi/L
F	1,422	1,794
H	2,008	Dry
I	<270	662
J	<270	532
K	41,873	23,663
L	14.559	9,619
R	3,604	2,330
S	607	595

Onsite Radioactive Spills or Leaks

There were no onsite radioactive spills or leaks.

Doses from I-131 Water Ingestion Pathway

The radiological environmental monitoring program (REMP) requirements as 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. In order 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 here 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	4.76E-05	0	8.21E-05	0	1.29E-04
Child/Thyroid (mrem)	4.6E-05	0	1.0E-4	0	1.46E-04
Population/Thyroid (mrem)	2.3E-04	0	3.8E-04	0	6.1E-04

SUPPLEMENTAL INFORMATION

B. 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 only required 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 3).

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 determined 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 only required if DEI concentration in the primary coolant or the noble gas activity monitor shows that the containment activity has increased more than a factor of 3).

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.

C. Iodines and Particulates in Gaseous Releases

Iodine and particulate activity is continuously sampled. Weekly charcoal and particulate samples are taken from the shield building exhaust and auxiliary building exhausts and from condenser vacuum exhaust during periods of primary to secondary leak. 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, particulate and charcoal samples are taken from the shield building exhausts, auxiliary building exhaust, and condenser vacuum exhaust when a primary to secondary leak exist 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 3).

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5. Batch Releases

	Value 1st Half	Value 2nd Half	Units
A. Liquid (Radwaste only)			
1. Number of releases	89	74	Each
2. Total time period of releases	12474	8733	Minutes
3. Maximum time period of release	297	175	Minutes
4. Average time period of releases	140	118	Minutes
5. Minimum time period for release	3	70	Minutes
6. Average dilution stream flow during release periods	13,384	14,455	CFS
B. Gaseous (Batches only - containment purges, and waste gas decay tanks)			
1. Number of releases	27	9	Each
2. Total time period of releases	53260	5930	Minutes
3. Maximum time period for release	46302	3611	Minutes
4. Average time period for releases	1973	659	Minutes
5. Minimum time period for release	10	6	Minutes

6. Abnormal Releases

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

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Liquid Abnormal Releases

Release Type: Liquid

Release Point: Auxiliary Boiler B

Start Date/Time of Release: 2/10/2008 08:50 and 3/21/2008 10:30

An evaluation of the possible sources of tritium in the Auxiliary Boiler B was performed. The most likely sources are the make-up water from the CST's, error in laboratory analysis, or some type of interference. The make-up water supply for the Auxiliary Boiler B was from the Condensate Storage Tanks at the time tritium was detected in Auxiliary Boiler B. The tritium concentration in the CST's was < 3.946E-07 μCi/ml. The tritium concentration in the condensate at the time of the analysis was 1.397E-06 μCi/ml. Neither of these concentrations would account for the tritium concentration of 1.55E-05 μCi/ml identified in Auxiliary Boiler B. Since the source is not from the make-up water to the Auxiliary Boiler it is therefore believed that the concentration of hydrazine and ammonia in the Auxiliary Boiler may be causing interference. To verify this, a sample was taken from the Auxiliary Boiler and analyzed for tritium. A second aliquot was taken from the same sample and processed through a cation column and then analyzed for tritium. The tritium concentration from the sample without treatment was 2.78E-05 μCi/ml and the sample that was analyzed using a cation column contained <3.65E-07 μCi/ml tritium. Therefore, the tritium values obtained from 2/10/2008 to 3/21/2008 are from chemical interference and not tritium. No gamma emitting nuclides were identified in any of the Auxiliary Boiler samples. This evaluation documents in accordance with IE 80-10 that with the tritium identified in Auxiliary Boiler B was not real and that there was no increase dose to the public.

Gaseous Abnormal Releases

Release Point: U2 Shield Building Vent

Start Date/Time of Release: 02/23/2008 02:52

Description: ABI/CVI Actuation

An operator conducted a pre job brief with a nuclear assistant unit operator for the performance of SOI-90.02, "Gaseous Process Radiation Monitors," Section 5.10.3, "Align Monitors for use with "B" Purge Fans," which is directed from SOI-30.02, "Containment Purge System," Section 7.4 step 4, "Shutdown Cntmt Purge Including Annulus (Train A Purge Fan)". The control room operator made an incorrect assumption on step 1 of SOI-90.02, Section 5.10.3, to ensure Section 5.10.1 is complete. The operator assumed this section, 5.10.1, was previously performed since the rad monitors were presently in service and that Section 5.10.1, "Block and Align Power to Monitors" did not need to be performed. The control room operator signed this step off without verifying all steps within Section 5.10.1 had been performed. The nuclear assistant unit operator continued on with the remaining steps of Section 5.10.3 as directed by the control room operator. When the nuclear assistant unit operator started the alignment for the rad monitors, a spike occurred on 1-RM-90-131 causing an actuation of "B" Train CVI/ABI.The isolation signal was generated due to an improper block of the rad monitors during the realignment of Cntmt Vent Rad Monitors in accordance with SOI-90.02.

Chemistry was notified and a noble grab sample of ABGTS B from Unit 2 Shield Building Vent was obtained and analyzed. No activity was detected. This evaluation documents that as a result of the CVI there was no increase dose to the public.

Gaseous Abnormal Releases

Release Point: U1 PORV

Start Date/Time of Release: 02/22/2008 02:52

Description: PORV

There was an unplanned release from the Steam Generator PORV's between 2/22/2008 and 3/25/2008 when the PORV's where intermittently opened during startup for U1C9. The water source for the Steam Generators during periods when the PORV's were open was the CST A. The CST A sample results showed no gamma activity or tritium. Therefore, there was no increase dose to the public.

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TABLE 1-A

Liquid Effluents - Summation of All Releases
During the period
Starting: 1-Jan-2008 Ending: 30-Jun-2008

Type Of Effluent	Units	Quarter 1	Quarter 2	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release (Not Including Tritium, Gases, Alpha)	Ci	2.88E-02	9.14E-03	25%
2. Average Diluted Concentration During Period	µCi/ml	2.54E-09	8.17E-10	
3. Percent Of Applicable Limit	%	*	*	
B. Tritium				
1. Total Release	Ci	1.11E+03	4.82E+01	18%
2. Average Diluted Concentration During Period	µCi/ml	9.79E-05	4.31E-06	
3. Percent Of Applicable Limit	%	*	*	
C. Dissolved And Entrained Gases				
1. Total Release	Ci	6.75E-01	7.19E-04	39%
2. Average Diluted Concentration During Period	µCi/ml	5.95E-08	6.43E-11	
3. Percent Of Applicable Limit	%	2.98E-02	3.21E-05	
D. Gross Alpha Radioactivity				
1. Total Release	Curies	0.000E+00**	0.000E+00	N/A***
E. Total Waste Volume Released (Pre-Dilution)	Liters	1.14E+08	1.50E+08	2%
F. Volume Of Dilution Water Used	Liters	1.12E+10	1.10E+10	12%
G. Radwaste Volume Released	Liters	2.36E+06	1.44E+06	12%

* Applicable limits are expressed in terms of dose. See Table 7A of this report.
** Zeroes in this table indicate that no radioactivity was present at detectable levels.
*** N/A - Errors in measurements are not reported for these values since none were identified during the reporting period.

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TABLE 1-B
Liquid Effluents - Summation of All Releases
During the period
Starting: 1-Jul-2008 Ending: 31-Dec-2008

Type Of Effluent	Units	Quarter 3	Quarter 4	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release (Not Including Tritium, Gases, Alpha)	Ci	7.25E-03	5.56E-03	25%
2. Average Diluted Concentration During Period	µCi/ml	2.96E-10	5.43E-10	
3. Percent Of Applicable Limit	%	*	*	
B. Tritium				
1. Total Release	Ci	1.19E+02	3.61E+02	18%
2. Average Diluted Concentration During Period	µCi/ml	4.86E-06	3.52E-05	
3. Percent Of Applicable Limit	%	*	*	
C. Dissolved And Entrained Gases				
1. Total Release	Ci	2.38E-03	2.46E-03	39%
2. Average Diluted Concentration During Period	µCi/ml	9.72E-11	2.40E-10	
3. Percent Of Applicable Limit	%	4.86E-05	1.20E-04	
D. Gross Alpha Radioactivity				
1. Total Release	Ci	0.00E+00**	0.00E+00	N/A***
E. Total Waste Volume Released (Pre-Dilution)	Liters	1.56E+08	1.64E+08	2%
F. Volume Of Dilution Water Used	Liters	2.43E+10	1.01E+10	12%
G. Radwaste Volume Released	Liters	1.84E+06	1.10E+06	12%

* Applicable limits are expressed in terms of dose. See Table 7B of this report.
** Zeroes in this table indicate that no radioactivity was present at detectable levels.
*** N/A - Errors in measurements are not reported for these values since 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-2008 Ending: 31-Mar-2008

	CONTINUOUS	BATCH	TOTAL
H-3	1.19E-01	1.11E+03	1.11E+03
FISSION & ACTIVATION PRODUCTS			
BA-139	0.00E+00	6.74E-06	6.74E-06
CO-57	0.00E+00	2.35E-05	2.35E-05
CO-58	0.00E+00	2.83E-03	2.83E-03
CO-60	0.00E+00	1.36E-03	1.36E-03
CR-51	0.00E+00	9.54E-04	9.54E-04
CS-134	0.00E+00	3.92E-04	3.92E-04
CS-137	0.00E+00	4.19E-04	4.19E-04
FE-55	0.00E+00	1.91E-02	1.91E-02
FE-59	0.00E+00	2.16E-05	2.16E-05
I-131	0.00E+00	4.76E-05	4.76E-05
I-132	0.00E+00	5.37E-04	5.37E-04
I-133	0.00E+00	4.82E-06	4.82E-06
MN-54	0.00E+00	1.87E-04	1.87E-04
MO-99	0.00E+00	1.03E-05	1.03E-05
NB-95	0.00E+00	3.70E-05	3.70E-05
RH-106	0.00E+00	2.34E-05	2.34E-05
RU-103	0.00E+00	1.79E-05	1.79E-05
RU-106	0.00E+00	2.34E-05	2.34E-05
SB-124	0.00E+00	9.51E-06	9.51E-06
SB-125	0.00E+00	8.12E-04	8.12E-04
SN-117M	0.00E+00	9.54E-06	9.54E-06
SR-89	0.00E+00	1.54E-04	1.54E-04
SR-90	0.00E+00	7.01E-05	7.01E-05
TC-99M	0.00E+00	1.03E-05	1.03E-05
TE-132	0.00E+00	3.47E-04	3.47E-04
TOTALS	0.00E+00	2.74E-02	2.74E-02
DISSOLVED AND ENTRAINED GASES			
KR-85M	0.00E+00	4.18E-05	4.18E-05
XE-131M	0.00E+00	1.87E-03	1.87E-03
XE-133	0.00E+00	6.46E-01	6.46E-01
XE-133M	0.00E+00	1.05E-02	1.05E-02
XE-135	0.00E+00	1.59E-02	1.59E-02
TOTALS	0.00E+00	6.75E-01	6.75E-01

* 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-2008 Ending: 30-Jun-2008

	CONTINUOUS	BATCH	TOTAL
H-3	8.69E-02	4.82E+01	4.82E+01
FISSION & ACTIVATION PRODUCTS			
CO-57	0.00E+00	2.05E-06	2.05E-06
CO-58	0.00E+00	3.88E-03	3.88E-03
CO-60	0.00E+00	2.47E-04	2.47E-04
CR-51	0.00E+00	9.45E-05	9.45E-05
CS-137	0.00E+00	1.17E-05	1.17E-05
FE-55	0.00E+00	4.19E-03	4.19E-03
MN-54	0.00E+00	7.80E-06	7.80E-06
NB-95	0.00E+00	1.01E-05	1.01E-05
RU-103	0.00E+00	5.65E-06	5.65E-06
SB-125	0.00E+00	5.82E-04	5.82E-04
SR-89	0.00E+00	1.10E-04	1.10E-04
TOTALS	0.00E+00	9.14E-03	9.14E-03
DISSOLVED AND ENTRAINED GASES			
XE-133	0.00E+00	6.63E-04	6.63E-04
XE-135	0.00E+00	5.59E-05	5.59E-05
TOTALS	0.00E+00	7.19E-04	7.19E-04

*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-2008 Ending: 30-Sep-2008

	CONTINUOUS	BATCH	TOTAL
H-3	1.96E-01	1.19E+02	1.19E+02
FISSION & ACTIVATION PRODUCTS			
CE-141	0.00E+00	1.59E-06	1.59E-06
CO-58	0.00E+00	9.73E-04	9.73E-04
CO-60	0.00E+00	1.55E-04	1.55E-04
CS-137	0.00E+00	9.02E-06	9.02E-06
FE-55	0.00E+00	2.73E-03	2.73E-03
I-131	0.00E+00	8.21E-05	8.21E-05
I-133	0.00E+00	2.27E-06	2.27E-06
MN-54	0.00E+00	8.17E-06	8.17E-06
MO-99	0.00E+00	1.83E-05	1.83E-05
NB-95	0.00E+00	3.90E-06	3.90E-06
SB-125	0.00E+00	3.25E-03	3.25E-03
SN-113	0.00E+00	1.37E-06	1.37E-06
TC-99M	0.00E+00	1.83E-05	1.83E-05
TOTALS	0.00E+00	7.25E-03	7.25E-03
DISSOLVED AND ENTRAINED GASES			
XE-133	0.00E+00	2.30E-03	2.30E-03
XE-135	0.00E+00	7.61E-05	7.61E-05
TOTALS	0.00E+00	2.38E-03	2.38E-03

*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-2008 Ending: 31-Dec-2008

	CONTINUOUS	BATCH	TOTAL
H-3	2.66E-01	3.60E+02	3.61E+02
FISSION & ACTIVATION PRODUCTS			
CO-57	0.00E+00	6.74E-06	6.74E-06
CO-58	0.00E+00	6.77E-04	6.77E-04
CO-60	0.00E+00	4.31E-04	4.31E-04
CS-137	0.00E+00	1.10E-05	1.10E-05
FE-55	0.00E+00	2.50E-03	2.50E-03
MN-54	0.00E+00	8.43E-06	8.43E-06
SB-122	0.00E+00	1.41E-06	1.41E-06
SB-125	0.00E+00	1.86E-03	1.86E-03
SR-89	0.00E+00	6.86E-05	6.86E-05
TOTALS	0.00E+00	5.56E-03	5.56E-03
DISSOLVED AND ENTRAINED GASES			
KR-85	0.00E+00	4.65E-04	4.65E-04
XE-133	0.00E+00	1.90E-03	1.90E-03
XE-135	0.00E+00	8.82E-05	8.82E-05
TOTALS	0.00E+00	2.46E-03	2.46E-03

* 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-2008 Ending: 30-Jun-2008

Type Of Effluent	Units	Quarter 1	Quarter 2	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release	Ci	1.22E+00	6.145E-01	22
2. Average Release Rate For Period	µCi/sec	1.56E-01	7.82E-02	
3. Percent Of Applicable Limit	%	*	*	
B. Radioiodines				
1. Total Iodine-131	Ci	1.29E-04	2.33E-05	N/A***
2. Average Release Rate For Period	µCi/sec	1.64E-05	2.97E-06	
3. Percent Of Applicable Limit	%	*	*	
C. Particulates				
1. Particulates (Half-Lives>8 Days)	Ci	0.000E+00	4.74E-04	N/A***
2. Average Release Rate For Period	µCi/sec	0.000E+00	6.03E-05	
3. Percent Of Applicable Limit	%	*	*	
4. Gross Alpha Radioactivity	Ci	0.000E+00	0.000E+00	
D. Tritium				
1. Total Release	Ci	2.22E+00	1.23E+01	11
2. Average Release Rate For Period	µCi/sec	2.82E-01	1.56E+00	
3. Percent Of Applicable Limit	%	*	*	

* Applicable limits are expressed in terms of dose. See Table 6A of this report.
** Zeroes in this table indicate that no radioactivity was present at detectable levels.
*** N/A - Errors in measurements are not reported for these values since none were identified during the reporting period.

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TABLE 3-B
Gaseous Effluents - Summation of All Releases
During the period
Starting: 1-Jul-2008 Ending: 31-Dec-2008

Type Of Effluent	Units	Quarter 3	Quarter 4	Est. Tot Error %
A. Fission & Activation Products				
1. Total Release	Ci	1.91E+00	3.85E-02	22
2. Average Release Rate For Period	µCi/sec	2.41E-01	4.84E-03	
3. Percent Of Applicable Limit	%	*	*	
B. Radioiodines				
1. Total Iodine-131	Ci	0.000E+00	4.37E-07	***N/A
2. Average Release Rate For Period	µCi/sec	0.000E+00	5.5E-08	
3. Percent Of Applicable Limit	%	*	*	
C. Particulates				
1. Particulates (Half-Lives>8 Days)	Ci	1.45E-07	0.000E+00	***N/A
2. Average Release Rate For Period	µCi/sec	1.82E-08	0.000E+00	
3. Percent Of Applicable Limit	%	*	*	
4. Gross Alpha Radioactivity	Ci	0.000E+00	0.000E+00	
D. Tritium				
1. Total Release	Ci	2.18E+01	5.71	11
2. Average Release Rate For Period	µCi/sec	3.54E+00	7.19E-01	
3. Percent Of Applicable Limit	%	*	*	

* Applicable limits are expressed in terms of dose. See Table 6-B of this report.
** Zeroes in this table indicate that no radioactivity was present at detectable levels.
*** N/A - Errors in measurements are not reported for these values since 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-2008 Ending: 31-Mar-2008

	CONTINUOUS	BATCH	TOTAL
FISSION GASES			
Xe-133m	0.00E+00	7.51E-04	7.51E-04
Xe-131m	0.00E+00	8.59E-03	8.59E-03
Kr-85	0.00E+00	3.59E-02	3.59E-02
Xe-135	0.00E+00	1.03E-02	1.03E-02
Ar-41	0.00E+00	4.46E-02	4.46E-02
Xe-133	4.36E-01	7.25E-01	7.25E-01
TOTALS	4.36E-01	8.25E-01	1.26E+00
IODINES			
I-131	1.29E-04	0.00E+00	1.29E-04
I-132	4.55E-04	0.00E+00	4.55E-04
I-133	1.95E-05	0.00E+00	1.95E-05
TOTALS	6.03E-04	0.00E+00	6.03E-04
PARTICULATES			
TOTALS	0.00E+00	0.00E+00	0.00E+00
H-3	2.22E+00	0.00E+00	2.22E+00

* 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-2008 Ending: 30-Jun-2008

	CONTINUOUS	BATCH	TOTAL
FISSION GASES			
Xe-131m	0.00E+00	3.84E-04	3.84E-04
Xe-135	0.00E+00	2.74E-03	2.74E-03
Ar-41	0.00E+00	2.73E-02	2.73E-02
Kr-85	0.00E+00	1.15E-02	1.15E-02
Xe-133	5.33E-01	4.01E-02	4.01E-02
TOTALS	5.33E-01	8.20E-02	6.15E-01
IODINES			
I-131	2.33E-05	0.00E+00	2.33E-05
I-133	2.12E-06	0.00E+00	2.12E-06
TOTALS	2.54E-05	0.00E+00	2.54E-05
PARTICULATES			
TOTALS	0.00E+00	0.00E+00	0.00E+00
H-3	1.23E+01	0.00E+00	1.23E+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-2008 Ending: 30-Sep-2008

	CONTINUOUS	BATCH	TOTAL
FISSION GASES			
Kr-85	0.00E+00	3.25E-03	3.25E-03
Xe-135	0.00E+00	3.74E-02	3.74E-02
Ar-41	0.00E+00	6.15E-01	6.15E-01
Xe-133	0.00E+00	1.26E+00	1.26E+00
TOTALS	0.00E+00	1.91E+00	1.91E+00
IODINES			
TOTALS	0.00E+00	0.00E+00	0.00E+00
PARTICULATES			
Cs-134	5.52E-08	0.00E+00	5.52E-08
Cs-137	8.95E-08	0.00E+00	8.95E-08
TOTALS	1.45E-07	0.00E+00	1.45E-07
H-3	2.81E+01	0.00E+00	2.81E+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-2008 Ending: 31-Dec-2008

	CONTINUOUS	BATCH	TOTALS
FISSION GASES			
Xe-135	0.00E+00	7.37E-04	7.37E-04
Kr-85	0.00E+00	2.04E-03	2.04E-03
Ar-41	0.00E+00	1.79E-02	1.79E-02
Xe-133	0.00E+00	1.79E-02	1.79E-02
TOTALS	0.00E+00	3.85E-02	3.85E-02
IODINES			
I-131	4.37E-07	0.00E+00	4.37E-07
I-133	5.23E-06	0.00E+00	5.23E-06
TOTALS	5.67E-06	0.00E+00	5.67E-06
PARTICULATES			
TOTALS	0.00E+00	0.00E+00	0.00E+00
H-3	5.71E+00	0.00E+00	5.71E+00

* 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, filter sludges, evaporator bottoms, etc.	m^3	6.82	N/A
	Ci	284.0	+/-25%
b. Dry Active Waste, Compressible Waste Contaminated Equipment, etc.	m^3	466.0	N/A
	Ci	0.558	+/-25%
c. Irradiated Components, Control Rods, etc.	m^3	None	N/A
	Ci	None	N/A

2. Estimate of Major Nuclide Composition (by type of waste)

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

	Percent	Ci
H-3	0.024	6.94E-2
C-14	0.026	7.34E-2
Cr-51	0.000	1.12E-4
Mn-54	3.345	9.50E+0
Fe-55	10.112	2.87E+1
Fe-59	0.000	1.48E-4
Co-57	0.234	6.65E-1
Co-58	2.808	7.98E+0
Co-60	10.825	3.07E+1
Ni-63	34.795	9.88E+1
Zn-65	0.001	3.19E-3
Sr-89	0.035	1.00E-1
Sr-90	0.165	4.69E-1
Zr-95	0.002	4.48E-3
Nb-95	0.001	2.25E-3
Tc-99	0.001	2.76E-3
Ru-103	0.000	3.17E-5
Ru-106	0.007	2.12E-2
Cd-109	0.265	7.53E-1
Sb-125	0.857	2.43E+0
Cs-134	15.756	4.48E+1
Cs-137	20.443	5.80E+1
Ce-144	0.109	3.10E-1
Pu-238	0.000	7.32E-4
Pu-239	0.000	3.26E-4
Pu-240	0.000	3.26E-4
Pu-241	0.198	5.63E-1
Am-241	0.000	2.70E-4
Cm-242	0.000	6.21E-4
Cm-243	0.000	3.90E-4
Cm-244	0.000	3.89E-4

TABLE 5-A
SOLID WASTE (RADIOACTIVE SHIPMENTS)

b. Dry active waste, compressible waste, contaminated equipment, etc. (nuclides determined by estimate)		Percent	Ci
	H-3	0.161	8.98E-4
	Cr-51	15.785	8.81E-2
	Mn-54	2.677	1.49E-2
	Fe-55	6.325	3.53E-2
	Fe-59	1.113	6.21E-3
	Co-57	0.224	1.25E-3
	Co-58	50.660	2.83E-1
	Co-60	6.948	3.88E-2
	Ni-63	3.794	2.12E-2
	Zn-65	0.015	8.54E-5
	Sr-89	0.003	1.82E-5
	Sr-90	0.002	1.16E-5
	Zr-95	3.484	1.94E-2
	Nb-95	5.206	2.90E-2
	Ru-103	0.499	2.78E-3
	Ru-106	0.793	4.43E-3
	Sb-125	0.319	1.78E-3
	Cs-134	0.514	2.87E-3
	Cs-137	0.526	2.93E-3
	La-140	0.021	1.17E-4
	Ce-141	0.261	1.45E-3
	Ce-144	0.596	3.32E-3
	Pu-238	0.000	9.81E-7
	Pu-239	0.001	5.75E-6
	Pu-240	0.001	5.75E-6
	Pu-241	0.069	3.84E-4
	Am-241	0.000	4.02E-7
	Cu-242	0.005	2.64E-5
	Cm-243	0.000	6.72E-7
	Cm-244	0.000	6.71E-7
c. Irradiated Components	None	**N/A**	**N/A**

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TABLE 5-B
SOLID WASTE (RADIOACTIVE SHIPMENTS)

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
2	Motor Freight	Barnwell Disposal Facility
7	Motor Freight	Duratek DAW Processing
2	Motor Freight	Duratek Green is Clean

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 Watts Bar 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 Watts Bar.

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 Watts Bar 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, and are presented for each quarter on pages E1-33 through E1-59.

Radiological Impact

Meteorological Data

Meteorological variables at Watts Bar are measured continuously. Measurements collected include wind speed, wind direction, and temperature at heights of 10, 46, and 91 meters above the ground. Quarterly joint frequency distributions (JFDs) are calculated for each release point using the appropriate levels of meteorological data. A joint frequency distribution gives 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 Watts Bar 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. To conservatively account for beef ingestion, a beef ingestion dose equal to that for the highest unrestricted area boundary location is added to each identified receptor. 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.

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).

Radiological Impact

The concentrations of radioactivity in the Tennessee River are estimated by a computer model which uses measured hydraulic data downstream of Watts Bar. 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 Watts Bar 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 Watts Bar, 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 Watts Bar, is an individual who obtains all of his drinking water at Dayton, TN, consumes fish caught from the Tennessee River between Watts Bar and Chickamauga Dam, and spends 500 hours per year on the shoreline just below the outfall from Watts Bar. 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. 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.

Radiological Impact

Direct Radiation

External gamma radiation levels were measured by thermoluminescent dosimeters (TLDs) deployed around WBN as part of the offsite Environmental Radiological Monitoring Program. The quarterly gamma radiation levels determined from these TLDs during this reporting period averaged 11.0 mR/quarter at onsite (at or near the site boundary) stations and 9.25 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 2-6 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 TLD 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 Watts Bar Offsite Dose Calculation Manual, 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 TLD measurements indicated that the highest annual TLD reading outside Radiological Control Areas was 88 mrem. Using this value, subtracting an annual background value of approximately 44 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 10 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 Watts Bar 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.

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	2.03E-04 mrad	5 mrad	< 1%	E/1280 meters
Beta Air	3.31E-04 mrad	10 mrad	< 1%	E/1280 meters
Submersion				
Total Body	9.69E-05 mrem	N/A	N/A	SE/1372 meters
Skin	1.89E-04 mrem	N/A	N/A	SE/1372 meters
Organ Doses				
Child/Thyroid	2.70E-03 mrem	7.5 mrem	< 1%	SSE/1625 meters
Child/Total Body	1.56E-03 mrem	7.5 mrem	< 1%	SSE/1625 meters

Population Doses

Total Body Dose 6.51E-03 man-rem
Maximum Organ Dose (organ) 9.74E-03 man-rem (thyroid)

Second Quarter

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
External				
Gamma Air	2.11E-04 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	3.76E-04mrad	10 mrad	< 1%	ESE/1250 meters
Submersion				
Total Body	8.37E-05 mrem	N/A	N/A	SE/1372 meters
Skin	1.64E-04 mrem	N/A	N/A	SE/1372 meters
Organ Doses				
Child/Thyroid	1.04E-02 mrem	7.5 mrem	< 1%	NE/3353 meters
Child/Total Body	1.02E-02 mrem	7.5 mrem	< 1%	NE/3353 meters

Population Doses

Total Body Dose 3.89E-02 man-rem
Maximum Organ Dose (organ) 3.95E-02 man-rem (thyroid)

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).

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TABLE 6-B
Doses from Airborne Effluents

Third Quarter

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
External				
Gamma Air	3.88E-03 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	2.35E-03 mrad	10 mrad	< 1%	ESE/1250 meters
Submersion				
Total Body	2.45E-03 mrem	N/A	N/A	SE/1372 meters
Skin	3.82E-03 mrem	N/A	N/A	SE/1372 meters
Organ Doses				
Child/Thyroid	2.92E-02 mrem	7.5 mrem	< 1%	ESE/1625 meters
Child/Total Body	2.92E-02 mrem	7.5 mrem	< 1%	ESE/1625 meters

Population Doses

Total Body Dose 1.02E-01 man-rem
Maximum Organ Dose (organ) 1.02E-01 man-rem (thyroid)

Fourth Quarter

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
External				
Gamma Air	9.81E-05 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	5.00E-05 mrad	10 mrad	< 1%	ESE/1250 meters
Submersion				
Total Body	5.26E-05 mrem	N/A	N/A	SE/1372 meters
Skin	8.08E-05 mrem	N/A	N/A	SE/1372 meters
Organ Doses				
Child/Thyroid	5.15E-03 mrem	7.5 mrem	< 1%	ESE/4780 meters
Child/Total Body	5.15E-03 mrem	7.5 mrem	< 1%	ESE/4780 meters

Population Doses

Total Body Dose 1.74E-02 man-rem
Maximum Organ Dose (organ) 1.74E-02 man-rem (thyroid)

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).

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TABLE 7-A
Doses from Liquid Effluents

First Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Adult	Total Body	8.8E-03	1.5 mrem	< 1 %
Child	Bone	1.1E-02	5 mrem	< 1 %
Child	Thyroid	8.1E-03	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 17,778

Population Doses

Total Body Dose 4.9E-01 man-rem
Maximum Organ Dose (organ) 5.0E-01 man-rem (Bone)

Second Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	8.7E-04	1.5 mrem	< 1 %
Child	Bone	1.0E-03	5 mrem	< 1 %
Child	Thyroid	8.4E-04	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 8,989

Population Doses

Total Body Dose 4.5E-02 man-rem
Maximum Organ Dose (organ) 4.6E-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).

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TABLE 7-B
Doses from Liquid Effluents

Third Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	1.3E-03	1.5 mrem	< 1 %
Child	GIT	1.3E-03	5 mrem	< 1 %
Child	Thyroid	1.4E-03	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 14,476

Population Doses

Total Body Dose 7.3E-02 man-rem
Maximum Organ Dose (organ) 7.4E-02 man-rem (GIT)

Fourth Quarter

Individual Doses (mrem)

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	3.3E-03	1.5 mrem	< 1 %
Child	Bone	3.4E-03	5 mrem	< 1 %
Child	Thyroid	3.3E-03	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 14,624

Population Doses

Total Body Dose 1.9E-01 man-rem
Maximum Organ Dose (organ) 1.9E-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).

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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)	9.69E-05	8.37E-05	2.45E-03	5.26E-05	
Critical organ dose (airborne)	1.57E-03	1.02E-02	2.92E-02	5.15E-03	
Total body dose (liquid)	8.80E-03	8.70E-04	1.30E-03	3.30E-03	
Maximum organ dose (liquid)	1.10E-02	1.00E-03	1.30E-03	3.40E-03	
Direct Radiation Dose	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Total	**2.15E-02**	**1.22E-02**	**3.43E-02**	**1.19E-02**	
				Cumulative Total Dose (mrem)	**7.98E-02**
				Annual Dose Limit (mrem)	**25**
				Percent of Limit	**0.32%**
Thyroid					
Total body air (submersion)	9.69E-05	8.37E-05	2.45E-03	5.26E-05	
Thyroid dose (airborne)	2.70E-03	1.04E-02	2.92E-02	5.15E-03	
Total body dose (liquid)	8.80E-03	8.70E-04	1.30E-03	3.30E-03	
Thyroid dose (liquid)	8.10E-03	8.40E-04	1.40E-03	3.30E-03	
Total	**1.97E-02**	**1.22E-02**	**3.44E-02**	**1.18E-02**	
				Cumulative Total Dose (mrem)	**7.80E-02**
				Annual Dose Limit (mrem)	**75**
				Percent of Limit	**0.10%**

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, 2008 - MAR 31, 2008

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	0.138	0.184	0.138	0.000	0.000	0.000	0.459
NNE	0.000	0.000	0.000	0.321	0.184	0.229	0.000	0.000	0.000	0.734
NE	0.000	0.000	0.046	0.229	0.000	0.000	0.000	0.000	0.000	0.275
ENE	0.000	0.000	0.000	0.229	0.138	0.000	0.000	0.000	0.000	0.367
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	0.092	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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.000	0.000	0.000	0.046	0.321	0.138	0.184	0.000	0.000	0.688
SSW	0.000	0.000	0.046	0.000	0.551	0.688	0.000	0.000	0.000	1.285
SW	0.000	0.000	0.000	0.000	0.184	0.000	0.000	0.000	0.000	0.184
WSW	0.000	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.046
W	0.000	0.000	0.000	0.000	0.000	0.642	0.000	0.000	0.000	0.642
WNW	0.000	0.000	0.000	0.000	0.092	0.826	0.000	0.000	0.000	0.918
NW	0.000	0.000	0.000	0.000	0.000	0.505	0.000	0.000	0.000	0.505
NNW	0.000	0.000	0.000	0.092	0.046	0.413	0.000	0.000	0.000	0.551
SUBTOTAL	0.000	0.000	0.138	1.239	1.698	3.626	0.184	0.000	0.000	6.884

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2179
TOTAL HOURS OF STABILITY CLASS A 150
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A 150
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2179
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: 2008/05/05

MEAN WIND SPEED = 7.80

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

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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, 2008 - MAR 31, 2008

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	0.000	0.000	0.092	0.138	0.046	0.000	0.000	0.000	0.275
NNE	0.000	0.000	0.275	0.229	0.092	0.092	0.000	0.000	0.000	0.688
NE	0.000	0.000	0.046	0.184	0.092	0.046	0.000	0.000	0.000	0.367
ENE	0.000	0.000	0.046	0.138	0.000	0.000	0.000	0.000	0.000	0.184
E	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.092
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	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.046	0.000	0.046	0.000	0.000	0.000	0.000	0.092
S	0.000	0.000	0.000	0.000	0.092	0.000	0.092	0.046	0.000	0.229
SSW	0.000	0.000	0.046	0.184	0.367	0.092	0.092	0.000	0.000	0.780
SW	0.000	0.000	0.046	0.229	0.184	0.000	0.000	0.000	0.000	0.459
WSW	0.000	0.000	0.000	0.092	0.000	0.046	0.000	0.000	0.000	0.138
W	0.000	0.000	0.000	0.046	0.046	0.229	0.046	0.000	0.000	0.367
WNW	0.000	0.000	0.000	0.000	0.138	0.184	0.000	0.000	0.000	0.321
NW	0.000	0.000	0.000	0.046	0.000	0.275	0.000	0.000	0.000	0.321
NNW	0.000	0.000	0.000	0.046	0.092	0.092	0.000	0.000	0.000	0.229
SUBTOTAL	0.000	0.000	0.597	1.331	1.285	1.101	0.229	0.046	0.000	4.589

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2179
TOTAL HOURS OF STABILITY CLASS B	100
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	100
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2179
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: 2008/05/05

MEAN WIND SPEED = 6.54

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, 2008 - MAR 31, 2008

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	0.000	0.046	0.138	0.046	0.000	0.000	0.000	0.000	0.229
NNE	0.000	0.000	0.321	0.321	0.092	0.092	0.000	0.000	0.000	0.826
NE	0.000	0.000	0.184	0.046	0.092	0.000	0.000	0.000	0.000	0.321
ENE	0.000	0.046	0.138	0.138	0.000	0.000	0.000	0.000	0.000	0.321
E	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.092
ESE	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SE	0.000	0.000	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.138
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	0.046	0.229	0.184	0.000	0.000	0.000	0.000	0.459
SSW	0.000	0.000	0.184	0.597	0.184	0.275	0.092	0.000	0.000	1.331
SW	0.000	0.000	0.046	0.872	0.092	0.000	0.046	0.000	0.000	1.056
WSW	0.000	0.000	0.000	0.184	0.138	0.092	0.000	0.000	0.000	0.413
W	0.000	0.000	0.000	0.092	0.046	0.138	0.000	0.000	0.000	0.275
WNW	0.000	0.000	0.000	0.184	0.046	0.092	0.000	0.000	0.000	0.321
NW	0.000	0.000	0.046	0.092	0.046	0.184	0.000	0.000	0.000	0.367
NNW	0.000	0.000	0.000	0.092	0.138	0.184	0.000	0.000	0.000	0.413
SUBTOTAL	0.000	0.046	1.285	2.983	1.101	1.056	0.138	0.000	0.000	6.609

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2179
TOTAL HOURS OF STABILITY CLASS C	144
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	144
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2179
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: 2008/05/05

MEAN WIND SPEED = 5.35

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, 2008 - MAR 31, 2008

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	0.000	1.010	1.193	1.331	1.056	0.000	0.000	0.000	4.589
NNE	0.000	0.000	0.872	1.147	1.377	0.551	0.000	0.000	0.000	3.947
NE	0.000	0.000	0.321	0.688	0.321	0.000	0.000	0.000	0.000	1.331
ENE	0.000	0.092	0.642	0.184	0.000	0.000	0.000	0.000	0.000	0.918
E	0.000	0.092	0.367	0.000	0.000	0.000	0.000	0.000	0.000	0.459
ESE	0.000	0.138	0.138	0.046	0.000	0.000	0.000	0.000	0.000	0.321
SE	0.000	0.092	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.229
SSE	0.000	0.092	0.275	0.138	0.000	0.000	0.000	0.000	0.000	0.505
S	0.000	0.046	0.597	0.275	0.459	0.505	0.826	0.046	0.000	2.754
SSW	0.000	0.000	2.019	2.432	0.964	1.698	0.138	0.000	0.000	7.251
SW	0.000	0.229	1.560	1.010	0.367	0.184	0.046	0.000	0.000	3.396
WSW	0.000	0.138	0.321	0.413	0.046	0.505	0.000	0.000	0.000	1.423
W	0.000	0.092	0.367	0.505	0.872	0.780	0.046	0.000	0.000	2.662
WNW	0.000	0.046	0.321	0.597	1.147	1.193	0.138	0.000	0.000	3.442
NW	0.000	0.046	0.459	0.642	0.826	1.147	0.092	0.000	0.000	3.212
NNW	0.000	0.000	0.688	0.688	0.780	1.147	0.000	0.000	0.000	3.304
SUBTOTAL	0.000	1.101	10.096	9.959	8.490	8.765	1.285	0.046	0.000	39.743

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2179
TOTAL HOURS OF STABILITY CLASS D 866
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 866
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2179
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: 2008/05/05

MEAN WIND SPEED = 5.65

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

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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, 2008 - MAR 31, 2008

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	0.092	0.229	0.138	0.046	0.000	0.000	0.000	0.000	0.505
NNE	0.000	0.092	0.459	0.184	0.138	0.000	0.000	0.000	0.000	0.872
NE	0.000	0.000	0.642	0.321	0.000	0.000	0.000	0.000	0.000	0.964
ENE	0.000	0.092	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.321
E	0.000	0.184	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.413
ESE	0.000	0.138	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.184
SE	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SSE	0.000	0.184	0.184	0.046	0.000	0.046	0.000	0.000	0.000	0.459
S	0.000	0.184	0.688	0.275	0.413	0.413	0.092	0.000	0.000	2.065
SSW	0.000	0.229	1.331	1.652	0.597	0.826	0.000	0.000	0.000	4.635
SW	0.000	0.413	1.239	0.551	0.046	0.000	0.000	0.000	0.000	2.249
WSW	0.000	0.184	0.734	0.321	0.092	0.000	0.000	0.000	0.000	1.331
W	0.000	0.459	0.964	0.459	0.184	0.092	0.000	0.000	0.000	2.157
WNW	0.000	0.367	0.459	0.229	0.046	0.092	0.000	0.000	0.000	1.193
NW	0.000	0.092	0.459	0.046	0.092	0.000	0.000	0.000	0.000	0.688
NNW	0.000	0.092	0.413	0.138	0.000	0.000	0.000	0.000	0.000	0.642
SUBTOTAL	0.000	2.799	8.352	4.360	1.652	1.469	0.092	0.000	0.000	18.724

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2179
TOTAL HOURS OF STABILITY CLASS E	408
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	408
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2179
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: 2008/05/05

MEAN WIND SPEED = 3.57

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - MAR 31, 2008

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	0.092	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.321
NNE	0.000	0.092	0.367	0.000	0.000	0.000	0.000	0.000	0.000	0.459
NE	0.000	0.184	0.275	0.046	0.000	0.000	0.000	0.000	0.000	0.505
ENE	0.000	0.229	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.505
E	0.000	0.138	0.184	0.000	0.000	0.000	0.000	0.000	0.000	0.321
ESE	0.000	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.138
SE	0.000	0.092	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.138
SSE	0.000	0.138	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.229
S	0.000	0.046	0.367	0.000	0.000	0.000	0.000	0.000	0.000	0.413
SSW	0.000	0.321	0.459	0.229	0.000	0.000	0.000	0.000	0.000	1.010
SW	0.000	0.459	0.321	0.000	0.000	0.000	0.000	0.000	0.000	0.780
WSW	0.000	0.734	0.688	0.000	0.000	0.000	0.000	0.000	0.000	1.423
W	0.000	1.056	0.688	0.092	0.000	0.000	0.000	0.000	0.000	1.836
WNW	0.000	1.193	0.275	0.046	0.000	0.000	0.000	0.000	0.000	1.514
NW	0.000	0.872	0.367	0.000	0.000	0.000	0.000	0.000	0.000	1.239
NNW	0.000	0.459	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.688
SUBTOTAL	0.000	6.241	4.865	0.413	0.000	0.000	0.000	0.000	0.000	11.519

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2179
TOTAL HOURS OF STABILITY CLASS F	251
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	251
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2179
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: 2008/05/05

MEAN WIND SPEED = 1.58

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, 2008 - MAR 31, 2008

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	0.007	0.505	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.604
NNE	0.004	0.275	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.325
NE	0.005	0.321	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.464
ENE	0.004	0.184	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.325
E	0.003	0.184	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.279
ESE	0.003	0.138	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.232
SE	0.002	0.184	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.186
SSE	0.001	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.093
S	0.004	0.184	0.138	0.000	0.046	0.000	0.000	0.000	0.000	0.371
SSW	0.008	0.459	0.184	0.000	0.000	0.000	0.000	0.000	0.000	0.650
SW	0.013	0.642	0.505	0.000	0.000	0.000	0.000	0.000	0.000	1.161
WSW	0.026	1.239	1.010	0.000	0.000	0.000	0.000	0.000	0.000	2.275
W	0.022	1.056	0.826	0.000	0.000	0.000	0.000	0.000	0.000	1.904
WNW	0.014	0.734	0.459	0.046	0.000	0.000	0.000	0.000	0.000	1.253
NW	0.012	0.688	0.321	0.000	0.000	0.000	0.000	0.000	0.000	1.022
NNW	0.009	0.505	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.789
SUBTOTAL	0.138	7.343	4.360	0.046	0.046	0.000	0.000	0.000	0.000	11.932

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2179
TOTAL HOURS OF STABILITY CLASS G 260
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G 260
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2179
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

DATE PRINTED: 2008/05/05

MEAN WIND SPEED = 1.40

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, 2008 - JUN 30, 2008

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	0.000	0.000	0.046	0.371	0.371	0.000	0.000	0.000	0.787
NNE	0.000	0.000	0.000	0.232	0.278	0.139	0.000	0.000	0.000	0.648
NE	0.000	0.000	0.046	0.093	0.046	0.046	0.000	0.000	0.000	0.232
ENE	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.093
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	0.046	0.000	0.000	0.000	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	0.046	0.185	0.139	0.000	0.000	0.000	0.371
SSW	0.000	0.000	0.093	0.093	0.880	0.417	0.000	0.000	0.000	1.482
SW	0.000	0.046	0.093	0.000	0.185	0.046	0.000	0.000	0.000	0.371
WSW	0.000	0.000	0.046	0.000	0.093	0.232	0.000	0.000	0.000	0.371
W	0.000	0.000	0.046	0.000	0.093	0.093	0.000	0.000	0.000	0.232
WNW	0.000	0.000	0.000	0.000	0.046	0.139	0.000	0.000	0.000	0.185
NW	0.000	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.093
NNW	0.000	0.000	0.000	0.046	0.046	0.046	0.000	0.000	0.000	0.139
SUBTOTAL	0.000	0.046	0.371	0.648	2.316	1.714	0.000	0.000	0.000	5.095

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2173
TOTAL HOURS OF STABILITY CLASS A 110
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A 110
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2159
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: 2008/08/05

MEAN WIND SPEED = 6.79

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, 2008 - JUN 30, 2008

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	0.000	0.046	0.046	0.093	0.046	0.000	0.000	0.000	0.232
NNE	0.000	0.000	0.000	0.463	0.185	0.046	0.000	0.000	0.000	0.695
NE	0.000	0.000	0.000	0.185	0.185	0.046	0.000	0.000	0.000	0.417
ENE	0.000	0.000	0.046	0.093	0.000	0.000	0.000	0.000	0.000	0.139
E	0.000	0.000	0.046	0.139	0.000	0.000	0.000	0.000	0.000	0.185
ESE	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SE	0.000	0.000	0.000	0.093	0.000	0.000	0.000	0.000	0.000	0.093
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	0.185	0.324	0.093	0.000	0.000	0.000	0.602
SSW	0.000	0.046	0.046	0.695	0.463	0.324	0.139	0.000	0.000	1.714
SW	0.000	0.000	0.046	0.324	0.046	0.046	0.000	0.000	0.000	0.463
WSW	0.000	0.000	0.000	0.000	0.139	0.046	0.000	0.000	0.000	0.185
W	0.000	0.000	0.000	0.093	0.232	0.185	0.046	0.000	0.000	0.556
WNW	0.000	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.093
NW	0.000	0.000	0.000	0.093	0.046	0.185	0.000	0.000	0.000	0.324
NNW	0.000	0.000	0.046	0.000	0.139	0.185	0.000	0.000	0.000	0.371
SUBTOTAL	0.000	0.046	0.324	2.455	1.899	1.251	0.185	0.000	0.000	6.160

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2173
TOTAL HOURS OF STABILITY CLASS B 133
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B 133
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2159
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: 2008/08/05

MEAN WIND SPEED = 6.32

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - JUN 30, 2008

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	0.000	0.046	0.232	0.093	0.139	0.000	0.000	0.000	0.509
NNE	0.000	0.000	0.185	0.324	0.185	0.000	0.000	0.000	0.000	0.695
NE	0.000	0.000	0.232	0.324	0.000	0.000	0.000	0.000	0.000	0.556
ENE	0.000	0.000	0.139	0.046	0.000	0.000	0.000	0.000	0.000	0.185
E	0.000	0.000	0.278	0.046	0.046	0.000	0.000	0.000	0.000	0.371
ESE	0.000	0.000	0.046	0.093	0.000	0.000	0.000	0.000	0.000	0.139
SE	0.000	0.000	0.046	0.093	0.000	0.000	0.000	0.000	0.000	0.139
SSE	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.093
S	0.000	0.000	0.232	0.509	0.139	0.046	0.046	0.000	0.000	0.973
SSW	0.000	0.000	0.232	1.158	0.371	0.278	0.046	0.000	0.000	2.084
SW	0.000	0.000	0.093	0.880	0.371	0.000	0.000	0.000	0.000	1.343
WSW	0.000	0.000	0.046	0.139	0.093	0.093	0.046	0.000	0.000	0.417
W	0.000	0.000	0.000	0.139	0.000	0.000	0.000	0.000	0.000	0.139
WNW	0.000	0.000	0.000	0.139	0.093	0.046	0.000	0.000	0.000	0.278
NW	0.000	0.000	0.046	0.046	0.046	0.139	0.000	0.000	0.000	0.278
NNW	0.000	0.000	0.046	0.139	0.139	0.046	0.000	0.000	0.000	0.371
SUBTOTAL	0.000	0.000	1.714	4.354	1.575	0.787	0.139	0.000	0.000	8.569

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2173
TOTAL HOURS OF STABILITY CLASS C	185
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	185
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2159
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: 2008/08/05

MEAN WIND SPEED = 5.01

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, 2008 - JUN 30, 2008

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	0.000	0.509	0.695	0.787	0.463	0.000	0.000	0.000	2.455
NNE	0.000	0.000	0.463	0.509	0.324	0.046	0.000	0.000	0.000	1.343
NE	0.000	0.000	0.509	0.000	0.046	0.046	0.000	0.000	0.000	0.602
ENE	0.000	0.232	0.695	0.185	0.000	0.000	0.000	0.000	0.000	1.112
E	0.000	0.046	0.417	0.046	0.046	0.000	0.000	0.000	0.000	0.556
ESE	0.000	0.000	0.278	0.093	0.000	0.046	0.000	0.000	0.000	0.417
SE	0.000	0.139	0.509	0.046	0.000	0.000	0.000	0.000	0.000	0.695
SSE	0.000	0.278	0.509	0.278	0.000	0.000	0.000	0.000	0.000	1.065
S	0.000	0.185	1.112	0.556	0.463	0.741	0.185	0.000	0.000	3.242
SSW	0.000	0.185	2.547	2.177	1.204	1.204	0.139	0.000	0.000	7.457
SW	0.000	0.139	1.528	1.343	0.463	0.046	0.000	0.000	0.000	3.520
WSW	0.000	0.046	0.648	0.602	0.139	0.093	0.000	0.000	0.000	1.528
W	0.000	0.046	0.556	0.509	0.139	0.278	0.046	0.000	0.000	1.575
WNW	0.000	0.046	0.741	0.417	0.232	0.556	0.000	0.000	0.000	1.992
NW	0.000	0.046	0.509	0.417	0.417	0.232	0.000	0.000	0.000	1.621
NNW	0.000	0.000	0.278	0.324	0.695	0.648	0.000	0.000	0.000	1.945
SUBTOTAL	0.000	1.390	11.811	8.198	4.956	4.400	0.371	0.000	0.000	31.126

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2173
TOTAL HOURS OF STABILITY CLASS D 672
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 672
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2159
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: 2008/08/05

MEAN WIND SPEED = 4.66

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - JUN 30, 2008

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	0.093	0.278	0.509	0.232	0.000	0.000	0.000	0.000	1.112
NNE	0.000	0.046	0.417	0.046	0.046	0.000	0.000	0.000	0.000	0.556
NE	0.000	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.417
ENE	0.000	0.139	0.232	0.000	0.000	0.000	0.000	0.000	0.000	0.371
E	0.000	0.093	0.139	0.046	0.046	0.000	0.000	0.000	0.000	0.324
ESE	0.000	0.093	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.185
SE	0.000	0.046	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.185
SSE	0.000	0.417	0.185	0.046	0.000	0.000	0.000	0.000	0.000	0.648
S	0.000	0.139	1.065	0.787	0.463	0.417	0.000	0.000	0.000	2.872
SSW	0.000	0.324	2.038	2.038	0.463	0.417	0.046	0.000	0.000	5.327
SW	0.000	0.278	2.316	0.417	0.185	0.000	0.000	0.000	0.000	3.196
WSW	0.000	0.602	1.065	0.185	0.046	0.000	0.000	0.000	0.000	1.899
W	0.000	0.185	1.019	0.139	0.046	0.000	0.000	0.000	0.000	1.390
WNW	0.000	0.185	0.648	0.417	0.185	0.046	0.000	0.000	0.000	1.482
NW	0.000	0.185	0.463	0.139	0.046	0.093	0.000	0.000	0.000	0.926
NNW	0.000	0.000	0.278	0.509	0.278	0.046	0.000	0.000	0.000	1.112
SUBTOTAL	0.000	2.825	10.792	5.280	2.038	1.019	0.046	0.000	0.000	22.001

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2173
TOTAL HOURS OF STABILITY CLASS E 482
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E 475
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2159
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: 2008/08/05

MEAN WIND SPEED = 3.28

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - JUN 30, 2008

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	0.093	0.185	0.000	0.000	0.046	0.000	0.000	0.000	0.324
NNE	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
NE	0.000	0.046	0.000	0.093	0.000	0.000	0.000	0.000	0.000	0.139
ENE	0.000	0.046	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.185
E	0.000	0.093	0.185	0.000	0.000	0.000	0.000	0.000	0.000	0.278
ESE	0.000	0.093	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.139
SE	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SSE	0.000	0.232	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.324
S	0.000	0.278	0.232	0.046	0.000	0.000	0.000	0.000	0.000	0.556
SSW	0.000	0.787	0.787	0.139	0.000	0.000	0.000	0.000	0.000	1.714
SW	0.000	0.973	0.648	0.000	0.000	0.000	0.000	0.000	0.000	1.621
WSW	0.000	0.973	0.741	0.000	0.000	0.000	0.000	0.000	0.000	1.714
W	0.000	1.065	0.880	0.046	0.000	0.000	0.000	0.000	0.000	1.992
WNW	0.000	1.251	0.417	0.000	0.000	0.000	0.000	0.000	0.000	1.667
NW	0.000	0.556	0.834	0.000	0.000	0.000	0.000	0.000	0.000	1.390
NNW	0.000	0.232	0.602	0.093	0.000	0.000	0.000	0.000	0.000	0.926
SUBTOTAL	0.000	6.762	5.836	0.417	0.000	0.046	0.000	0.000	0.000	13.062

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2173
TOTAL HOURS OF STABILITY CLASS F	289
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	282
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2159
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: 2008/08/05

MEAN WIND SPEED = 1.62

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - JUN 30, 2008

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	0.185	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.326
NNE	0.001	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.093
NE	0.001	0.046	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.187
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.001	0.139	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.187
ESE	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.047
SE	0.001	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.093
SSE	0.001	0.093	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.140
S	0.003	0.278	0.232	0.000	0.000	0.000	0.000	0.000	0.000	0.513
SSW	0.006	0.695	0.232	0.000	0.000	0.000	0.000	0.000	0.000	0.933
SW	0.008	0.880	0.371	0.000	0.000	0.000	0.000	0.000	0.000	1.259
WSW	0.017	1.482	1.065	0.000	0.000	0.000	0.000	0.000	0.000	2.564
W	0.018	2.038	0.602	0.000	0.000	0.000	0.000	0.000	0.000	2.658
WNW	0.019	2.316	0.509	0.000	0.000	0.000	0.000	0.000	0.000	2.844
NW	0.012	1.251	0.509	0.000	0.000	0.000	0.000	0.000	0.000	1.772
NNW	0.002	0.185	0.185	0.000	0.000	0.000	0.000	0.000	0.000	0.373
SUBTOTAL	0.093	9.773	4.122	0.000	0.000	0.000	0.000	0.000	0.000	13.988

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2173
TOTAL HOURS OF STABILITY CLASS G	302
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G	302
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2159
TOTAL HOURS CALM	2

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: 2008/08/05

MEAN WIND SPEED = 1.29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - SEP 30, 2008

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	0.272	0.000	0.000	0.000	0.408
NNE	0.000	0.000	0.000	0.136	0.498	0.589	0.000	0.000	0.000	1.223
NE	0.000	0.000	0.000	0.091	0.362	0.181	0.000	0.000	0.000	0.634
ENE	0.000	0.000	0.000	0.453	0.362	0.091	0.000	0.000	0.000	0.906
E	0.000	0.000	0.000	0.091	0.045	0.000	0.000	0.000	0.000	0.136
ESE	0.000	0.000	0.045	0.091	0.000	0.000	0.000	0.000	0.000	0.136
SE	0.000	0.000	0.000	0.045	0.045	0.000	0.000	0.000	0.000	0.091
SSE	0.000	0.000	0.045	0.045	0.136	0.000	0.000	0.000	0.000	0.227
S	0.000	0.000	0.000	0.136	0.091	0.091	0.000	0.000	0.000	0.317
SSW	0.000	0.000	0.000	0.317	0.136	0.000	0.000	0.000	0.000	0.453
SW	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.045
WSW	0.000	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.045
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	0.136	0.000	0.000	0.000	0.000	0.136
NW	0.000	0.000	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.045
NNW	0.000	0.000	0.000	0.000	0.045	0.091	0.000	0.000	0.000	0.136
SUBTOTAL	0.000	0.000	0.091	1.495	1.994	1.359	0.000	0.000	0.000	4.939

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2207
TOTAL HOURS OF STABILITY CLASS A	109
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	109
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2207
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: 2008/11/20

MEAN WIND SPEED = 6.37

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - SEP 30, 2008

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	0.000	0.045	0.000	0.181	0.136	0.000	0.000	0.000	0.362
NNE	0.000	0.000	0.000	0.317	0.498	0.408	0.000	0.000	0.000	1.223
NE	0.000	0.000	0.000	0.408	0.091	0.000	0.000	0.000	0.000	0.498
ENE	0.000	0.000	0.000	0.272	0.091	0.000	0.000	0.000	0.000	0.362
E	0.000	0.000	0.000	0.181	0.045	0.000	0.000	0.000	0.000	0.227
ESE	0.000	0.000	0.000	0.136	0.091	0.000	0.000	0.000	0.000	0.227
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	0.091	0.045	0.000	0.000	0.000	0.000	0.136
S	0.000	0.000	0.000	0.408	0.045	0.045	0.000	0.000	0.000	0.498
SSW	0.000	0.000	0.045	0.725	0.227	0.000	0.000	0.000	0.000	0.997
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W	0.000	0.000	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.045
WNW	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.045
NW	0.000	0.000	0.000	0.045	0.000	0.045	0.000	0.000	0.000	0.091
NNW	0.000	0.000	0.000	0.227	0.181	0.181	0.000	0.000	0.000	0.589
SUBTOTAL	0.000	0.000	0.136	2.945	1.495	0.861	0.000	0.000	0.000	5.437

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2207
TOTAL HOURS OF STABILITY CLASS B	120
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	120
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2207
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: 2008/11/20

MEAN WIND SPEED = 5.61

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, 2008 - SEP 30, 2008

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	0.000	0.045	0.362	0.317	0.045	0.000	0.000	0.000	0.770
NNE	0.000	0.000	0.091	0.498	0.136	0.181	0.000	0.000	0.000	0.906
NE	0.000	0.000	0.045	0.453	0.045	0.091	0.000	0.000	0.000	0.634
ENE	0.000	0.000	0.045	0.045	0.000	0.045	0.000	0.000	0.000	0.136
E	0.000	0.000	0.000	0.453	0.000	0.000	0.000	0.000	0.000	0.453
ESE	0.000	0.000	0.000	0.136	0.000	0.000	0.000	0.000	0.000	0.136
SE	0.000	0.000	0.091	0.362	0.045	0.000	0.000	0.000	0.000	0.498
SSE	0.000	0.000	0.000	0.181	0.136	0.000	0.000	0.000	0.000	0.317
S	0.000	0.000	0.091	0.634	0.000	0.000	0.000	0.000	0.000	0.725
SSW	0.000	0.000	0.045	0.544	0.045	0.000	0.000	0.000	0.000	0.634
SW	0.000	0.000	0.091	0.272	0.091	0.000	0.000	0.000	0.000	0.453
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	0.045	0.045	0.000	0.000	0.000	0.000	0.000	0.091
WNW	0.000	0.000	0.000	0.045	0.045	0.000	0.000	0.000	0.000	0.091
NW	0.000	0.000	0.000	0.000	0.136	0.000	0.000	0.000	0.000	0.136
NNW	0.000	0.000	0.000	0.227	0.136	0.091	0.000	0.000	0.000	0.453
SUBTOTAL	0.000	0.000	0.589	4.304	1.133	0.453	0.000	0.000	0.000	6.479

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2207
TOTAL HOURS OF STABILITY CLASS C 143
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C 143
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2207
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: 2008/11/20

MEAN WIND SPEED = 4.85

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, 2008 - SEP 30, 2008

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	0.045	0.498	1.042	1.042	0.317	0.000	0.000	0.000	2.945
NNE	0.000	0.045	0.362	1.405	0.952	0.498	0.000	0.000	0.000	3.262
NE	0.000	0.045	0.906	1.223	0.453	0.408	0.000	0.000	0.000	3.036
ENE	0.000	0.091	1.087	0.272	0.091	0.227	0.000	0.000	0.000	1.767
E	0.000	0.045	0.544	0.362	0.045	0.091	0.000	0.000	0.000	1.087
ESE	0.000	0.091	0.997	0.317	0.000	0.000	0.000	0.000	0.000	1.405
SE	0.000	0.136	0.634	0.227	0.000	0.000	0.000	0.000	0.000	0.997
SSE	0.000	0.136	0.952	0.408	0.000	0.000	0.000	0.000	0.000	1.495
S	0.000	0.136	1.767	0.680	0.045	0.317	0.000	0.000	0.000	2.945
SSW	0.000	0.136	2.175	0.816	0.091	0.136	0.000	0.000	0.000	3.353
SW	0.000	0.045	0.770	0.453	0.136	0.000	0.000	0.000	0.000	1.405
WSW	0.000	0.091	0.589	0.136	0.000	0.000	0.000	0.000	0.000	0.816
W	0.000	0.136	0.181	0.091	0.045	0.000	0.000	0.000	0.000	0.453
WNW	0.000	0.045	0.408	0.181	0.136	0.045	0.000	0.000	0.000	0.816
NW	0.000	0.045	0.181	0.136	0.136	0.045	0.000	0.000	0.000	0.544
NNW	0.000	0.045	0.589	0.498	0.453	0.045	0.000	0.000	0.000	1.631
SUBTOTAL	0.000	1.314	12.642	8.246	3.625	2.130	0.000	0.000	0.000	27.957

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2207
TOTAL HOURS OF STABILITY CLASS D 617
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 617
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2207
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: 2008/11/20

MEAN WIND SPEED = 3.98

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - SEP 30, 2008

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	0.181	0.272	1.133	0.227	0.000	0.000	0.000	0.000	1.812
NNE	0.000	0.091	0.408	0.272	0.091	0.000	0.000	0.000	0.000	0.861
NE	0.000	0.227	0.317	0.136	0.045	0.000	0.045	0.000	0.000	0.770
ENE	0.000	0.272	0.544	0.000	0.000	0.000	0.000	0.000	0.000	0.816
E	0.000	0.227	0.408	0.045	0.000	0.000	0.000	0.000	0.000	0.680
ESE	0.000	0.091	0.272	0.000	0.000	0.000	0.000	0.000	0.000	0.362
SE	0.000	0.181	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.317
SSE	0.000	0.362	0.272	0.227	0.000	0.000	0.000	0.000	0.000	0.861
S	0.000	0.453	0.997	0.136	0.045	0.000	0.000	0.000	0.000	1.631
SSW	0.000	0.544	1.541	0.408	0.045	0.045	0.000	0.000	0.000	2.583
SW	0.000	0.362	0.816	0.045	0.000	0.000	0.000	0.000	0.000	1.223
WSW	0.000	0.680	0.725	0.045	0.000	0.000	0.000	0.000	0.000	1.450
W	0.000	1.087	0.634	0.045	0.000	0.000	0.000	0.000	0.000	1.767
WNW	0.000	1.087	0.453	0.136	0.000	0.000	0.000	0.000	0.000	1.676
NW	0.000	0.680	0.634	0.091	0.000	0.000	0.000	0.000	0.000	1.405
NNW	0.000	0.136	0.498	0.997	0.181	0.045	0.000	0.000	0.000	1.858
SUBTOTAL	0.000	6.661	8.926	3.715	0.634	0.091	0.045	0.000	0.000	20.072

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2207
TOTAL HOURS OF STABILITY CLASS E	443
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	443
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2207
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: 2008/11/20

MEAN WIND SPEED = 2.42

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - SEP 30, 2008

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	0.004	0.408	0.498	0.000	0.000	0.000	0.000	0.000	0.000	0.911
NNE	0.003	0.317	0.408	0.045	0.000	0.000	0.000	0.000	0.000	0.774
NE	0.003	0.317	0.272	0.045	0.000	0.000	0.000	0.000	0.000	0.637
ENE	0.002	0.181	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.364
E	0.002	0.227	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.410
ESE	0.001	0.091	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.137
SE	0.000	0.045	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.091
SSE	0.002	0.045	0.272	0.000	0.000	0.000	0.000	0.000	0.000	0.319
S	0.002	0.136	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.319
SSW	0.003	0.408	0.227	0.000	0.000	0.000	0.000	0.000	0.000	0.637
SW	0.005	0.680	0.453	0.000	0.000	0.000	0.000	0.000	0.000	1.138
WSW	0.008	0.952	0.680	0.000	0.000	0.000	0.000	0.000	0.000	1.639
W	0.014	1.858	1.042	0.000	0.000	0.000	0.000	0.000	0.000	2.914
WNW	0.021	2.855	1.586	0.000	0.000	0.000	0.000	0.000	0.000	4.462
NW	0.015	2.084	1.042	0.091	0.000	0.000	0.000	0.000	0.000	3.232
NNW	0.006	0.634	0.634	0.000	0.045	0.000	0.000	0.000	0.000	1.320
SUBTOTAL	0.091	11.237	7.748	0.181	0.045	0.000	0.000	0.000	0.000	19.302

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2207
TOTAL HOURS OF STABILITY CLASS F 426
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F 426
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2207
TOTAL HOURS CALM 2

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: 2008/11/20

MEAN WIND SPEED = 1.47

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - SEP 30, 2008

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	0.181	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.365
NNE	0.002	0.181	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.273
NE	0.002	0.317	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.365
ENE	0.002	0.227	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.410
E	0.002	0.317	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.365
ESE	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.046
SE	0.001	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.091
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.137
SSW	0.001	0.136	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.182
SW	0.003	0.408	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.501
WSW	0.007	0.680	0.453	0.000	0.000	0.000	0.000	0.000	0.000	1.139
W	0.014	1.903	0.544	0.000	0.000	0.000	0.000	0.000	0.000	2.461
WNW	0.022	2.447	1.359	0.000	0.000	0.000	0.000	0.000	0.000	3.828
NW	0.026	2.990	1.586	0.000	0.000	0.000	0.000	0.000	0.000	4.603
NNW	0.006	0.680	0.317	0.000	0.000	0.000	0.000	0.000	0.000	1.003
SUBTOTAL	0.091	10.739	4.984	0.000	0.000	0.000	0.000	0.000	0.000	15.813

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2207
TOTAL HOURS OF STABILITY CLASS G	349
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G	349
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2207
TOTAL HOURS CALM	2

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: 2008/11/20

MEAN WIND SPEED = 1.32

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

INT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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, 2008 - DEC 31, 2008

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	0.046	0.046	0.366	0.000	0.000	0.000	0.504
NNE	0.000	0.000	0.000	0.000	0.137	0.137	0.000	0.000	0.000	0.275
NE	0.000	0.000	0.000	0.046	0.000	0.046	0.000	0.000	0.000	0.092
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	0.000	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	0.000	0.000	0.000	0.000	0.092
SSW	0.000	0.000	0.000	0.046	0.504	0.046	0.000	0.000	0.000	0.595
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	0.046	0.000	0.000	0.000	0.000	0.046
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	0.000	0.000	0.000	0.000	0.046
NW	0.000	0.000	0.000	0.000	0.000	0.183	0.000	0.000	0.000	0.183
NNW	0.000	0.000	0.000	0.000	0.046	0.137	0.000	0.000	0.000	0.183
SUBTOTAL	0.000	0.000	0.092	0.183	1.007	0.916	0.000	0.000	0.000	2.198

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2184
TOTAL HOURS OF STABILITY CLASS A	48
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	48
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2184
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: 2009/02/26

MEAN WIND SPEED = 7.15

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - DEC 31, 2008

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	0.000	0.000	0.092	0.183	0.275	0.046	0.000	0.000	0.595
NNE	0.000	0.000	0.000	0.183	0.092	0.183	0.000	0.000	0.000	0.458
NE	0.000	0.000	0.000	0.092	0.046	0.000	0.000	0.000	0.000	0.137
ENE	0.000	0.000	0.092	0.092	0.000	0.000	0.000	0.000	0.000	0.183
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.046
S	0.000	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.092
SSW	0.000	0.000	0.000	0.275	0.275	0.046	0.000	0.000	0.000	0.595
SW	0.000	0.000	0.046	0.092	0.046	0.000	0.000	0.000	0.000	0.183
WSW	0.000	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.092
W	0.000	0.000	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.092
WNW	0.000	0.000	0.000	0.000	0.046	0.092	0.000	0.000	0.000	0.137
NW	0.000	0.000	0.046	0.000	0.000	0.183	0.000	0.000	0.000	0.229
NNW	0.000	0.000	0.000	0.092	0.046	0.137	0.000	0.000	0.000	0.275
SUBTOTAL	0.000	0.000	0.229	1.007	0.916	0.962	0.046	0.000	0.000	3.159

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2184
TOTAL HOURS OF STABILITY CLASS B	69
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	69
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2184
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: 2009/02/26

MEAN WIND SPEED = 6.54

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - DEC 31, 2008

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	0.000	0.046	0.321	0.137	0.321	0.000	0.000	0.000	0.824
NNE	0.000	0.000	0.137	0.366	0.366	0.092	0.000	0.000	0.000	0.962
NE	0.000	0.000	0.137	0.137	0.092	0.000	0.000	0.000	0.000	0.366
ENE	0.000	0.000	0.046	0.092	0.000	0.000	0.000	0.000	0.000	0.137
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	0.092	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	0.092	0.046	0.000	0.000	0.000	0.000	0.183
S	0.000	0.000	0.092	0.137	0.046	0.046	0.000	0.000	0.000	0.321
SSW	0.000	0.000	0.046	0.321	0.046	0.046	0.000	0.000	0.000	0.458
SW	0.000	0.000	0.000	0.366	0.000	0.046	0.000	0.000	0.000	0.412
WSW	0.000	0.000	0.046	0.046	0.046	0.092	0.000	0.000	0.000	0.229
W	0.000	0.000	0.000	0.137	0.046	0.046	0.000	0.000	0.000	0.229
WNW	0.000	0.000	0.000	0.000	0.046	0.183	0.000	0.000	0.000	0.229
NW	0.000	0.000	0.000	0.046	0.183	0.321	0.000	0.000	0.000	0.549
NNW	0.000	0.000	0.092	0.275	0.137	0.275	0.000	0.000	0.000	0.778
SUBTOTAL	0.000	0.000	0.778	2.473	1.190	1.465	0.000	0.000	0.000	5.907

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2184
TOTAL HOURS OF STABILITY CLASS C	129
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	129
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2184
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: 2009/02/26

MEAN WIND SPEED = 5.76

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - DEC 31, 2008

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	0.092	0.962	1.145	1.053	1.007	0.137	0.000	0.000	4.396
NNE	0.000	0.046	1.236	1.832	1.053	0.687	0.046	0.000	0.000	4.899
NE	0.000	0.000	0.870	0.641	0.275	0.183	0.000	0.000	0.000	1.969
ENE	0.000	0.183	0.733	0.229	0.046	0.000	0.000	0.000	0.000	1.190
E	0.000	0.000	0.366	0.000	0.000	0.000	0.000	0.000	0.000	0.366
ESE	0.000	0.046	0.366	0.046	0.000	0.000	0.000	0.000	0.000	0.458
SE	0.000	0.092	0.229	0.092	0.092	0.046	0.000	0.000	0.000	0.549
SSE	0.000	0.137	0.458	0.137	0.046	0.000	0.000	0.000	0.000	0.778
S	0.000	0.183	0.962	0.412	0.092	0.229	0.046	0.000	0.000	1.923
SSW	0.000	0.229	1.786	1.557	0.962	0.733	0.046	0.000	0.000	5.311
SW	0.000	0.229	1.282	0.687	0.366	0.000	0.000	0.000	0.000	2.564
WSW	0.000	0.366	0.458	0.412	0.046	0.000	0.000	0.000	0.000	1.282
W	0.000	0.137	1.053	0.229	0.137	0.229	0.000	0.000	0.000	1.786
WNW	0.000	0.046	0.183	0.458	0.549	0.458	0.000	0.000	0.000	1.694
NW	0.000	0.046	0.229	0.595	1.145	0.870	0.046	0.000	0.000	2.930
NNW	0.000	0.000	0.687	0.321	0.595	1.603	0.275	0.000	0.000	3.480
SUBTOTAL	0.000	1.832	11.859	8.791	6.456	6.044	0.595	0.000	0.000	35.577

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2184
TOTAL HOURS OF STABILITY CLASS D 777
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 777
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2184
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: 2009/02/26

MEAN WIND SPEED = 4.96

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - DEC 31, 2008

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	0.046	0.458	0.504	0.321	0.000	0.000	0.000	0.000	1.328
NNE	0.000	0.046	0.549	0.275	0.092	0.000	0.000	0.000	0.000	0.962
NE	0.000	0.137	0.733	0.229	0.000	0.000	0.000	0.000	0.000	1.099
ENE	0.000	0.046	0.824	0.137	0.000	0.000	0.000	0.000	0.000	1.007
E	0.000	0.137	0.366	0.000	0.000	0.000	0.000	0.000	0.000	0.504
ESE	0.000	0.000	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.229
SE	0.000	0.092	0.092	0.183	0.000	0.000	0.000	0.000	0.000	0.366
SSE	0.000	0.092	0.137	0.092	0.000	0.000	0.000	0.000	0.000	0.321
S	0.000	0.275	0.733	0.183	0.183	0.275	0.000	0.000	0.000	1.648
SSW	0.000	0.137	1.465	1.374	0.595	0.321	0.046	0.000	0.000	3.938
SW	0.000	0.595	1.190	0.366	0.046	0.000	0.000	0.000	0.000	2.198
WSW	0.000	0.504	0.778	0.046	0.092	0.000	0.000	0.000	0.000	1.419
W	0.000	0.549	1.007	0.229	0.137	0.000	0.000	0.000	0.000	1.923
WNW	0.000	0.412	1.236	0.366	0.046	0.000	0.000	0.000	0.000	2.060
NW	0.000	0.321	1.053	0.275	0.229	0.137	0.000	0.000	0.000	2.015
NNW	0.000	0.137	0.412	0.504	0.595	0.275	0.000	0.000	0.000	1.923
SUBTOTAL	0.000	3.526	11.264	4.762	2.335	1.007	0.046	0.000	0.000	22.940

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2184
TOTAL HOURS OF STABILITY CLASS E	501
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	501
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2184
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: 2009/02/26

MEAN WIND SPEED = 3.29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2008
WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - DEC 31, 2008

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	0.275	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.366
NNE	0.000	0.092	0.229	0.046	0.000	0.000	0.000	0.000	0.000	0.366
NE	0.000	0.092	0.275	0.046	0.000	0.000	0.000	0.000	0.000	0.412
ENE	0.000	0.137	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.229
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	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.092
SSE	0.000	0.183	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.183
S	0.000	0.137	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.229
SSW	0.000	0.092	0.366	0.092	0.000	0.137	0.000	0.000	0.000	0.687
SW	0.000	0.275	0.412	0.000	0.000	0.000	0.000	0.000	0.000	0.687
WSW	0.000	0.504	1.099	0.000	0.000	0.000	0.000	0.000	0.000	1.603
W	0.000	1.694	1.282	0.000	0.000	0.000	0.000	0.000	0.000	2.976
WNW	0.000	2.427	1.328	0.000	0.000	0.000	0.000	0.000	0.000	3.755
NW	0.000	1.328	1.419	0.046	0.000	0.000	0.000	0.000	0.000	2.793
NNW	0.000	0.229	0.412	0.092	0.046	0.000	0.000	0.000	0.000	0.778
SUBTOTAL	0.000	7.647	7.234	0.321	0.046	0.137	0.000	0.000	0.000	15.385

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2184
TOTAL HOURS OF STABILITY CLASS F 336
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F 336
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2184
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: 2009/02/26

MEAN WIND SPEED = 1.67

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

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WATTS BAR NUCLEAR PLANT
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2008 - DEC 31, 2008

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	0.137	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.276
NNE	0.000	0.000	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.092
NE	0.001	0.183	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.230
ENE	0.001	0.183	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.230
E	0.000	0.046	0.000	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	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.092
SSE	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.046
S	0.001	0.000	0.183	0.000	0.000	0.000	0.000	0.000	0.000	0.184
SSW	0.001	0.046	0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.184
SW	0.002	0.275	0.321	0.000	0.000	0.000	0.000	0.000	0.000	0.597
WSW	0.006	0.916	0.870	0.000	0.000	0.000	0.000	0.000	0.000	1.791
W	0.009	1.786	1.099	0.046	0.000	0.000	0.000	0.000	0.000	2.939
WNW	0.013	2.152	1.877	0.000	0.000	0.000	0.000	0.000	0.000	4.042
NW	0.010	2.152	0.916	0.000	0.000	0.000	0.000	0.000	0.000	3.077
NNW	0.003	0.733	0.275	0.000	0.000	0.000	0.000	0.000	0.000	1.010
SUBTOTAL	0.046	8.700	6.044	0.046	0.000	0.000	0.000	0.000	0.000	14.835

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 2184
TOTAL HOURS OF STABILITY CLASS G 324
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G 324
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 2184
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: 2009/02/26

MEAN WIND SPEED = 1.41

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

ATTACHMENT 1

Deviations from ODCM Controls/Surveillance Requirements

07/07/2008	1/2.1.1 Table 1.1-1 Item 2.a Action C	Required ERCW grab sample for 0-RE-90-133/140 inoperability was not obtained within the required time. ERCW radiation monitors 0-RE-90-133/140 were not declared inoperable when breaker 30 on vital instrument power board 1-I was tagged for maintenance. Chemistry was not notified by Operations when it was discovered that the breaker supplied power to the common sample pump on 0-RE-90-133/140.

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ATTACHMENT 2

Radioactive Effluent Monitoring Instrumentation Inoperable for Greater than 30 days

12/16/2007	1/2.1.2 Control 1.1.2 Action B Table 1.1-2 Item 3 a.& c.	Unit 2 Shield Building Exhaust Radiation Monitor 2-RE-90-400 was inoperable from December 16, 2007 04:40 until January 18, 2008 16:52. The inoperable period was greater than 30 days due to the replacement the radiation monitor sample pump. During this period compensatory sampling carts were installed and noble gas grab samples were obtained during any releases.