



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

APR 27 2001

10 CFR 50.36a

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

Gentlemen:

In the Matter of )  
Tennessee Valley Authority )

Docket No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - 2000 ANNUAL RADIOACTIVE  
EFFLUENT RELEASE REPORT (ARERR)

Provided in Enclosure 1 is the 2000 ARERR for WBN. This report fulfills the requirements of Technical Specification 5.9.3 and addresses the period from January 1, 2000, through December 31, 2000. Attachment 1 of the ARERR documents deviations which have occurred from Offsite Dose Calculation Manual (ODCM) requirements. Attachment 2 documents that there were no radiation monitors which were inoperable for greater than 30 days. Provided in Attachment 3 is a copy of Revision 5 of the ODCM. This revision was in effect as of November 11, 2000, and is provided in accordance with Technical Specification 5.7.2.3. Revision 1 of the ODCM was provided with the 1999 AREER. Therefore, the attached copy of the ODCM has been annotated to indicate the changes to the document that were made by Revisions 2, 3, 4 and 5.

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

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If you should have any questions, please contact me at (423) 365-1824.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. L. Pace', with a stylized flourish at the end.

P. L. Pace

Manager, Licensing and Industry Affairs

Enclosures

cc (Enclosures):

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**Enclosure 1**

**Watts Bar Nuclear Plant**

**Annual Radioactive Effluent Release Report**

2000  
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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

ATTACHMENT 1.0  
Deviations from ODCM Controls/Surveillance Requirements

Event Date(s)	ODCM Surveillance Missed	Description of Event/Resolution
03/13/2000	1/2.1.2 Table 1.1-2 Item 3.d	<p>Chemistry was notified at 1005 on 3/13/99 that ABGTS Train A had been started and run for approximately 50 minutes (from 0917 until 0958). This was in violation of ODCM requirements that all releases be suspended from the Unit 1 Shield Building Exhaust (SBE) while the Unit 1 SBE isokinetic sampler is inoperable. The sampler was inoperable at the time of this release. Since the Auxiliary Building Exhaust Radiation Monitor (0-RE-90-101) was also inoperable at that time, Chemistry was obtaining 12-hour compensatory grab samples of noble gas and a continuous iodine and particulate compensatory sample from the ABE monitor. Gas samples obtained at 0115 and 1415 on 3/13/99 indicated that there was no gaseous radioactivity in the ABE. However, continuously collected iodine and particulate compensatory samples obtained from the ABE during this time did indicate that iodine and particulate activity was present in the ABE effluent stream. A release permit was generated to account for the potential activity released through the AGBTS-A run. The ABE iodine and particulate activities were reduced by a factor of 99% to account for the HEPA and charcoal filters in the ABGTS train. The design flow rate of 9000 cfm was used for the entire release period to quantify the release. The permit supports the conclusion that no ODCM release limits were exceeded.</p>

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ATTACHMENT 2.0  
Radiation Monitors Inoperable for Greater than 30 days

NONE

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ATTACHMENT 3.0  
Offsite Dose Calculation Manual

## **Enclosure 2**

### **Watts Bar Nuclear Plant Process Control Program (PCP) Reporting Requirements**

The PCP was removed from the Technical Requirements Manual and incorporated into Revision 0 of Plant Administrative Instruction (PAI) 13.01, "Process Control Program." This change became effective on January 15, 1999. Section 2.4.D.2 and Section 2.4.E of PAI-13.01 address the reporting requirements applicable to the PCP. Section 2.4.D.2 requires that revisions to the PCP which occurred during the reporting period of the ARERR be forwarded to NRC with the ARERR. For the 2000 reporting period, there were no revisions to PAI-13.01 and Revision 0 remains in effect. Section 2.4.E of PAI-13.01 requires that major changes to the radiological waste treatment systems be reported in conjunction with the ARERR. For this reporting period, no major changes to the radiological waste treatment systems were made.

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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  $\mu\text{Ci/ml}$  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.



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**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  $2.0\text{E-}04 \mu\text{Ci/ml}$  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 batch tank prior to release. The total activity of a released batch is determined by summing each nuclide's concentration and multiplying by the total volume discharged. 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, the volume from each Condensate Demineralizer tank release is obtained and the feedwater tritium concentration is used to determine the curies of tritium released.

**Continuous Releases (Turbine Building Sump and Steam Generator Blowdown)**

During periods of no significant identified primary to secondary leakage, the volume released from the TBS and SGB is obtained and the feedwater tritium concentration is used to determine the curies of tritium released.

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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 quantity of noble gases released through the shield building exhaust due to purging of containment is determined by sampling prior to the beginning of the purge, and periodically during the purge. The total activity released is determined from the total flow recorded for each sample period. 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 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 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. Charcoal and particulate samples are taken from the shield and auxiliary building exhausts and 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 auxiliary and shield building exhausts 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		Units
	1st Half	2nd Half	
A. Liquid (Radwaste only)			
1. Number of releases	41	65	Each
2. Total time period of releases	6513	11575	Minutes
3. Maximum time period of release	217	345	Minutes
4. Average time period of releases	159	178	Minutes
5. Minimum time period for release	1	15	Minutes
6. Average dilution stream flow during release periods	13,190	17,890	CFS
B. Gaseous (Batches only - containment purges, and waste gas decay tanks)			
1. Number of releases	7	28	Each
2. Total time period of releases	42575	107366	Minutes
3. Maximum time period for release	34800	40666	Minutes
4. Average time period for releases	6082	3835	Minutes
5. Minimum time period for release	3	23	Minutes

**6. Abnormal Releases**

	Value		Units
	1st Half	2nd Half	
A. Liquid			
Number of Releases	none	none	Ci
Total Activity Released	N/A	N/A	
B. Gaseous			
Number of Releases	none	none	Ci
Total Activity Released	N/A	N/A	

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TABLE 1-A  
Liquid Effluents - Summation of All Releases  
Unit: 1  
Starting : 1-Jan-2000    Ending : 30-Jun-2000

Type Of Effluent	Units	Quarter 1	Quarter 2	Est. Tot Error %
<b>A. Fission &amp; Activation Products</b>				
1. Total Release (Not Including Tritium, Gases, Alpha)	Ci	9.015E-03	1.511E-02	25%
2. Average Diluted Concentration During Period	μCi/ml	8.814E-10	1.436E-09	
3. Percent Of Applicable Limit	%	*	*	
<b>B. Tritium</b>				
1. Total Release	Ci	2.262E+02	5.075E+02	18%
2. Average Diluted Concentration During Period	μCi/ml	2.212E-02	4.825E-02	
3. Percent Of Applicable Limit	%	*	*	
<b>C. Dissolved And Entrained Gases</b>				
1. Total Release	Ci	2.361E-04	2.201E-03	39%
2. Average Diluted Concentration During Period	μCi/ml	2.308E-11	2.092E-11	
3. Percent Of Applicable Limit	%	1.15E-05	1.05E-05	
<b>D. Gross Alpha Radioactivity</b>				
1. Total Release	Curies	0.000E+00**	0.000E+00	N/A***
<b>E. Waste Volume Released (Pre-Dilution)</b>				
	Liters	2.064E+08	1.479E+08	2%
<b>F. Volume Of Dilution Water Used</b>				
	Liters	1.002E+10	1.037E+10	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  
Unit: 1  
Starting : 1-Jul-2000 Ending : 31-Dec-2000

Type Of Effluent	Units	Quarter 3	Quarter 4	Est. Tot Error %
<b>A. Fission &amp; Activation Products</b>				
1. Total Release (Not Including Tritium, Gases, Alpha)	Ci	3.764E-02	1.903E-02	25%
2. Average Diluted Concentration During Period	μCi/ml	2.803E-09	1.134E-08	
3. Percent Of Applicable Limit	%	*	*	
<b>B. Tritium</b>				
1. Total Release	Ci	3.460E+02	3.936E+01	18%
2. Average Diluted Concentration During Period	μCi/ml	2.576E-05	2.345E-05	
3. Percent Of Applicable Limit	%	*	*	
<b>C. Dissolved And Entrained Gases</b>				
1. Total Release	Ci	1.200E-02	6.483E-05	39%
2. Average Diluted Concentration During Period	μCi/ml	8.939E-10	3.862E-11	
3. Percent Of Applicable Limit	%	4.47E-04	1.93E-05	
<b>D. Gross Alpha Radioactivity</b>				
1. Total Release	Ci	0.000E+00**	0.000E+00	N/A***
<b>E. Waste Volume Released (Pre-Dilution)</b>				
	Liters	7.935E+07	1.258E+07	2%
<b>F. Volume Of Dilution Water Used</b>				
	Liters	1.335E10	1.666E+09	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  
Liquid Effluents  
Unit: 1

Starting : 1-Jan-2000 Ending : 30-Jun-2000

Nuclide	Unit	Continuous Mode		Batch Mode	
		Quarter 1	Quarter 2	Quarter 1	Quarter 2
H-3	Ci	2.92E-02	1.38E-01	2.262E+02	5.076E+02
<b>Fission &amp; Activation Products</b>					
AG-110m	Ci	0.00E+00*	0.00E+00	0.00E+00	1.03E-05
Co-57	Ci	0.00E+00	0.00E+00	4.21E-05	1.58E-05
Co-58	Ci	0.00E+00	0.00E+00	1.61E-03	2.76E-03
Co-60	Ci	0.00E+00	0.00E+00	1.07E-03	1.11E-03
Cs-137	Ci	0.00E+00	0.00E+00	8.83E-06	0.00E+00
Fe-55	Ci	0.00E+00	0.00E+00	1.08E-02	1.12E-02
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	3.01E-05
Mn-54	Ci	0.00E+00	0.00E+00	8.29E-05	7.06E-05
Nb-95	Ci	0.00E+00	0.00E+00	3.00E-05	3.49E-06
Sb-125	Ci	0.00E+00	0.00E+00	1.28E-03	8.75E-04
Zr-95	Ci	0.00E+00	0.00E+00	1.13E-05	0.00E+00
Totals	Ci	0.00E+00	0.00E+00	1.49E-02	1.61E-02
<b>Dissolved And Entrained Gases</b>					
Ar-41	Ci	0.00E+00	0.00E+00	0.00E+00	3.91E-05
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	6.42E-06
Xe-133	Ci	0.00E+00	0.00E+00	2.36E-04	1.94E-03
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	2.06E-05
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	1.94E-04
Totals	Ci	0.00E+00	0.00E+00	2.36E-04	2.20E-03

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

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TABLE 2-B  
Liquid Effluents  
Unit: 1  
Starting : 1-Jul-2000 Ending : 31-Dec-2000

Nuclide	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4
H-3	Ci	1.27E+00	6.97E-01	3.46E+02	3.96E+01
<b>Fission &amp; Activation Products</b>					
Ag-110m	Ci	0.00E+00*	0.00E+00	1.21E-05	0.00E+00
Co-57	Ci	0.00E+00	0.00E+00	1.41E-05	1.22E-05
Co-58	Ci	0.00E+00	4.12E-05	4.15E-03	8.92E-03
Co-60	Ci	0.00E+00	0.00E+00	1.54E-03	4.29E-04
Cr-51	Ci	0.00E+00	0.00E+00	4.14E-04	4.83E-04
Cs-137	Ci	0.00E+00	0.00E+00	1.16E-04	0.00E+00
F-18	Ci	0.00E+00	0.00E+00	3.45E-05	1.00E-05
Fe-55	Ci	0.00E+00	0.00E+00	1.39E-02	2.17E-03
Fe-59	Ci	0.00E+00	0.00E+00	8.82E-06	7.53E-05
I-131	Ci	0.00E+00	0.00E+00	6.78E-05	0.00E+00
I-132	Ci	0.00E+00	0.00E+00	9.59E-06	0.00E+00
I-133	Ci	0.00E+00	0.00E+00	1.53E-04	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	1.30E-04	4.29E-05
Mo-99	Ci	0.00E+00	0.00E+00	2.40E-05	0.00E+00
Nb-95	Ci	0.00E+00	0.00E+00	2.08E-05	4.36E-05
Sb-124	Ci	0.00E+00	0.00E+00	1.56E-04	2.13E-04
Sb-125	Ci	0.00E+00	0.00E+00	2.42E-03	1.50E-03
Sb-126	Ci	0.00E+00	0.00E+00	1.28E-03	0.00E+00
Tc-99m	Ci	0.00E+00	0.00E+00	2.40E-05	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	1.42E-05	1.40E-05
Totals	Ci	0.00E+00	4.12E-05	2.45E-02	1.39E-02
<b>Dissolved And Entrained Gases</b>					
Ar-41	Ci	0.00E+00	0.00E+00	2.68E-4	0.00E+00
Kr-85m	Ci	0.00E+00	0.00E+00	3.64E-05	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	1.05E-02	6.48E-05
Xe-133 m	Ci	0.00E+00	0.00E+00	7.68E-05	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	7.68E-05	0.00E+00
Totals	Ci	0.00E+00	0.00E+00	1.21E-02	6.48E-05

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

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TABLE 3-A  
Gaseous Effluents - Summation of All Releases  
Unit: 1  
Starting : 1-Jan-2000    Ending : 30-Jun-2000

Type Of Effluent	Units	Quarter 1	Quarter 2	Est. Tot Error %
<b>A. Fission &amp; Activation Products</b>				
1. Total Release	Ci	2.125E+00	1.284E+01	22
2. Average Release Rate For Period	μCi/sec	2.703E-01	1.634E+00	
3. Percent Of Applicable Limit	%	*	*	
<b>B. Radioiodines</b>				
1. Total Iodine-131	Ci	0.000E+00	0.000E+00	N/A***
2. Average Release Rate For Period	μCi/sec	0.000E+00	0.000E+00	
3. Percent Of Applicable Limit	%	*	*	
<b>C. Particulates</b>				
1. Particulates (Half-Lives>8 Days)	Ci	5.285E-06	0.000E+00	N/A
2. Average Release Rate For Period	μCi/sec	6.722E-07	0.000E+00	
3. Percent Of Applicable Limit	%	*	*	
4. Gross Alpha Radioactivity	Ci	0.000E+00	0.000E+00	
<b>D. Tritium</b>				
1. Total Release	Ci	3.181E+00	5.748E+00	11
2. Average Release Rate For Period	μCi/sec	4.046E-01	7.31E-01	
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  
Unit: 1  
Starting : 1-Jul-2000 Ending : 31-Dec-2000

Type Of Effluent	Units	Quarter 3	Quarter 4	Est. Tot Error %
<b>A. Fission &amp; Activation Products</b>				
1. Total Release	Ci	2.908E+01	2.200E-02	22
2. Average Release Rate For Period	μCi/sec	3.659E+00	2.768E-03	
3. Percent Of Applicable Limit	%	*	*	
<b>B. Radioiodines</b>				
1. Total Iodine-131	Ci	0.000E+00**	0.000E+00	***N/A
2. Average Release Rate For Period	μCi/sec	0.000E+00	0.000E+00	
3. Percent Of Applicable Limit	%	*	*	
<b>C. Particulates</b>				
1. Particulates (Half-Lives>8 Days)	Ci	1.101E-05	2.107E-05	***N/A
2. Average Release Rate For Period	μCi/sec	1.385E-06	2.650E-06	
3. Percent Of Applicable Limit	%	*	*	
4. Gross Alpha Radioactivity	Ci	0.000E+00	0.000E+00	
<b>D. Tritium</b>				
1. Total Release	Ci	3.572E+00	2.163E+00	11
2. Average Release Rate For Period	μCi/sec	4.494E-01	2.721E-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  
Gaseous Effluents-Ground Level Releases  
Unit: 1  
Starting : 1-Jan-2000    Ending : 30-Jun-2000

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 1	Quarter 2	Quarter 1	Quarter 2
Fission Gases					
Kr-85m	Ci	1.47E-06	0.00E+00	0.00E+00	0.00E+00
Kr-87	Ci	5.09E-06	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Ci	1.02E-04	0.00E+00	0.00E+00	0.00E+00
Kr-85	Ci	1.25E-06	1.25E-06	4.56E-03	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	1.05E-01	0.00E+00
Xe-135	Ci	1.50E-05	0.00E+00	1.41E-02	1.91E-01
Xe-133	Ci	7.08E-06	0.00E+00	6.51E-01	5.05E+00
Ar-41	Ci	1.68E-05	0.00E+00	1.35E+00	7.60E+00
Total	Ci	1.49E-04	1.25E-06	2.13E+00	1.28E+01
Iodines					
I-133	Ci	7.57E-08	0.00E+00	0.00E+00	0.00E+00
I-135	Ci	1.29E-07	0.00E+00	0.00E+00	0.00E+00
I-132	Ci	1.32E-07	0.00E+00	0.00E+00	0.00E+00
I-134	Ci	2.21E-07	0.00E+00	0.00E+00	0.00E+00
Total	Ci	5.58E-07	0.00E+00	0.00E+00	0.00E+00
Particulates					
Co-58	Ci	3.17E-08	0.00E+00	0.00E+00	0.00E+00
Rb-89	Ci	6.58E-08	0.00E+00	0.00E+00	0.00E+00
Na-24	Ci	1.66E-07	0.00E+00	0.00E+00	0.00E+00
Cs-138	Ci	2.28E-07	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	5.25E-06	0.00E+00	0.00E+00	0.00E+00
F-18	Ci	1.29E-05	0.00E+00	0.00E+00	0.00E+00
Br-82	Ci	0.00E+00	7.82E-08	0.00E+00	1.20E-06
Total	Ci	1.87E-05	7.82E-08	0.00E+00	1.20E-06
H-3	Ci	2.24E+00	2.55E+00	9.43E-01	3.20E+00

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

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TABLE 4-B  
Gaseous Effluents-Ground Level Releases  
Unit: 1  
Starting : 1-Jul-2000    Ending : 31-Dec-2000

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4
Fission Gases					
Xe-133	Ci	0.00E+00*	0.00E+00*	2.85E-01	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	4.95E-05	2.68E-04
Kr-85	Ci	4.68E-06	1.41E-06	4.62E-03	6.47E-04
Xe-133	Ci	0.00E+00	0.00E+00	4.50E+00	5.49E-03
Ar-41	Ci	0.00E+00	0.00E+00	2.43E+01	1.56E-02
Total	Ci	4.68E-06	1.41E-06	2.91E+01	2.20E-02
Iodines					
Total	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
Co-58	Ci	4.84E-06	2.11E-05	0.00E+00	0.00E+00
Co-60	Ci	6.16E-06	0.00E+00	0.00E+00	0.00E+00
Br-82	Ci	3.64E-06	0.00E+00	0.00E+00	0.00E+00
Total	Ci	1.46E-05	2.11E-05	0.00E+00	0.00E+00
H-3	Ci	2.37E+00	2.13E+00	1.21E+00	3.23E-02

\* 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)**

<b>1. <u>Type of Waste</u></b>	<b><u>Unit</u></b>	<b><u>12 Month Period</u></b>	<b><u>Est. Tot. Error %</u></b>
a. Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup> Ci	14.71 326.7	N/A N/A
b. Dry Active Waste, Compressible Waste Contaminated Equipment, etc.	m <sup>3</sup> Ci	235.5 0.957	N/A N/A
c. Irradiated Components, Control Rods, etc.	m <sup>3</sup> Ci	0 0	N/A N/A

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

	<b>Percent</b>	<b>Ci</b>
a. Spent resins, filter sludges, evaporator bottoms, etc. (nuclides determined by measurement)		
H-3	0.40	1.307
C-14	0.50	1.634
Mn-54	7.41	24.208
Fe-55	29.5	96.38
Co-57	0.50	1.634
Co-58	6.60	21.562
Co-60	16.4	53.579
Ni-59	0.24	0.784
Ni-63	34.9	114.018
Cd-109	0.28	0.915
Sb-125	0.54	1.764
Cs-134	0.59	1.928
Cs-137	1.37	4.476

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TABLE 5-A  
SOLID WASTE (RADIOACTIVE SHIPMENTS)

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

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

Be-7	0.18	.0017
Cr-51	0.18	.0017
Mn-54	2.47	.0236
Fe-55	54.6	.5225
Co-57	0.12	.0011
Co-58	6.72	.0643
Co-60	23.7	.2268
Ni-63	8.57	.0820
Zn-65	0.19	.0018
Zr-95	0.76	.0072
Nb-95	1.56	.0149
Sn-113	0.13	.0029
Sb-125	0.79	.0075
Cs-137	0.11	.0011

c. Irradiated Components

N/A                      N/A

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TABLE 5-B  
SOLID WASTE (RADIOACTIVE SHIPMENTS)

**3. Solid Waste Disposition**

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
4	Motor Freight	Sequoyah Nuclear Plant
7	Motor Freight	Oak Ridge, TN

**4. Irradiated Fuel Shipments (Disposition)**

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

**5. Solidification of Waste**

Was solidification performed? \_\_\_\_\_ No \_\_\_\_\_

If yes, solidification media: \_\_\_\_\_ N/A \_\_\_\_\_

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**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 in Tables 9A through 12G.

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**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).



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**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.

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**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 approximately 15.5 mR/quarter at onsite (at or near the site boundary) stations and approximately 14.0 mR/quarter at offsite stations or approximately 1.5 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 TLD measurements for 2000 indicate that the highest onsite TLD reading outside the Radiological Control Area was 340 mrem. Using this value, subtracting an annual background value of approximately 62 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 64 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 well 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
<b>External</b>				
Gamma Air	3.48E-03 mrad	5 mrad	< 1%	ENE/1370 meters
Beta Air	1.55E-03 mrad	10 mrad	< 1%	ESE/1370 meters
<b>Submersion</b>				
Total Body	1.75E-03 mrem	N/A	N/A	SE/1372 meters
Skin	2.62E-03 mrem	N/A	N/A	SE/1372 meters
<b>Organ Doses</b>				
Child/Thyroid	3.87E-03 mrem	7.5 mrem	< 1%	SSE/1676 meters
Child/Total Body	3.88E-03 mrem	7.5 mrem	< 1%	SSE/1676 meters

**Population Doses**

Total Body Dose 1.48E-02 man-rem  
Maximum Organ Dose (organ) 1.48E-02 man-rem (thyroid)

**Second Quarter**

**Individual Doses**

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
<b>External</b>				
Gamma Air	2.94E-02 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	1.32E-02mrad	10 mrad	< 1%	ESE/1250 meters
<b>Submersion</b>				
Total Body	1.05E-02 mrem	N/A	N/A	SE/1372 meters
Skin	1.59E-02 mrem	N/A	N/A	SE/1372 meters
<b>Organ Doses</b>				
Child/Thyroid	6.36E-03 mrem	7.5 mrem	< 1%	ESE/4758 meters
Child/Total Body	6.36E-03 mrem	7.5 mrem	< 1%	ESE/4758 meters

**Population Doses**

Total Body Dose 2.77E-02 man-rem  
Maximum Organ Dose (organ) 2.77E-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
<b>External</b>				
Gamma Air	1.19E-01 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	4.56E-02 mrad	10 mrad	< 1%	ESE/1250 meters
<b>Submersion</b>				
Total Body	6.59E-02 mrem	N/A	N/A	SE/1372 meters
Skin	9.78E-02 mrem	N/A	N/A	SE/1372 meters
<b>Organ Doses</b>				
Child/Thyroid	2.21E-02mrem	7.5 mrem	< 1%	SSE/1676 meters
Child/Total Body	2.22E-02 mrem	7.5 mrem	< 1%	SSE/1676 meters

**Population Doses**

Total Body Dose                      2.45E-02 man-rem  
Maximum Organ Dose (organ)      2.45E-02 man-rem (thyroid)

**Fourth Quarter**

**Individual Doses**

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
<b>External</b>				
Gamma Air	5.92E-05 mrad	5 mrad	< 1%	ESE/1250 meters
Beta Air	2.46E-05 mrad	10 mrad	< 1%	ESE/1250 meters
<b>Submersion</b>				
Total Body	3.56E-05 mrem	N/A	N/A	SE/1372 meters
Skin	5.22E-05 mrem	N/A	N/A	SE/1372 meters
<b>Organ Doses</b>				
Child/Thyroid	2.27E-03 mrem	7.5 mrem	< 1%	SSE/1676 meters
Child/Total Body	2.28E-03 mrem	7.5 mrem	< 1%	SSE/1676 meters

**Population Doses**

Total Body Dose                      8.47E-03 man-rem  
Maximum Organ Dose (organ)      8.47E-03 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
Child	Total Body	2.4E-03	1.5 mrem	< 1 %
Child	Liver	2.5E-03	5 mrem	< 1 %
Child	Thyroid	2.4E-03	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 13,098

**Population Doses**

Total Body Dose                      1.3E-01 man-rem  
Maximum Organ Dose (organ)      1.3E-01 man-rem (Liver)

**Second Quarter**

**Individual Doses (mrem)**

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	5.0E-03	1.5 mrem	< 1 %
Child	Bone	5.1E-03	5 mrem	< 1 %
Child	Thyroid	5.0E-03	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 13,282

**Population Doses**

Total Body Dose                      2.9E-01 man-rem  
Maximum Organ Dose (organ)      2.9E-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 7-B  
Doses from Liquid Effluents

**Third Quarter**

**Individual Doses (mrem)**

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	2.7E-03	1.5 mrem	< 1 %
Child	Liver	3.0E-03	5 mrem	< 1 %
Child	Thyroid	2.7E-03	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 19,663

**Population Doses**

Total Body Dose                      1.6E-01 man-rem  
Maximum Organ Dose (organ)      1.6E-01 man-rem (Liver)

**Fourth Quarter**

**Individual Doses (mrem)**

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Total Body	5.1E-04	1.5 mrem	< 1 %
Adult	GIT	9.5E-04	5 mrem	< 1 %
Child	Thyroid	4.9E-04	5 mrem	< 1 %

Average Riverflow past WBN (cubic feet per second): 16,117

**Population Doses**

Total Body Dose                      2.0E-02 man-rem  
Maximum Organ Dose (organ)      2.1E-02 man-rem (GIT)

*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	
<b>Total Body or any Organ (except thyroid)</b>					
Total body air submersion	1.75E-03	1.05E-02	6.59E-02	3.56E-05	
Critical organ dose (air)	3.87E-03	6.36E-03	2.21E-02	2.27E-03	
Total body dose (liquid)	2.4E-03	5.0E-03	2.7E-03	5.1E-04	
Maximum organ dose (liquid)	2.5E-03	5.1E-03	3.0E-03	9.5E-04	
Direct Radiation Dose	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
<b>Total</b>	<b>1.05E-02</b>	<b>2.70E-02</b>	<b>9.37E-02</b>	<b>3.77E-03</b>	
<b>Cumulative Total Dose (mrem)</b>					<b>1.35E-01</b>
<b>Annual Dose Limit (mrem)</b>					<b>25</b>
<b>Percent of Limit</b>					<b>&lt; 1 %</b>
<b>Thyroid</b>					
Total body air submersion	1.75E-03	1.05E-02	6.59E-02	3.56E-05	
Thyroid dose (airborne)	3.87E-03	6.36E-03	2.21E-02	2.27E-03	
Total body dose (liquid)	2.4E-03	5.0E-03	2.7E-03	5.1E-04	
Thyroid dose (liquid)	2.4E-03	5.0E-03	2.7E-03	4.9E-04	
Direct Radiation Dose	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
<b>Total</b>	<b>1.04E-02</b>	<b>2.69E-02</b>	<b>9.34E-02</b>	<b>3.31E-03</b>	
<b>Cumulative Total Dose (mrem)</b>					<b>1.34E-01</b>
<b>Annual Dose Limit (mrem)</b>					<b>75</b>
<b>Percent of Limit</b>					<b>&lt; 1 %</b>

# 2000 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

JAN 1, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.051	0.102	0.051	0.000	0.000	0.000	0.203
NNE	0.000	0.000	0.000	0.203	0.153	0.203	0.000	0.000	0.000	0.560
NE	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.051
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	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	0.153	0.102	0.254	0.051	0.000	0.000	0.560
SSW	0.000	0.000	0.000	0.000	0.763	0.966	0.051	0.000	0.000	1.780
SW	0.000	0.000	0.000	0.000	0.305	0.051	0.000	0.000	0.000	0.356
WSW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W	0.000	0.000	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.051
WNW	0.000	0.000	0.000	0.000	0.000	0.051	0.102	0.000	0.000	0.153
NW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNW	0.000	0.000	0.000	0.051	0.000	0.102	0.000	0.000	0.000	0.153
SUBTOTAL	0.000	0.000	0.000	0.458	1.475	1.679	0.254	0.000	0.000	3.866

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF STABILITY CLASS A	84
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	76
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
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: 20000503

MEAN WIND SPEED = 7.76

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS



# 2000 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

JAN 1, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.051	0.356	0.305	0.153	0.000	0.000	0.000	0.865
NNE	0.000	0.000	0.000	0.203	0.509	0.407	0.000	0.000	0.000	1.119
NE	0.000	0.000	0.153	0.254	0.102	0.000	0.000	0.000	0.000	0.509
ENE	0.000	0.000	0.000	0.153	0.000	0.000	0.000	0.000	0.000	0.153
E	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.051
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	0.203	0.153	0.000	0.051	0.000	0.000	0.407
SSW	0.000	0.000	0.000	0.203	0.356	0.051	0.000	0.000	0.000	0.610
SW	0.000	0.000	0.000	0.102	0.102	0.000	0.000	0.000	0.000	0.203
WSW	0.000	0.000	0.000	0.102	0.000	0.000	0.000	0.000	0.000	0.102
W	0.000	0.000	0.000	0.000	0.051	0.051	0.102	0.000	0.000	0.203
WNW	0.000	0.000	0.000	0.000	0.051	0.153	0.051	0.000	0.000	0.254
NW	0.000	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.051
NNW	0.000	0.000	0.000	0.102	0.051	0.051	0.000	0.000	0.000	0.203
SUBTOTAL	0.000	0.000	0.203	1.679	1.729	0.916	0.203	0.000	0.000	4.730

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF STABILITY CLASS B	101
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	93
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
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: 20000503

MEAN WIND SPEED = 6.38

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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

JAN 1, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.102	0.305	0.153	0.458	0.000	0.000	0.000	1.017
NNE	0.000	0.000	0.254	0.407	0.458	0.305	0.000	0.000	0.000	1.424
NE	0.000	0.000	0.102	0.153	0.000	0.000	0.000	0.000	0.000	0.254
ENE	0.000	0.000	0.000	0.153	0.051	0.000	0.000	0.000	0.000	0.203
E	0.000	0.000	0.102	0.051	0.000	0.000	0.000	0.000	0.000	0.153
ESE	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.051
SE	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.051
SSE	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.051
S	0.000	0.000	0.051	0.305	0.000	0.102	0.000	0.000	0.000	0.458
SSW	0.000	0.000	0.000	0.407	0.254	0.153	0.051	0.000	0.000	0.865
SW	0.000	0.000	0.000	0.305	0.102	0.000	0.000	0.000	0.000	0.407
WSW	0.000	0.000	0.000	0.051	0.000	0.102	0.000	0.000	0.000	0.153
W	0.000	0.000	0.000	0.102	0.051	0.102	0.000	0.000	0.000	0.254
WNW	0.000	0.000	0.000	0.153	0.051	0.203	0.000	0.000	0.000	0.407
NW	0.000	0.000	0.000	0.000	0.051	0.153	0.153	0.000	0.000	0.356
NNW	0.000	0.000	0.102	0.153	0.051	0.203	0.051	0.000	0.000	0.560
SUBTOTAL	0.000	0.000	0.712	2.696	1.221	1.780	0.254	0.000	0.000	6.663

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF STABILITY CLASS C	142
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	131
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
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: 20000503

MEAN WIND SPEED = 6.18

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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

JAN 1, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.407	1.170	0.814	1.322	0.000	0.000	0.000	3.713
NNE	0.000	0.000	0.712	1.272	1.017	1.475	0.000	0.000	0.000	4.476
NE	0.000	0.000	0.916	1.017	0.407	0.203	0.000	0.000	0.000	2.543
ENE	0.000	0.102	0.916	0.712	0.102	0.000	0.000	0.000	0.000	1.831
E	0.000	0.203	0.661	0.102	0.000	0.000	0.000	0.000	0.000	0.966
ESE	0.000	0.102	0.203	0.000	0.000	0.000	0.000	0.000	0.000	0.305
SE	0.000	0.051	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.203
SSE	0.000	0.153	0.509	0.305	0.000	0.000	0.000	0.000	0.000	0.966
S	0.000	0.000	0.560	0.509	0.203	0.305	0.102	0.000	0.000	1.679
SSW	0.000	0.102	1.475	1.628	0.865	0.865	0.051	0.000	0.000	4.985
SW	0.000	0.203	1.068	0.865	0.153	0.254	0.000	0.000	0.000	2.543
WSW	0.000	0.051	0.712	0.203	0.000	0.102	0.000	0.000	0.000	1.068
W	0.000	0.000	0.407	0.305	0.102	0.509	0.051	0.000	0.000	1.373
WNW	0.000	0.051	0.203	0.305	0.763	1.424	0.051	0.000	0.000	2.798
NW	0.000	0.000	0.305	0.305	1.424	1.933	0.102	0.000	0.000	4.069
NNW	0.000	0.051	0.153	0.712	1.526	1.272	0.102	0.000	0.000	3.815
SUBTOTAL	0.000	1.068	9.359	9.410	7.375	9.664	0.458	0.000	0.000	37.335

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF STABILITY CLASS D	823
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D	734
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
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: 20000503

MEAN WIND SPEED = 5.52

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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

JAN 1, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.009	0.102	0.509	0.661	0.458	0.000	0.000	0.000	0.000	1.739
NNE	0.004	0.102	0.153	0.407	0.051	0.000	0.000	0.000	0.000	0.716
NE	0.012	0.051	0.712	0.254	0.051	0.051	0.000	0.000	0.000	1.131
ENE	0.007	0.153	0.305	0.102	0.051	0.000	0.000	0.000	0.000	0.617
E	0.004	0.153	0.102	0.051	0.000	0.000	0.000	0.000	0.000	0.309
ESE	0.009	0.254	0.305	0.000	0.000	0.000	0.000	0.000	0.000	0.568
SE	0.002	0.051	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.103
SSE	0.006	0.102	0.254	0.000	0.000	0.000	0.000	0.000	0.000	0.362
S	0.012	0.305	0.458	0.305	0.305	0.305	0.153	0.000	0.000	1.843
SSW	0.020	0.102	1.221	1.068	0.458	0.203	0.000	0.000	0.000	3.072
SW	0.020	0.254	1.068	0.458	0.153	0.000	0.000	0.000	0.000	1.953
WSW	0.009	0.203	0.407	0.305	0.102	0.051	0.000	0.000	0.000	1.078
W	0.009	0.153	0.458	0.305	0.051	0.000	0.000	0.000	0.000	0.976
WNW	0.006	0.254	0.153	0.305	0.203	0.051	0.000	0.000	0.000	0.973
NW	0.015	0.356	0.610	0.509	0.153	0.051	0.000	0.000	0.000	1.693
NNW	0.008	0.153	0.356	0.763	0.458	0.102	0.000	0.000	0.000	1.839
SUBTOTAL	0.153	2.747	7.121	5.493	2.492	0.814	0.153	0.000	0.000	18.973

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF STABILITY CLASS E	414
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	373
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
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: 20000503

MEAN WIND SPEED = 3.58

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.015	0.203	0.203	0.051	0.000	0.000	0.000	0.000	0.000	0.472
NNE	0.007	0.102	0.102	0.000	0.000	0.000	0.000	0.000	0.000	0.211
NE	0.013	0.153	0.203	0.000	0.000	0.000	0.000	0.000	0.000	0.369
ENE	0.015	0.203	0.203	0.000	0.000	0.000	0.000	0.000	0.000	0.422
E	0.007	0.102	0.102	0.000	0.000	0.000	0.000	0.000	0.000	0.211
ESE	0.006	0.102	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.158
SE	0.002	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.053
SSE	0.007	0.153	0.051	0.051	0.000	0.000	0.000	0.000	0.000	0.262
S	0.024	0.254	0.407	0.203	0.000	0.000	0.000	0.000	0.000	0.889
SSW	0.028	0.203	0.560	0.509	0.051	0.000	0.000	0.000	0.000	1.350
SW	0.037	0.254	0.763	0.102	0.000	0.000	0.000	0.000	0.000	1.156
WSW	0.050	0.763	0.610	0.051	0.000	0.000	0.000	0.000	0.000	1.474
W	0.055	0.916	0.610	0.051	0.000	0.000	0.000	0.000	0.000	1.632
WNW	0.028	0.661	0.102	0.051	0.000	0.000	0.000	0.000	0.000	0.841
NW	0.040	0.661	0.458	0.000	0.000	0.000	0.000	0.000	0.000	1.159
NNW	0.024	0.509	0.153	0.051	0.000	0.000	0.000	0.000	0.000	0.736
SUBTOTAL	0.356	5.290	4.578	1.119	0.051	0.000	0.000	0.000	0.000	11.394

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF STABILITY CLASS F	235
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	224
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
TOTAL HOURS CALM	7

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: 20000503

MEAN WIND SPEED = 1.79

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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

JAN 1, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.095	0.560	0.102	0.000	0.000	0.000	0.000	0.000	0.000	0.756
NNE	0.029	0.203	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.233
NE	0.102	0.560	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.815
ENE	0.132	0.712	0.203	0.000	0.000	0.000	0.000	0.000	0.000	1.047
E	0.029	0.153	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.233
ESE	0.051	0.305	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.407
SE	0.088	0.407	0.203	0.000	0.000	0.000	0.000	0.000	0.000	0.698
SSE	0.110	0.661	0.102	0.000	0.000	0.000	0.000	0.000	0.000	0.873
S	0.154	0.763	0.305	0.000	0.000	0.000	0.000	0.000	0.000	1.222
SSW	0.183	1.170	0.102	0.051	0.000	0.000	0.000	0.000	0.000	1.505
SW	0.278	1.526	0.407	0.000	0.000	0.000	0.000	0.000	0.000	2.211
WSW	0.337	1.373	0.966	0.000	0.000	0.000	0.000	0.000	0.000	2.676
W	0.234	1.272	0.356	0.000	0.000	0.000	0.000	0.000	0.000	1.862
WNW	0.139	0.661	0.305	0.000	0.000	0.000	0.000	0.000	0.000	1.105
NW	0.088	0.458	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.698
NNW	0.088	0.458	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.698
SUBTOTAL	2.136	11.241	3.611	0.051	0.000	0.000	0.000	0.000	0.000	17.040

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF STABILITY CLASS G	358
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G	335
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
TOTAL HOURS CALM	42

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: 20000503

MEAN WIND SPEED = 1.08

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 WATTS BAR NUCLEAR PLANT EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

## JOINT PERCENTAGE FREQUENCIES OF WIND SPEED

### BY WIND DIRECTION DISREGARDING STABILITY CLASS

Watts Bar Nuclear Plant

JAN 1, 2000 - MAR 31, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.128	0.864	1.372	2.591	1.829	1.982	0.000	0.000	0.000	8.767
NNE	0.093	0.407	1.220	2.490	2.185	2.388	0.000	0.000	0.000	8.782
NE	0.172	0.762	2.236	1.677	0.610	0.254	0.000	0.000	0.000	5.711
ENE	0.161	1.169	1.626	1.118	0.203	0.000	0.000	0.000	0.000	4.276
E	0.096	0.610	1.067	0.203	0.051	0.000	0.000	0.000	0.000	2.027
ESE	0.079	0.762	0.610	0.051	0.000	0.000	0.000	0.000	0.000	1.502
SE	0.055	0.559	0.407	0.051	0.000	0.000	0.000	0.000	0.000	1.072
SSE	0.117	1.067	0.965	0.407	0.000	0.000	0.000	0.000	0.000	2.556
S	0.178	1.321	1.778	1.677	0.762	0.965	0.356	0.000	0.000	7.038
SSW	0.283	1.575	3.354	3.862	2.744	2.236	0.152	0.000	0.000	14.206
SW	0.318	2.236	3.303	1.829	0.813	0.305	0.000	0.000	0.000	8.804
WSW	0.292	2.388	2.693	0.711	0.102	0.254	0.000	0.000	0.000	6.440
W	0.239	2.337	1.829	0.762	0.254	0.661	0.203	0.000	0.000	6.286
WNW	0.137	1.626	0.762	0.813	1.067	1.880	0.203	0.000	0.000	6.489
NW	0.172	1.474	1.524	0.813	1.626	2.185	0.254	0.000	0.000	8.048
NNW	0.120	1.169	0.915	1.829	2.083	1.728	0.152	0.000	0.000	7.996
SUBTOTAL	2.642	20.325	25.661	20.884	14.329	14.837	1.321	0.000	0.000	100.000

TOTAL HOURS OF VALID WIND OBSERVATIONS  
TOTAL HOURS OF OBSERVATIONS  
RECOVERABILITY PERCENTAGE  
TOTAL HOURS CALM

1968  
2184  
90.1  
52

METEOROLOGICAL FACILITY: Watts Bar Nuclear Plant  
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

DATE PRINTED: 20000503

MEAN WIND SPEED = 4.14

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 WATTS BAR NUCLEAR PLANT EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

## JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY STABILITY CLASS

Watts Bar Nuclear Plant

JAN 1, 2000 - MAR 31, 2000

WIND SPEED (MPH)	STABILITY CLASS						
	A	B	C	D	E	F	G
CALM	0.000	0.000	0.000	0.000	0.153	0.356	2.136
0.6- 1.4	0.000	0.000	0.000	1.068	2.747	5.290	11.241
1.5- 3.4	0.000	0.203	0.712	9.359	7.121	4.578	3.611
3.5- 5.4	0.458	1.679	2.696	9.410	5.493	1.119	0.051
5.5- 7.4	1.475	1.729	1.221	7.375	2.492	0.051	0.000
7.5-12.4	1.679	0.916	1.780	9.664	0.814	0.000	0.000
12.5-18.4	0.254	0.203	0.254	0.458	0.153	0.000	0.000
18.5-24.4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
>=24.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	3.866	4.730	6.663	37.335	18.973	11.394	17.040

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2157
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	1966
TOTAL HOURS OF OBSERVATIONS	2184
JOINT RECOVERABILITY PERCENTAGE	90.0

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: 20000503 JOINT



# 2000 WATTS BAR NUCLEAR PLANT EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

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, 2000 - JUN 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NE	0.000	0.000	0.046	0.000	0.000	0.046	0.000	0.000	0.000	0.093
ENE	0.000	0.000	0.000	0.000	0.000	0.093	0.000	0.000	0.000	0.093
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.046
S	0.000	0.000	0.046	0.000	0.139	0.139	0.000	0.000	0.000	0.324
SSW	0.000	0.000	0.046	0.046	0.278	0.925	0.000	0.000	0.000	1.296
SW	0.000	0.000	0.046	0.000	0.046	0.000	0.000	0.000	0.000	0.093
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	0.046	0.000	0.000	0.000	0.046
WNW	0.000	0.000	0.000	0.000	0.000	0.000	0.093	0.000	0.000	0.093
NW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SUBTOTAL	0.000	0.000	0.231	0.046	0.463	1.249	0.093	0.000	0.000	2.082

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2165
TOTAL HOURS OF STABILITY CLASS A	45
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	45
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2161
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: 20000815

MEAN WIND SPEED = 8.08

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2000  
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

APR 1, 2000 - JUN 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.000	0.093
NNE	0.000	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.000	0.093
NE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	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	0.093	0.046	0.000	0.000	0.000	0.000	0.139
SSW	0.000	0.000	0.000	0.000	0.555	0.463	0.000	0.000	0.000	1.018
SW	0.000	0.000	0.000	0.093	0.000	0.000	0.000	0.000	0.000	0.093
WSW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WNW	0.000	0.000	0.000	0.000	0.000	0.046	0.093	0.000	0.000	0.139
NW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SUBTOTAL	0.000	0.000	0.000	0.231	0.740	0.555	0.093	0.000	0.000	1.620

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2165
TOTAL HOURS OF STABILITY CLASS B	35
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	35
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2161
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: 20000815

MEAN WIND SPEED = 7.70

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2000  
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, 2000 - JUN 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.139	0.046	0.093	0.000	0.000	0.000	0.278
NNE	0.000	0.000	0.000	0.000	0.093	0.231	0.000	0.000	0.000	0.324
NE	0.000	0.000	0.000	0.093	0.000	0.046	0.000	0.000	0.000	0.139
ENE	0.000	0.000	0.000	0.093	0.000	0.093	0.000	0.000	0.000	0.185
E	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.046
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SSE	0.000	0.000	0.000	0.093	0.000	0.000	0.000	0.000	0.000	0.093
S	0.000	0.000	0.046	0.185	0.278	0.139	0.000	0.000	0.000	0.648
SSW	0.000	0.000	0.000	0.185	0.694	0.648	0.000	0.000	0.000	1.527
SW	0.000	0.046	0.000	0.046	0.093	0.000	0.000	0.000	0.000	0.185
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	0.000	0.000	0.000	0.000	0.000
WNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NW	0.000	0.000	0.000	0.000	0.000	0.046	0.046	0.000	0.000	0.093
NNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SUBTOTAL	0.000	0.046	0.046	0.879	1.203	1.342	0.046	0.000	0.000	3.563

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2165
TOTAL HOURS OF STABILITY CLASS C	77
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	77
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2161
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: 20000815

MEAN WIND SPEED = 6.91

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2000  
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

APR 1, 2000 - JUN 30, 2000

WIND DIRECTION	CALM	WIND SPEED (MPH)								TOTAL
		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	
N	0.000	0.046	0.370	1.296	0.740	0.555	0.000	0.000	0.000	3.008
NNE	0.000	0.046	0.740	1.203	1.064	0.787	0.000	0.000	0.000	3.841
NE	0.000	0.000	0.694	0.833	0.324	0.093	0.000	0.000	0.000	1.944
ENE	0.000	0.046	0.416	0.416	0.093	0.000	0.000	0.000	0.000	0.972
E	0.000	0.000	0.370	0.185	0.000	0.000	0.000	0.000	0.000	0.555
ESE	0.000	0.046	0.231	0.000	0.000	0.000	0.000	0.000	0.000	0.278
SE	0.000	0.000	0.370	0.046	0.000	0.000	0.000	0.000	0.000	0.416
SSE	0.000	0.046	0.740	0.231	0.046	0.000	0.000	0.000	0.000	1.064
S	0.000	0.000	0.972	2.036	0.925	0.416	0.139	0.000	0.000	4.489
SSW	0.000	0.046	1.805	3.332	1.620	1.157	0.000	0.000	0.000	7.959
SW	0.000	0.000	1.157	1.666	0.139	0.093	0.000	0.000	0.000	3.054
WSW	0.000	0.000	0.555	0.324	0.000	0.046	0.000	0.000	0.000	0.925
W	0.000	0.046	0.231	0.139	0.046	0.046	0.000	0.000	0.000	0.509
WNW	0.000	0.000	0.278	0.278	0.602	0.740	0.139	0.000	0.000	2.036
NW	0.000	0.000	0.231	0.370	0.509	0.833	0.093	0.000	0.000	2.036
NNW	0.000	0.000	0.185	0.509	0.463	0.370	0.000	0.000	0.000	1.527
SUBTOTAL	0.000	0.324	9.348	12.864	6.571	5.137	0.370	0.000	0.000	34.614

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2165
TOTAL HOURS OF STABILITY CLASS D	749
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D	748
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2161
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: 20000815

MEAN WIND SPEED = 5.06

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - JUN 30, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.006	0.093	0.370	0.416	0.185	0.000	0.000	0.000	0.000	1.071
NNE	0.004	0.046	0.231	0.139	0.139	0.093	0.000	0.000	0.000	0.652
NE	0.007	0.000	0.509	0.093	0.000	0.000	0.000	0.000	0.000	0.609
ENE	0.010	0.046	0.694	0.185	0.000	0.000	0.000	0.000	0.000	0.936
E	0.007	0.093	0.416	0.000	0.046	0.000	0.000	0.000	0.000	0.562
ESE	0.003	0.093	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.235
SE	0.006	0.231	0.231	0.000	0.000	0.000	0.000	0.000	0.000	0.469
SSE	0.016	0.463	0.694	0.185	0.185	0.000	0.000	0.000	0.000	1.543
S	0.027	0.278	1.666	0.879	0.278	0.139	0.000	0.000	0.000	3.266
SSW	0.049	0.555	2.962	2.776	1.064	0.787	0.000	0.000	0.000	8.194
SW	0.034	0.740	1.666	0.231	0.046	0.000	0.000	0.000	0.000	2.718
WSW	0.021	0.879	0.602	0.324	0.046	0.000	0.000	0.000	0.000	1.872
W	0.016	0.416	0.694	0.046	0.046	0.000	0.000	0.000	0.000	1.219
WNW	0.008	0.139	0.416	0.463	0.139	0.093	0.000	0.000	0.000	1.257
NW	0.009	0.231	0.416	0.324	0.185	0.046	0.000	0.000	0.000	1.212
NNW	0.007	0.046	0.463	0.602	0.740	0.185	0.000	0.000	0.000	2.043
SUBTOTAL	0.231	4.350	12.170	6.664	3.100	1.342	0.000	0.000	0.000	27.857

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2165
TOTAL HOURS OF STABILITY CLASS E	604
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	602
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2161
TOTAL HOURS CALM	5

METEOROLOGICAL FACILITY: Watts Bar Nuclear Plant  
 STABILITY BASED ON DELTA-T BETWEEN 9.51 AND 45.63 METERS  
 WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

DATE PRINTED: 20000815

MEAN WIND SPEED = 3.35

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - JUN 30, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.008	0.139	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.194
NNE	0.008	0.046	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.194
NE	0.008	0.139	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.194
ENE	0.015	0.185	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.339
E	0.015	0.139	0.185	0.000	0.000	0.000	0.000	0.000	0.000	0.339
ESE	0.004	0.046	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.097
SE	0.006	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.145
SSE	0.015	0.185	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.339
S	0.034	0.648	0.093	0.046	0.000	0.000	0.000	0.000	0.000	0.821
SSW	0.108	0.602	1.758	0.463	0.000	0.000	0.000	0.000	0.000	2.931
SW	0.112	1.342	1.111	0.000	0.000	0.000	0.000	0.000	0.000	2.565
WSW	0.106	1.481	0.833	0.000	0.000	0.000	0.000	0.000	0.000	2.420
W	0.091	1.388	0.602	0.000	0.046	0.000	0.000	0.000	0.000	2.127
WNW	0.095	1.573	0.509	0.000	0.000	0.000	0.000	0.000	0.000	2.178
NW	0.051	0.833	0.278	0.093	0.000	0.000	0.000	0.000	0.000	1.254
NNW	0.017	0.231	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.387
SUBTOTAL	0.694	9.116	6.062	0.602	0.046	0.000	0.000	0.000	0.000	16.520

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2165
TOTAL HOURS OF STABILITY CLASS F	358
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	357
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2161
TOTAL HOURS CALM	15

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: 20000815

MEAN WIND SPEED = 1.51

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - JUN 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.011	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.150
NNE	0.011	0.093	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.150
NE	0.019	0.231	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
ENE	0.011	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.150
E	0.007	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100
ESE	0.015	0.185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.200
SE	0.011	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.150
SSE	0.019	0.231	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
S	0.041	0.463	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.550
SSW	0.085	0.787	0.278	0.000	0.000	0.000	0.000	0.000	0.000	1.149
SW	0.111	1.064	0.324	0.000	0.000	0.000	0.000	0.000	0.000	1.499
WSW	0.185	1.712	0.602	0.000	0.000	0.000	0.000	0.000	0.000	2.499
W	0.189	1.851	0.509	0.000	0.000	0.000	0.000	0.000	0.000	2.549
WNW	0.185	2.036	0.278	0.000	0.000	0.000	0.000	0.000	0.000	2.499
NW	0.100	0.602	0.648	0.000	0.000	0.000	0.000	0.000	0.000	1.349
NNW	0.019	0.231	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
SUBTOTAL	1.018	9.995	2.730	0.000	0.000	0.000	0.000	0.000	0.000	13.744

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2165
TOTAL HOURS OF STABILITY CLASS G	297
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G	297
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2161
TOTAL HOURS CALM	22

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: 20000815

MEAN WIND SPEED = 1.11

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2000  
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, 2000 - SEP 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.047	0.094	0.188	0.000	0.000	0.000	0.329
NNE	0.000	0.000	0.000	0.000	0.000	0.282	0.000	0.000	0.000	0.282
NE	0.000	0.000	0.000	0.000	0.000	0.282	0.000	0.000	0.000	0.282
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.000	0.000	0.047	0.047	0.000	0.000	0.000	0.000	0.000	0.094
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	0.047	0.000	0.000	0.000	0.000	0.047
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	0.047	0.047	0.047	0.000	0.000	0.000	0.000	0.141
SSW	0.000	0.000	0.000	0.094	0.423	0.141	0.000	0.000	0.000	0.659
SW	0.000	0.000	0.000	0.000	0.282	0.000	0.000	0.000	0.000	0.282
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	0.047	0.000	0.047	0.000	0.000	0.000	0.000	0.094
WNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNW	0.000	0.000	0.000	0.000	0.094	0.094	0.000	0.000	0.000	0.188
SUBTOTAL	0.000	0.000	0.141	0.235	1.035	0.988	0.000	0.000	0.000	2.399

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2130
TOTAL HOURS OF STABILITY CLASS A	52
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	51
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2126
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: 20001117

MEAN WIND SPEED = 7.02

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS



2000  
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, 2000 - SEP 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.047	0.047	0.000	0.000	0.000	0.000	0.094
NNE	0.000	0.000	0.000	0.094	0.188	0.094	0.000	0.000	0.000	0.376
NE	0.000	0.000	0.047	0.141	0.094	0.094	0.000	0.000	0.000	0.376
ENE	0.000	0.000	0.000	0.000	0.094	0.094	0.000	0.000	0.000	0.188
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.000	0.000	0.000	0.047	0.047	0.000	0.000	0.000	0.000	0.094
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	0.047	0.000	0.000	0.000	0.000	0.000	0.047
SSW	0.000	0.000	0.047	0.141	0.000	0.141	0.000	0.000	0.000	0.329
SW	0.000	0.000	0.000	0.047	0.094	0.000	0.000	0.000	0.000	0.141
WSW	0.000	0.000	0.000	0.094	0.000	0.000	0.000	0.000	0.000	0.094
W	0.000	0.000	0.000	0.000	0.047	0.000	0.000	0.000	0.000	0.047
WNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNW	0.000	0.000	0.000	0.047	0.235	0.047	0.000	0.000	0.000	0.329
SUBTOTAL	0.000	0.000	0.094	0.706	0.847	0.470	0.000	0.000	0.000	2.117

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2130
TOTAL HOURS OF STABILITY CLASS B	45
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	45
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2126
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: 20001117

MEAN WIND SPEED = 6.12

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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

JUL 1, 2000 - SEP 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.235	0.188	0.141	0.000	0.000	0.000	0.564
NNE	0.000	0.000	0.047	0.376	0.235	0.611	0.000	0.000	0.000	1.270
NE	0.000	0.000	0.094	0.235	0.188	0.047	0.000	0.000	0.000	0.564
ENE	0.000	0.000	0.000	0.047	0.094	0.047	0.000	0.000	0.000	0.188
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	0.047	0.047	0.000	0.000	0.000	0.000	0.000	0.094
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	0.235	0.000	0.000	0.000	0.000	0.000	0.235
SSW	0.000	0.000	0.141	0.329	0.094	0.094	0.000	0.000	0.000	0.659
SW	0.000	0.000	0.000	0.141	0.000	0.000	0.000	0.000	0.000	0.141
WSW	0.000	0.000	0.000	0.141	0.000	0.000	0.000	0.000	0.000	0.141
W	0.000	0.000	0.047	0.094	0.000	0.000	0.000	0.000	0.000	0.141
WNW	0.000	0.000	0.000	0.000	0.047	0.000	0.000	0.000	0.000	0.047
NW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNW	0.000	0.000	0.000	0.094	0.047	0.094	0.000	0.000	0.000	0.235
SUBTOTAL	0.000	0.000	0.376	1.976	0.894	1.035	0.000	0.000	0.000	4.280

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2130
TOTAL HOURS OF STABILITY CLASS C	92
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	91
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2126
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: 20001117

MEAN WIND SPEED = 5.73

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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

JUL 1, 2000 - SEP 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.002	0.094	0.611	1.740	0.988	0.659	0.000	0.000	0.000	4.095
NNE	0.001	0.000	0.423	1.552	1.082	1.411	0.000	0.000	0.000	4.470
NE	0.003	0.000	0.800	1.364	0.753	0.047	0.000	0.000	0.000	2.966
ENE	0.002	0.047	0.611	0.753	0.047	0.094	0.047	0.000	0.000	1.602
E	0.002	0.047	0.659	0.282	0.000	0.000	0.000	0.000	0.000	0.990
ESE	0.002	0.094	0.517	0.188	0.047	0.000	0.000	0.000	0.000	0.849
SE	0.002	0.188	0.423	0.094	0.047	0.000	0.000	0.000	0.000	0.755
SSE	0.003	0.047	0.847	0.094	0.000	0.000	0.000	0.000	0.000	0.991
S	0.005	0.047	1.411	0.611	0.235	0.094	0.000	0.000	0.000	2.404
SSW	0.007	0.282	1.834	1.740	0.564	0.094	0.000	0.000	0.000	4.523
SW	0.006	0.141	1.599	0.847	0.000	0.047	0.000	0.000	0.000	2.640
WSW	0.002	0.141	0.564	0.376	0.188	0.047	0.000	0.000	0.000	1.319
W	0.002	0.235	0.329	0.564	0.094	0.235	0.000	0.000	0.000	1.460
WNW	0.003	0.094	0.753	0.094	0.235	0.141	0.000	0.000	0.000	1.320
NW	0.001	0.141	0.094	0.141	0.235	0.047	0.000	0.000	0.000	0.659
NNW	0.002	0.000	0.470	0.611	0.423	0.282	0.000	0.000	0.000	1.789
SUBTOTAL	0.047	1.599	11.947	11.054	4.939	3.198	0.047	0.000	0.000	32.832

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2130
TOTAL HOURS OF STABILITY CLASS D	700
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D	698
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2126
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: 20001117

MEAN WIND SPEED = 4.26

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - SEP 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.038	0.094	0.611	1.317	0.659	0.047	0.000	0.000	0.000	2.766
NNE	0.038	0.188	0.517	0.329	0.706	0.094	0.000	0.000	0.000	1.872
NE	0.058	0.282	0.800	1.082	0.094	0.047	0.000	0.000	0.000	2.363
ENE	0.065	0.329	0.894	0.517	0.047	0.000	0.000	0.000	0.000	1.853
E	0.040	0.423	0.329	0.047	0.000	0.000	0.000	0.000	0.000	0.840
ESE	0.023	0.329	0.094	0.047	0.000	0.000	0.000	0.000	0.000	0.493
SE	0.023	0.329	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.446
SSE	0.038	0.376	0.329	0.047	0.000	0.000	0.000	0.000	0.000	0.790
S	0.093	0.894	0.847	0.047	0.000	0.000	0.000	0.000	0.000	1.880
SSW	0.148	1.082	1.693	0.517	0.188	0.047	0.000	0.000	0.000	3.676
SW	0.111	0.753	1.317	0.094	0.000	0.000	0.000	0.000	0.000	2.274
WSW	0.116	1.129	1.035	0.235	0.047	0.000	0.000	0.000	0.000	2.562
W	0.096	1.082	0.706	0.094	0.094	0.000	0.000	0.000	0.000	2.071
WNW	0.096	1.035	0.753	0.282	0.047	0.094	0.000	0.000	0.000	2.306
NW	0.035	0.282	0.376	0.141	0.188	0.047	0.000	0.000	0.000	1.070
NNW	0.065	0.517	0.706	0.564	0.329	0.141	0.000	0.000	0.000	2.323
SUBTOTAL	1.082	9.125	11.101	5.362	2.399	0.517	0.000	0.000	0.000	29.586

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2130
TOTAL HOURS OF STABILITY CLASS E	629
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	629
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2126
TOTAL HOURS CALM	23

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: 20001117

MEAN WIND SPEED = 2.63

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - SEP 30, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.036	0.282	0.188	0.000	0.000	0.000	0.000	0.000	0.000	0.506
NNE	0.032	0.188	0.235	0.000	0.000	0.000	0.000	0.000	0.000	0.455
NE	0.028	0.188	0.188	0.047	0.000	0.000	0.000	0.000	0.000	0.452
ENE	0.053	0.282	0.423	0.094	0.000	0.000	0.000	0.000	0.000	0.853
E	0.011	0.047	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.152
ESE	0.007	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.101
SE	0.007	0.047	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.101
SSE	0.007	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.101
S	0.025	0.282	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.354
SSW	0.075	0.517	0.470	0.047	0.000	0.000	0.000	0.000	0.000	1.109
SW	0.121	1.129	0.470	0.047	0.000	0.000	0.000	0.000	0.000	1.767
WSW	0.156	1.411	0.659	0.000	0.000	0.000	0.000	0.000	0.000	2.226
W	0.167	1.881	0.329	0.000	0.000	0.000	0.000	0.000	0.000	2.378
WNW	0.238	2.728	0.423	0.000	0.000	0.047	0.000	0.000	0.000	3.437
NW	0.196	1.976	0.611	0.047	0.000	0.000	0.000	0.000	0.000	2.830
NNW	0.064	0.564	0.282	0.000	0.047	0.000	0.000	0.000	0.000	0.958
SUBTOTAL	1.223	11.712	4.468	0.282	0.047	0.047	0.000	0.000	0.000	17.780

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2130
TOTAL HOURS OF STABILITY CLASS F	378
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	378
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2126
TOTAL HOURS CALM	26

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: 20001117

MEAN WIND SPEED = 1.29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - SEP 30, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.031	0.188	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.219
NNE	0.039	0.188	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.274
NE	0.008	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.055
ENE	0.031	0.141	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.219
E	0.008	0.000	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.055
ESE	0.008	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.055
SE	0.016	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110
SSE	0.016	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110
S	0.008	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.055
SSW	0.054	0.235	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.384
SW	0.140	0.753	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.986
WSW	0.194	0.894	0.282	0.047	0.000	0.000	0.000	0.000	0.000	1.417
W	0.318	1.693	0.235	0.000	0.000	0.000	0.000	0.000	0.000	2.247
WNW	0.295	1.505	0.282	0.000	0.000	0.000	0.000	0.000	0.000	2.082
NW	0.326	1.787	0.188	0.000	0.000	0.000	0.000	0.000	0.000	2.302
NNW	0.062	0.282	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.438
SUBTOTAL	1.552	7.996	1.411	0.047	0.000	0.000	0.000	0.000	0.000	11.007

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2130
TOTAL HOURS OF STABILITY CLASS G	234
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G	234
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2126
TOTAL HOURS CALM	33

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: 20001117

MEAN WIND SPEED = 1.02

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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

OCT 1, 2000 - DEC 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.000	0.000	0.195	0.049	0.000	0.000	0.000	0.244
NNE	0.000	0.000	0.000	0.049	0.146	0.341	0.000	0.000	0.000	0.536
NE	0.000	0.000	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.049
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ESE	0.000	0.000	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	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.049
SSW	0.000	0.000	0.000	0.097	0.049	0.195	0.000	0.000	0.000	0.341
SW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WSW	0.000	0.000	0.000	0.000	0.000	0.049	0.000	0.000	0.000	0.049
W	0.000	0.000	0.000	0.000	0.049	0.049	0.000	0.000	0.000	0.097
WNW	0.000	0.000	0.000	0.000	0.049	0.049	0.000	0.000	0.000	0.097
NW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NNW	0.000	0.000	0.000	0.049	0.000	0.049	0.000	0.000	0.000	0.097
SUBTOTAL	0.000	0.000	0.097	0.195	0.487	0.779	0.000	0.000	0.000	1.559

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF STABILITY CLASS A	34
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A	32
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
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: 20010206

MEAN WIND SPEED = 7.56

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - DEC 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.049	0.097	0.049	0.292	0.000	0.000	0.000	0.487
NNE	0.000	0.000	0.000	0.097	0.146	0.292	0.049	0.000	0.000	0.585
NE	0.000	0.000	0.000	0.049	0.000	0.049	0.000	0.000	0.000	0.097
ENE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E	0.000	0.000	0.000	0.049	0.000	0.000	0.000	0.000	0.000	0.049
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	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.049
SSW	0.000	0.000	0.049	0.097	0.244	0.146	0.000	0.000	0.000	0.536
SW	0.000	0.000	0.000	0.000	0.049	0.049	0.000	0.000	0.000	0.097
WSW	0.000	0.000	0.000	0.000	0.000	0.097	0.000	0.000	0.000	0.097
W	0.000	0.000	0.000	0.000	0.049	0.049	0.000	0.000	0.000	0.097
WNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NW	0.000	0.000	0.000	0.000	0.097	0.146	0.000	0.000	0.000	0.244
NNW	0.000	0.000	0.000	0.097	0.049	0.000	0.000	0.000	0.000	0.146
SUBTOTAL	0.000	0.000	0.146	0.487	0.682	1.120	0.049	0.000	0.000	2.484

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF STABILITY CLASS B	53
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B	51
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
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: 20010206

MEAN WIND SPEED = 7.22

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS



# 2000 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, 2000 - DEC 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.049	0.195	0.000	0.292	0.000	0.000	0.000	0.536
NNE	0.000	0.000	0.049	0.244	0.244	0.292	0.097	0.000	0.000	0.925
NE	0.000	0.049	0.049	0.292	0.000	0.000	0.000	0.000	0.000	0.390
ENE	0.000	0.000	0.097	0.049	0.000	0.000	0.000	0.000	0.000	0.146
E	0.000	0.000	0.000	0.049	0.000	0.000	0.000	0.000	0.000	0.049
ESE	0.000	0.000	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.049
SE	0.000	0.000	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.097
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	0.146	0.146	0.049	0.000	0.000	0.000	0.000	0.341
SSW	0.000	0.000	0.049	0.633	0.195	0.000	0.000	0.000	0.000	0.877
SW	0.000	0.000	0.000	0.195	0.097	0.049	0.000	0.000	0.000	0.341
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	0.049	0.244	0.000	0.000	0.000	0.292
WNW	0.000	0.000	0.097	0.000	0.000	0.049	0.000	0.000	0.000	0.146
NW	0.000	0.000	0.049	0.000	0.049	0.195	0.000	0.000	0.000	0.292
NNW	0.000	0.000	0.049	0.195	0.146	0.049	0.000	0.000	0.000	0.438
SUBTOTAL	0.000	0.049	0.779	1.997	0.828	1.169	0.097	0.000	0.000	4.920

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF STABILITY CLASS C	105
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C	101
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
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: 20010206

MEAN WIND SPEED = 5.79

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

2000  
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, 2000 - DEC 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.000	0.000	0.682	0.682	1.510	1.656	0.000	0.000	0.000	4.530
NNE	0.000	0.049	1.218	0.585	0.682	1.413	0.390	0.000	0.000	4.335
NE	0.000	0.000	0.828	0.779	0.536	0.195	0.000	0.000	0.000	2.338
ENE	0.000	0.097	0.731	0.438	0.097	0.000	0.000	0.000	0.000	1.364
E	0.000	0.146	0.536	0.097	0.049	0.000	0.000	0.000	0.000	0.828
ESE	0.000	0.049	0.195	0.000	0.000	0.049	0.000	0.000	0.000	0.292
SE	0.000	0.195	0.292	0.000	0.000	0.000	0.000	0.000	0.000	0.487
SSE	0.000	0.146	0.585	0.000	0.000	0.000	0.000	0.000	0.000	0.731
S	0.000	0.097	1.072	0.828	0.585	0.195	0.049	0.000	0.000	2.825
SSW	0.000	0.146	2.241	1.997	2.094	1.461	0.097	0.000	0.000	8.037
SW	0.000	0.195	1.510	1.461	0.341	0.049	0.000	0.000	0.000	3.556
WSW	0.000	0.146	0.828	0.633	0.146	0.244	0.000	0.000	0.000	1.997
W	0.000	0.244	0.682	0.633	0.390	0.438	0.000	0.000	0.000	2.387
WNW	0.000	0.097	0.487	0.487	0.925	0.925	0.049	0.000	0.000	2.971
NW	0.000	0.049	0.682	0.828	0.585	0.633	0.000	0.000	0.000	2.776
NNW	0.000	0.049	0.633	0.828	0.925	1.218	0.000	0.000	0.000	3.653
SUBTOTAL	0.000	1.705	13.200	10.278	8.865	8.475	0.585	0.000	0.000	43.108

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF STABILITY CLASS D	904
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D	885
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
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: 20010206

MEAN WIND SPEED = 5.15

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - DEC 31, 2000

WIND DIRECTION	CALM	WIND SPEED(MPH)								TOTAL
		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	
N	0.009	0.244	0.390	0.390	0.097	0.049	0.000	0.000	0.000	1.178
NNE	0.009	0.244	0.438	0.146	0.146	0.000	0.000	0.000	0.000	0.983
NE	0.012	0.195	0.731	0.390	0.000	0.000	0.000	0.000	0.000	1.328
ENE	0.009	0.146	0.536	0.341	0.000	0.000	0.000	0.000	0.000	1.032
E	0.005	0.049	0.341	0.049	0.000	0.000	0.000	0.000	0.000	0.444
ESE	0.001	0.049	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.099
SE	0.001	0.000	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.049
SSE	0.003	0.049	0.195	0.000	0.000	0.000	0.000	0.000	0.000	0.247
S	0.012	0.195	0.682	0.146	0.000	0.000	0.000	0.000	0.000	1.035
SSW	0.020	0.244	1.266	0.292	0.146	0.146	0.000	0.000	0.000	2.115
SW	0.024	0.779	1.023	0.195	0.097	0.244	0.000	0.000	0.000	2.362
WSW	0.016	0.487	0.731	0.146	0.000	0.146	0.000	0.000	0.000	1.526
W	0.020	0.292	1.218	0.487	0.195	0.049	0.000	0.000	0.000	2.261
WNW	0.026	0.925	0.974	0.341	0.244	0.000	0.000	0.000	0.000	2.510
NW	0.014	0.292	0.779	0.438	0.146	0.000	0.000	0.000	0.000	1.671
NNW	0.012	0.244	0.633	0.146	0.341	0.049	0.000	0.000	0.000	1.424
SUBTOTAL	0.195	4.433	10.034	3.507	1.413	0.682	0.000	0.000	0.000	20.263

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF STABILITY CLASS E	423
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	416
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
TOTAL HOURS CALM	4

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: 20010206

MEAN WIND SPEED = 2.83

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - DEC 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.017	0.195	0.146	0.000	0.000	0.000	0.000	0.000	0.000	0.358
NNE	0.012	0.146	0.097	0.049	0.000	0.000	0.000	0.000	0.000	0.304
NE	0.015	0.146	0.146	0.000	0.000	0.000	0.000	0.000	0.000	0.307
ENE	0.019	0.146	0.244	0.049	0.000	0.000	0.000	0.000	0.000	0.458
E	0.019	0.097	0.292	0.000	0.000	0.000	0.000	0.000	0.000	0.409
ESE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.002	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.051
SSE	0.005	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.102
S	0.005	0.049	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.102
SSW	0.044	0.438	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.920
SW	0.073	0.779	0.682	0.000	0.000	0.000	0.000	0.000	0.000	1.534
WSW	0.109	1.072	1.120	0.000	0.000	0.000	0.000	0.000	0.000	2.301
W	0.175	2.533	0.974	0.000	0.000	0.000	0.000	0.000	0.000	3.682
WNW	0.114	1.364	0.925	0.049	0.000	0.000	0.000	0.000	0.000	2.452
NW	0.085	1.266	0.438	0.000	0.000	0.000	0.000	0.000	0.000	1.790
NNW	0.036	0.390	0.341	0.049	0.000	0.000	0.000	0.000	0.000	0.816
SUBTOTAL	0.731	8.768	5.894	0.195	0.000	0.000	0.000	0.000	0.000	15.587

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF STABILITY CLASS F	344
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	320
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
TOTAL HOURS CALM	15

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: 20010206

MEAN WIND SPEED = 1.38

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 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, 2000 - DEC 31, 2000

WIND DIRECTION	WIND SPEED (MPH)									TOTAL
	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	
N	0.042	0.390	0.146	0.000	0.000	0.000	0.000	0.000	0.000	0.578
NNE	0.034	0.341	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.473
NE	0.027	0.244	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.368
ENE	0.019	0.146	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.263
E	0.030	0.341	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.420
ESE	0.008	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.105
SE	0.011	0.097	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.158
SSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S	0.019	0.195	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.263
SSW	0.027	0.292	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.368
SW	0.061	0.682	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.840
WSW	0.137	1.169	0.585	0.000	0.000	0.000	0.000	0.000	0.000	1.891
W	0.141	1.169	0.633	0.000	0.000	0.000	0.000	0.000	0.000	1.943
WNW	0.133	1.364	0.341	0.000	0.000	0.000	0.000	0.000	0.000	1.838
NW	0.114	1.364	0.097	0.000	0.000	0.000	0.000	0.000	0.000	1.576
NNW	0.072	0.731	0.195	0.000	0.000	0.000	0.000	0.000	0.000	0.998
SUBTOTAL	0.877	8.622	2.582	0.000	0.000	0.000	0.000	0.000	0.000	12.080

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF STABILITY CLASS G	279
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G	248
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
TOTAL HOURS CALM	18

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: 20010206

MEAN WIND SPEED = 1.10

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 WATTS BAR NUCLEAR PLANT EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

## JOINT PERCENTAGE FREQUENCIES OF WIND SPEED

### BY WIND DIRECTION DISREGARDING STABILITY CLASS

Watts Bar Nuclear Plant

OCT 1, 2000 - DEC 31, 2000

WIND DIRECTION	WIND SPEED(MPH)									TOTAL
	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	
N	0.073	0.858	1.478	1.383	1.860	2.289	0.000	0.000	0.000	7.941
NNE	0.088	0.811	2.003	1.144	1.335	2.289	0.525	0.000	0.000	8.195
NE	0.083	0.620	2.051	1.478	0.525	0.238	0.000	0.000	0.000	4.995
ENE	0.068	0.525	1.669	0.906	0.095	0.000	0.000	0.000	0.000	3.263
E	0.056	0.620	1.192	0.238	0.048	0.000	0.000	0.000	0.000	2.155
ESE	0.015	0.191	0.286	0.000	0.000	0.048	0.000	0.000	0.000	0.539
SE	0.025	0.334	0.477	0.000	0.000	0.000	0.000	0.000	0.000	0.836
SSE	0.034	0.286	0.811	0.000	0.000	0.000	0.000	0.000	0.000	1.131
S	0.083	0.525	2.146	1.097	0.620	0.191	0.048	0.000	0.000	4.709
SSW	0.159	1.097	4.006	3.147	2.766	1.907	0.095	0.000	0.000	13.178
SW	0.177	2.384	3.290	1.812	0.668	0.381	0.000	0.000	0.000	8.713
WSW	0.187	2.814	3.195	0.763	0.143	0.525	0.000	0.000	0.000	7.626
W	0.239	4.244	3.433	1.097	0.715	0.811	0.000	0.000	0.000	10.540
WNW	0.207	3.767	2.861	0.858	1.192	1.144	0.095	0.000	0.000	10.126
NW	0.161	3.052	2.098	1.240	0.858	0.954	0.000	0.000	0.000	8.363
NNW	0.109	1.574	1.907	1.335	1.431	1.335	0.000	0.000	0.000	7.691
SUBTOTAL	1.764	23.701	32.904	16.500	12.256	12.113	0.763	0.000	0.000	100.000

TOTAL HOURS OF VALID WIND OBSERVATIONS  
TOTAL HOURS OF OBSERVATIONS  
RECOVERABILITY PERCENTAGE  
TOTAL HOURS CALM

2097  
2208  
95.0  
37

METEOROLOGICAL FACILITY: Watts Bar Nuclear Plant  
WIND SPEED AND DIRECTION MEASURED AT 9.72 METER LEVEL

DATE PRINTED: 20010206

MEAN WIND SPEED = 3.71

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

# 2000 WATTS BAR NUCLEAR PLANT EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

## JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY STABILITY CLASS

Watts Bar Nuclear Plant

OCT 1, 2000 - DEC 31, 2000

WIND SPEED (MPH)	STABILITY CLASS						
	A	B	C	D	E	F	G
CALM	0.000	0.000	0.000	0.000	0.195	0.731	0.877
0.6- 1.4	0.000	0.000	0.049	1.705	4.433	8.768	8.622
1.5- 3.4	0.097	0.146	0.779	13.200	10.034	5.894	2.582
3.5- 5.4	0.195	0.487	1.997	10.278	3.507	0.195	0.000
5.5- 7.4	0.487	0.682	0.828	8.865	1.413	0.000	0.000
7.5-12.4	0.779	1.120	1.169	8.475	0.682	0.000	0.000
12.5-18.4	0.000	0.049	0.097	0.585	0.000	0.000	0.000
18.5-24.4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
>=24.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	1.559	2.484	4.920	43.108	20.263	15.587	12.080

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	2142
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	2053
TOTAL HOURS OF OBSERVATIONS	2208
JOINT RECOVERABILITY PERCENTAGE	93.0

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: 20010206

2000  
WATTS BAR NUCLEAR PLANT  
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

ATTACHMENT 1.0  
Deviations from ODCM Controls/Surveillance Requirements

Event Date(s)	ODCM Surveillance Missed	Description of Event/Resolution
2/17/2000	1/2.1.2 Table 1.1-2 Item 3.d Action G	<p>The U1 Shield Building Exhaust (SBE) noble gas monitor, iodine/particulate sampler, flow element and isokinetic sampler were declared inoperable on 2/22/2000 to perform 1-ODI-90-83 (18 Month Channel Calibration Of Shield Building Vent Flow Monitor Loop 1-LPF-90-400). All appropriate ODCM LCO Action Statements were placed in effect. All planned releases were suspended and flow estimates for the SBE were performed once per four hours. A PASS sampling REP drill was conducted on 2/24/2000 between the hours of 0830 and 1400. When Chemistry called the Control Room just after 1600 on 2/24/2000 to obtain the daily flow estimates, values of 0, 2000, and 0 cfm were reported for 0800, 1200, and 1600 respectively. At that time, the Chemistry Shift Lead realized that the PASS drill actions had caused a release through the Unit 1 SBE in violation of the ODCM requirements. The dates for all previously conducted PASS drills were obtained from the REP staff. In addition, Chemistry identified periods that the PASS facility was used to obtain the routine RCS samples or to calibrate PASS instrumentation. There were 45 identified dates/times for operation of the PASS ventilation system. All of these dates were compared to the operability history for the U1 SBE isokinetic sampler to determine the extent of condition. The U1 SBE isokinetic sampler was operable during all but 4 of these occurrences. RCS samples were obtained from PASS on 5/8/97, 1/12/99, 1/26/99, and 3/11/99 concurrently with the U1 SBE isokinetic sampler being declared inoperable. An evaluation indicated that the maximum amount of activity which could have been released during these events was 5.31E-03 Ci (if all the activity were released from the 10,100 ml of reactor coolant that passed through the PASF). An evaluation of the dose from these worst-case releases indicates that the dose to the maximum exposed individual would be less than 2.28E-06 mrem at the site boundary. These releases and doses are not a significant fraction of the total dose for calendar years in which they occurred.</p>



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12/06/2000	1/2.1.2 Table 1.1-2 Item 4.b Action D	To support a 92 day flow calibration on the Auxilairy Building Exhaust radiation monitor 0-RE-90-101 the particulate and iodine sample cart was removed for a period of 4 hours and 29 minutes exceeding the 4 hour limit for an inoperable particulate and iodine channel. The particulate and iodine samples collected before and after the 4 hours and 29 minutes showed no activity.
6/21/2000	1/2.2.2 Table 2.2-2 Item K	The weekly particulate filter obtained from the Auxiliary Building Exhaust radiation monitor 0-RE-90-101 was found to have been torn. The tear resulted in a non-representative sample. It was determined that the filter probably had been torn as a result of pressure changes in the sample line that were caused during an 18 month flow calibration.
07/16/2000	1/2.2.1 Table 2.2-1 Item A Composites	The ODCM requires composite samples to be maintained on all release pathways for tritium, iron, strontium, and gross alpha. The concentrations of the above nuclides for the previous composite periods are assumed as the concentration for the next composite period to perform pre-release calculations. However, the actual concentrations of those nuclides listed above for the composite period should be used to calculate quarterly doses. WBN has not been using the actual concentrations to perform quarterly dose calculations. WBN obtained all previous reported quarterly concentrations and monthly release volumes for liquid radwaste since the initial startup of WBN. The iron and tritium concentrations were corrected and the doses associated with corrected concentrations were insignificant. Below are the corrected concentrations.

Year	Date	Reported H3 Curies	Corrected H3 Curies	Reported Annual H3 Curies	Corrected Annual H3 Curies	Reported Fe Curies	Corrected Fe Curies	Reported Annual Fe Curies	Corrected Annual Fe Curies
1996	03/31/96	1.48E-02	8.27E-01			0.00E+00	0.00E+00		
	06/30/96	7.48E+00	4.48E+01			9.20E-06	2.73E-05		
	09/30/96	4.77E+01	6.86E+01			5.98E-05	1.18E-04		
	12/31/96	1.68E+02	2.13E+02	2.23E+02	3.28E+02	1.10E-04	8.28E-05	1.79E-04	2.28E-04
1997	03/31/97	1.49E+02	2.62E+02			2.56E-03	6.68E-03		
	06/30/97	2.72E+02	1.62E+02			6.35E-03	5.29E-03		
	09/30/97	1.74E+02	1.21E+02			7.43E-03	8.60E-03		
	12/31/97	4.45E+01	1.32E+01	6.40E+02	5.57E+02	9.97E-02	2.75E-01	1.16E-01	2.96E-01
1998	03/31/98	1.40E+01	2.62E+02			1.56E-01	2.78E-02		
	06/30/98	1.52E+02	1.62E+02			2.36E-02	1.39E-02		
	09/30/98	5.95E+01	1.21E+02			1.19E-02	5.73E-05		
	12/31/98	4.86E+02	1.32E+01	7.12E+02	5.57E+02	7.07E-05	5.79E-05	1.92E-01	4.19E-02
1999	03/31/99	3.10E+02	1.85E+02			6.18E-03	4.70E-02		
	06/30/99	3.30E+01	1.50E+01			7.60E-03	7.88E-03		
	09/30/99	8.09E+00	3.81E+01			1.07E-02	8.30E-03		
	12/31/99	1.19E+01	6.39E+01	3.63E+02	3.02E+02	1.09E-03	1.46E-03	2.56E-02	6.46E-02

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WATTS BAR NUCLEAR PLANT  
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ATTACHMENT 2.0  
Radiation Monitors Inoperable for Greater than 30 days

NONE