TENNESSEE VALLEY AUTHORITY

Post Office Box 2000, Decatur, Alabama 35609-2000

May 1, 2025

10 CFR 50.4
10 CFR 50.36(a)
10 CFR 50 Appendix I

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

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Subject: **2024 Annual Radioactive Effluent Release Report**

In accordance with Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3, Technical Specification Section 5.6.3, the Tennessee Valley Authority is submitting the BFN Annual Radioactive Effluent Release Report for the period January through December 2024. The Annual Radioactive Effluent Release Report is being submitted in conformance with Title 10 of the Code of Federal Regulations (10 CFR) 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

There are no new regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact Dave J. Renn at (256) 729-2636.

Respectfully,

Daniel A. Komm
Site Vice President

Enclosure: 2024 Annual Radioactive Effluent Release Report

cc (w/ Enclosure):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant
NRC Project Manager - Browns Ferry Nuclear Plant

ENCLOSURE

Browns Ferry Nuclear Plant
Units 1, 2, and 3

2024 Annual Radioactive Effluent Release Report

See Enclosed

Browns Ferry Nuclear Plant

Tennessee Valley Authority

Annual Radioactive Effluent Release Report

2024

Table of Contents

I. Introduction

II. Supplemental Information

A. Regulatory Limits

1. Gaseous Effluents

Fission and Activation Gases

The release of fission and activation gases is regulated by the dose limits of Title 10 of the Code of Federal Regulations (10 CFR) 50 Appendix I and Browns Ferry Nuclear Plant (BFN) Offsite Dose Calculation Manual (ODCM). The air dose to areas at and beyond the site boundary due to noble gases released in gaseous effluents per unit shall be limited during any calendar quarter to ≤ 5 millirad (mrad) for gamma radiation and ≤ 10 mrad for beta radiation; and during any calendar year to ≤ 10 mrad for gamma radiation and ≤ 20 mrad for beta radiation.

Iodines and Particulates with Half-Lives Greater than Eight Days

The release of iodines and particulates in gaseous effluent is regulated by the dose limits of 10 CFR 50 Appendix I and the BFN ODCM. The dose to a member of the public from radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half-lives greater than eight days in gaseous effluent released per unit to areas at and beyond the site boundary shall be limited to any organ during any calendar quarter to ≤ 7.5 millirem (mrem), and during any calendar year to ≤ 15 mrem.

2. Liquid Effluents

The release of radioactive liquid effluents is regulated by the dose limits of 10 CFR 50 Appendix I and the BFN ODCM. The doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas shall be limited during any calendar quarter to ≤ 1.5 mrem to the total body and ≤5 mrem to any organ and during any calendar year to ≤ 3 mrem to the total body and ≤ 10 mrem to any organ.

B. Limitation on Dose Rate

1. Gaseous Effluents

Fission and Activation Gases

The instantaneous release rate of fission and activation gases is based on the dose rate limits of 10 CFR 20.1301 and the BFN ODCM. The dose rate at any time to areas at and beyond the site boundary due to noble gases released in gaseous effluents from the site shall be limited to ≤ 500 mrem per year to the total body and ≤ 3000 mrem per year to the skin.

The BFN ODCM Section 7.2 determines the maximum noble gas release rate.

Iodines and Particulates with Half-Lives Greater than Eight Days

The instantaneous release rate of particulates and iodines is regulated by the dose rate limits of the BFN ODCM. The dose rate at any time to areas at and beyond the site boundary, due to I-131, I-133, H-3, and particulates with half-lives greater than eight days in gaseous effluent released from the site, shall be limited to ≤ 1500 mrem per year to any organ.

The BFN ODCM Section 7.3 determines the maximum particulate and iodine dose rates.

2. Liquid Effluents

The concentration of radionuclides in liquid effluents released at any time from the site to unrestricted areas shall be limited to the concentrations specified in 10 CFR 20.1001-20.2402, 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 2E-4 µCi per milliliter (ml) total activity.

C. Average Energy

The BFN 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. The use of dose rate is in accordance with NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants." Since the release rate is not used for effluent control, the average beta and gamma energies (E) for gaseous effluents discussed 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 and not included in this report.

D. Measurements & Approximations of Total Radioactivity

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

1. Gaseous Effluents

Noble gases in the building vent and stack (elevated) gaseous effluents are continuously monitored. The flow rate of the stack is continuously monitored and the building vent effluent flow rates are calculated once a shift based on the configuration of operating exhaust fans. The vent flow is calculated for each release. Gas grab samples of the stack are taken and analyzed weekly. Gas grab samples of in-service vents are taken and analyzed monthly. The specific noble gas activity concentrations and total volume of the gases are used to calculate the total Curies of noble gases released.

In 2019, Browns Ferry revised noble gas sampling and analysis procedures which included sampling with a larger volume (1240 cc gas Marinelli) and analyzing for a longer count time (1000 seconds). Since this revision, the site has detected low levels of noble gases in the stack vent, which is expected.

The tritium concentration is determined by the analysis of a monthly grab sample for each release point.

Iodines and particulates are continuously sampled on impregnated charcoal filters and particulate filters, respectively. The charcoal and particulate samples are replaced at least weekly and analyzed to determine specific activity concentrations. The specific activity concentrations and vent flow rate data are used weekly to verify that release rate limits were not exceeded. The specific activity concentrations and total volume of gaseous effluent are used on a monthly basis to determine the total curies of each particulate and iodine released during the month.

The gross alpha concentration is determined by analysis of a monthly particulate filter composite sample, and strontium-89 and strontium-90 are determined by analysis of a quarterly particulate filter composite sample for each release point.

Carbon-14 (C-14) production and gaseous waste effluent activity source term estimates were based on methodology provided in EPRI 1021106, Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents, December 2010. C-14 gaseous activity and dose calculations are made using the following assumptions: (1) continuous release of the estimated C-14 generated for each unit during power operation based on the number of Effective Fuel Power Days (EFPD) for the period, (2) maximum C-14 activity from literature values cited in EPRI Report 1021106, and (3) typical fraction as carbon dioxide for gaseous releases from literature values also cited in EPRI Report 1021106.

In 2019, Browns Ferry updated C-14 production rate estimates utilizing the proxy methodology provided in EPRI Report 1021106. TVA documented this update in Updated Carbon-14 Production Rate Estimates for Gaseous Releases at TVA NPG Sites, October 2019. The C-14 releases increased in 2019 due to all three units completing Extended Power Uprate (EPU). The EPU for each unit increased the units' MWth (Megawatt thermal) from 3,458 to 3,952 MWth. This increase in MWth is used in the calculation of C-14 releases. The increase in C-14 releases is expected.

2. Liquid Effluents

The gamma ray emitting radionuclide concentrations are determined for each batch by gamma ray spectroscopy analysis of a grab sample. The allowable release rate is calculated for each batch based upon the known dilution flow. The flow rate of the liquid effluent is continuously monitored and the total volume released in each batch is determined. The total gamma activity released in each batch is determined by multiplying the radionuclide concentrations by the total volume discharged. The total gamma activity released during the month is then determined by summing the gamma activity content of each batch discharged during the month.

The gross alpha and tritium concentrations are measured on a monthly composite sample. The strontium-89, strontium-90, and iron-55 are measured on a quarterly composite sample.

E. Batch Releases

1. Gaseous

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Number of Batch Releases		2	0	2	1	5
2. Total duration of batch releases	minutes	9.60E+01	NA	2.72E+02	4.80E+01	4.16E+02
3. Maximum batch release duration	minutes	4.80E+01	NA	2.24E+02	4.80E+01	2.24E+02
4. Average batch release duration	minutes	4.80E+01	NA	1.36E+02	4.80E+01	8.32E+01
5. Minimum batch release duration	minutes	4.80E+01	NA	4.80E+01	4.80E+01	4.80E+01

2. Liquid

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Number of Batch Releases		5	2	0	1	8
2. Total duration of batch releases	minutes	1.01E+03	4.05E+02	NA	1.90E+02	1.60E+03
3. Maximum batch release duration	minutes	2.05E+02	2.05E+02	NA	1.90E+02	2.05E+02
4. Average batch release duration	minutes	2.02E+02	2.03E+02	NA	1.90E+02	2.00E+02
5. Minimum batch release duration	minutes	1.95E+02	2.00E+02	NA	1.90E+02	1.90E+02
6. Avg stream flow during periods of release of liquid effluent into a flowing stream	CFS	6.38E+04	3.06E+04	2.33E+04	3.61E+04	NA

F. Abnormal Releases

1. Abnormal Gaseous Releases

In 2024, a total of four abnormal gaseous tritium releases occurred. Tritium was detected in the Auxiliary Boiler System when the boilers were in service for unit outages. The identified source of tritium to the auxiliary boiler system is main steam leak-by from degraded Steam Jet Air Ejector (SJAE) / Auxiliary Boiler valves to the auxiliary boiler header (CR 1508177). At the beginning of 2022, these valves were replaced during each unit's respective outage, with Unit 2 valves completing in Spring 2023. Following replacement of valves, low levels of tritium is still being detected in the auxiliary boilers, which may be due to in-service leak test (ISLT) not being completed on the Unit 1 valves (CR 1812308, 1921190).

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Number of abnormal Releases		1	1	1	1	4
2. Total Activity for abnormal tritium releases	Ci	2.36E-01	1.42E-02	1.96E-02	4.64E-02	3.17E-01

2. Abnormal Liquid Releases

In calendar year 2024, there were no abnormal liquid releases.

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Number of abnormal Releases		0	0	0	0	0
2. Total Activity for abnormal releases	Ci	NA	NA	NA	NA	NA

G. Non-routine, Planned Discharges

In calendar year 2024, there were no non-routine planned discharges.

H. Radioactive Waste System Treatment Changes

In calendar year 2024, there were no changes to the radwaste system or the process control program.

I. Land Use Census Changes

In calendar year 2024, there were no changes to the land use census.

J. Effluent Monitoring Instrument Inoperability greater than 30 Days

In calendar year 2024, there were no effluent monitoring instruments inoperable greater than 30 days.

K. Effluent Monitoring Equipment Sample Deviation

In calendar year 2024, there were two effluent monitoring equipment sample deviations.

The first sample deviation occurred during Unit 1 refueling outage (RFO). The 1-RM-90-0132D (Raw Cooling Water Radiation Monitor) was declared inoperable due to low flow at the monitor. The initial grab sample was not collected within the required ODCM, Table 1.1-1 Action D, sampling frequency of 8 hours; this was due to no flow available at radmonitor or alternate sample points listed in sampling procedure. Flow and sample was obtained 30 minutes after the required sample time with results less than minimum detectable concentration (CR 1956412).

The second deviation occurred when 0-RM-90-252 (Radwaste gaseous vent) was in an LCO and the sample and flow were not obtained within the required ODCM Table 1.1-2 sampling frequency. This deviation occurred due to personnel error. The sample and flow were obtained 1hour 55minutes after the required sample time, with results less than minimum detectable concentration (CR 1963186).

L. Offsite Dose Calculation Manual Changes

In calendar year 2024, there were no changes to the Offsite Dose Calculation Manual.

M. Errata/Corrections to Previous ARERRs

In calendar year 2024, there are no errata or corrections to report from previous ARERRs.

N. Groundwater Monitoring Program (NEI 07-07)

In 2007, the Nuclear Energy Institute (NEI) established the Groundwater Protection Initiative (GPI), NEI 07-07. The Groundwater Protection Initiative was established to 1) improve management of situations involving inadvertent radiological releases that get into groundwater and 2) to improve communication with external stakeholders to enhance trust and confidence on the part of local communities, states, the NRC, and the public in the nuclear industry's commitment to a high standard of public radiation safety and protection of the environment. This section provides information and sample results from on-site groundwater locations that were sampled in support of the Groundwater Protection Initiative at Browns Ferry Nuclear Plant. The groundwater wells described in this section are not part of the Radiological Environmental Monitoring Program (REMP).

In the early 2000s, BFN initiated a groundwater study to identify the source of low level tritium detected on-site. Results from the groundwater study (Investigation of Tritium Releases to Groundwater, 2006), suggest the source of tritiated groundwater was from historical leaks and spills associated with Radwaste/Condensate transfer tunnel. Groundwater and surface water level measurements during the study indicated the return channel and subsequently the Tennessee River will ultimately be recipient to tritiated groundwater discharge from the site. It has been determined that there are no groundwater wells onsite or within 2-miles of the site that are used as a source of drinking water. Groundwater movement in the area has been determined to be from the plant site toward the Tennessee River.

On-site groundwater monitoring was performed in 2024. The purpose of on-site groundwater monitoring is to ensure timely detection of inadvertent radiological releases to groundwater. Non-REMP groundwater wells monitor for potential leaks from plant equipment. As part of the GPI, BFN monitored a total of 30 groundwater wells located in the protected area and the owner-controlled area during 2024. Normal sampling frequencies are quarterly and semiannually with some wells sampled monthly if certain criteria are met or for investigation purposes. Samples are routinely analyzed for environmental level tritium (H-3) and principle gamma emitters (PGE) with selected wells analyzed for Hard-to-Detect (HTD) radionuclides (Gross Alpha, Fe-55, Ni-63, Sr-89, and Sr-90). In support of the groundwater program, the site also monitors recapture and on-site storm drains, catch basins, and surface water.

In 2024, low levels of tritium were detected in on-site groundwater wells as indicated in Table 9, Groundwater Data. Table 9 demonstrates all on-site groundwater wells that indicated detectable tritium concentrations. Tritium concentrations in 2024 ranged from 125 pCi/L, up to a maximum concentration of 6,890 pCi/L (MW-01). No other plant related radionuclides were detected in any groundwater well. There were no instances of any on-site spills or leaks that occurred during the 2024 reporting period that were communicated to off-site agencies or that met the criteria in NEI 07-07, Appendix A.

Table 9 - Groundwater Data

Sample Date	Well ID	Tritium Activity (pCi/L)
1st Quarter 2024		
2/14/2024	Dewat-A	1,630
2/13/2024	MW-01	2,110
2/13/2024	MW-02	1,020
2/13/2024	MW-02i	760
2/13/2024	MW-03	520
2/13/2024	MW-04	2,890
2/13/2024	MW-07	784
2/13/2024	MW-08	679
2/13/2024	MW-08i	336
2/13/2024	MW-15	247
2/13/2024	MW-19	328
2/14/2024	Well 6R	617

Sample Date	Well ID	Tritium Activity (pCi/L)
2nd Quarter 2024		
5/15/2024	Dewat-A	1,930
5/14/2024	MW-01	811
5/15/2024	MW-02	588
5/15/2024	MW-02i	126
5/15/2024	MW-03	323
5/14/2024	MW-04	461
5/14/2024	MW-07	245
5/14/2024	MW-08	203
5/14/2024	MW-08i	224
5/13/2024	MW-15	125
5/15/2024	Well 6R	316

3rd Quarter 2024		
8/6/2024	Dewat-A	2,250
8/7/2024	MW-01	6,890
8/6/2024	MW-02	612
8/6/2024	MW-02i	549
8/7/2024	MW-03	389
8/6/2024	MW-04	979
8/6/2024	MW-07	338
8/6/2024	MW-08	352
8/6/2024	MW-08i	296
8/7/2024	MW-15	544
8/7/2024	MW-18	426
8/6/2024	MW-19	435
8/7/2024	Well 6R	324

4th Quarter 2024		
11/21/2024	Dewat-A	5,340
11/20/2024	MW-01	1,990
11/20/2024	MW-02	1,210
11/20/2024	MW-02i	2,210
11/21/2024	MW-03	374
11/20/2024	MW-04	1,020
11/20/2024	MW-07	362
11/21/2024	MW-08	471
11/21/2024	MW-08i	283
11/19/2024	MW-14	455
11/21/2024	MW-15	459
11/20/2024	MW-18	531
11/20/2024	MW-19	234
11/21/2024	Well 6R	462
11/19/2024	Well 5s	588

III. Gaseous Effluents

Table 1-A Gaseous Effluents - Summation of all Releases

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	Error %
A. Fission and Activation Gases							
1. Total Release	Curies	<LLD	<LLD	3.12E-01	<LLD	3.12E-01	± 45%
2. Average Release Rate for Period	µCi/sec	<LLD	<LLD	3.93E-02	<LLD	9.87E-03	
3. Percent of Tech Spec Limit	%	*	*	*	*	*	
B. Iodines							
1. Total I-131 Release	Curies	7.92E-06	1.03E-04	3.81E-05	1.03E-05	1.59E-04	± 36%
2. Average Release Rate for Period	µCi/sec	1.01E-06	1.31E-05	4.79E-06	1.29E-06	5.04E-06	
3. Percent of Tech Spec Limit	%	*	*	*	*	*	
C. Particulates							
1. Total Release	Curies	5.19E-04	8.24E-05	3.66E-04	2.28E-03	3.24E-03	± 35%
2. Average Release Rate for Period	µCi/sec	6.60E-05	1.05E-05	4.61E-05	2.86E-04	1.03E-04	
3. Percent of Tech Spec Limit	%	*	*	*	*	*	
D. Tritium							
1. Total Release	Curies	3.71E+01[1]	2.10E+01[1]	4.34E+01[1]	1.43E+01[1]	1.16E+02[1]	± 21%
2. Average Release Rate for Period	µCi/sec	4.73E+00	2.67E+00	5.45E+00	1.81E+00	3.67E+00	
3. Percent of Tech Spec Limit	%	*	*	*	*	*	
E. Gross Alpha							
1. Total Release	Curies	<LLD	<LLD	<LLD	<LLD	<LLD	
2. Average Release Rate for Period	µCi/sec	<LLD	<LLD	<LLD	<LLD	<LLD	
3. Percent of Tech Spec Limit	%	*	*	*	*	*	
F. Carbon-14							
1. Total Release	Curies	1.17E+01	1.34E+01	1.27E+01	1.38E+01	5.16E+01	
2. Percent of Tech Spec Limit	%	*	*	*	*	*	

[1] Includes activity from abnormal gaseous releases. Dilution flow was not determined for abnormal releases.
*Applicable Limits are expressed in terms of dose. Reference Section VI, Radiological Impact, Table 3.

Table 1-B Gaseous Effluents – Ground Level Releases (Batch)[1]

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Fission and Activation Gases						
Kr-85	Ci	NA	NA	NA	NA	NA
Kr-85m	Ci	NA	NA	NA	NA	NA
Kr-87	Ci	NA	NA	NA	NA	NA
Kr-88	Ci	NA	NA	NA	NA	NA
Xe-133	Ci	NA	NA	NA	NA	NA
Xe-135m	Ci	NA	NA	NA	NA	NA
Xe-138	Ci	NA	NA	NA	NA	NA
Total For Period	Ci	NA	NA	NA	NA	NA
2. Iodines						
I-131	Ci	NA	NA	NA	NA	NA
I-133	Ci	NA	NA	NA	NA	NA
I-135	Ci	NA	NA	NA	NA	NA
Total For Period	Ci	NA	NA	NA	NA	NA
3. Particulates						
Na-24	Ci	NA	NA	NA	NA	NA
Mn-54	Ci	NA	NA	NA	NA	NA
Co-58	Ci	NA	NA	NA	NA	NA
Co-60	Ci	NA	NA	NA	NA	NA
Zn-65	Ci	NA	NA	NA	NA	NA
Sr-89	Ci	NA	NA	NA	NA	NA
Sr-90	Ci	NA	NA	NA	NA	NA
Ag-110m	Ci	NA	NA	NA	NA	NA
Cs-134	Ci	NA	NA	NA	NA	NA
Cs-137	Ci	NA	NA	NA	NA	NA
Ba-140	Ci	NA	NA	NA	NA	NA
La-140	Ci	NA	NA	NA	NA	NA
Total For Period	Ci	NA	NA	NA	NA	NA
4. Gross Alpha						
Gross Alpha	Ci	NA	NA	NA	NA	NA
5. Tritium						
H-3	Ci	NA	NA	NA	NA	NA

[1] There were no gaseous batch releases through the ground release vents in 2024.

Table 1-B Gaseous Effluents – Ground Level Releases (Continuous)

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Fission and Activation Gases						
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
2. Iodines						
I-131	Ci	1.38E-06	6.37E-06	2.93E-06	1.92E-06	1.26E-05
I-133	Ci	7.32E-06	<LLD	<LLD	<LLD	7.32E-06
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	8.70E-06	6.37E-06	2.93E-06	1.92E-06	1.99E-05
3. Particulates						
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	3.32E-06	<LLD	3.32E-06
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	<LLD	3.32E-06	<LLD	3.32E-06
4. Gross Alpha						
Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
5. Tritium						
H-3	Ci	1.78E+01[1]	1.05E+01[1]	1.60E+01[1]	9.06E+00[1]	5.34E+01[1]

[1] Includes activity from abnormal gaseous releases. Dilution flow was not determined for abnormal releases.

Table 1-C Gaseous Effluents – Elevated Releases (Batch)[1]

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Fission and Activation Gases						
Kr-85	Ci	NA	NA	NA	NA	NA
Kr-85m	Ci	NA	NA	NA	NA	NA
Kr-87	Ci	NA	NA	NA	NA	NA
Kr-88	Ci	NA	NA	NA	NA	NA
Xe-133	Ci	NA	NA	NA	NA	NA
Xe-135m	Ci	NA	NA	NA	NA	NA
Xe-138	Ci	NA	NA	NA	NA	NA
Total For Period	Ci	NA	NA	NA	NA	NA
2. Iodines						
I-131	Ci	NA	NA	NA	NA	NA
I-133	Ci	NA	NA	NA	NA	NA
I-135	Ci	NA	NA	NA	NA	NA
Total For Period	Ci	NA	NA	NA	NA	NA
3. Particulates						
Mn-54	Ci	NA	NA	NA	NA	NA
Co-58	Ci	NA	NA	NA	NA	NA
Co-60	Ci	NA	NA	NA	NA	NA
Zn-65	Ci	NA	NA	NA	NA	NA
Sr-89	Ci	NA	NA	NA	NA	NA
Sr-90	Ci	NA	NA	NA	NA	NA
Ag-110m	Ci	NA	NA	NA	NA	NA
Cs-134	Ci	NA	NA	NA	NA	NA
Cs-137	Ci	NA	NA	NA	NA	NA
Ba-140	Ci	NA	NA	NA	NA	NA
La-140	Ci	NA	NA	NA	NA	NA
Total For Period	Ci	NA	NA	NA	NA	NA
4. Gross Alpha						
Gross Alpha	Ci	NA	NA	NA	NA	NA
5. Tritium						
H-3	Ci	NA	NA	NA	NA	NA

[1] There were no gaseous batch releases through the elevated release vent in 2024.

Table 1-C Gaseous Effluents – Elevated Releases (Continuous)

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Fission and Activation Gases						
Ar-41	Ci	<LLD	<LLD	3.12E-01	<LLD	3.12E-01
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	<LLD	3.12E-01	<LLD	3.12E-01
2. Iodines						
I-131	Ci	2.16E-06	5.27E-05	1.84E-05	8.39E-06	8.17E-05
I-133	Ci	8.53E-05	1.37E-04	8.10E-05	9.16E-05	3.95E-04
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	8.74E-05	1.90E-04	9.94E-05	1.00E-04	4.76E-04
3. Particulates						
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	1.95E-06	4.48E-06	1.28E-06	1.44E-07	7.86E-06
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Au-199	Ci	2.11E-04	2.20E-05	3.66E-05	5.33E-05	3.23E-04
Total For Period	Ci	2.13E-04	2.65E-05	3.79E-05	5.35E-05	3.31E-04
4. Gross Alpha						
Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
5. Tritium						
H-3	Ci	4.20E+00	1.06E+00	2.94E+00	1.20E+00	9.41E+00
6. Carbon-14						
C-14	Ci	1.17E+01	1.34E+01	1.27E+01	1.38E+01	5.16E+01

Table 1-D Gaseous Effluents – Mixed Mode Releases (Batch)[1]

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Fission and Activation Gases						
Kr-85	Ci	<LLD	NA	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	NA	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	NA	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	NA	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	NA	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	NA	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	NA	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	NA	<LLD	<LLD	<LLD
2. Iodines						
I-131	Ci	<LLD	NA	<LLD	<LLD	<LLD
I-133	Ci	<LLD	NA	<LLD	<LLD	<LLD
I-135	Ci	<LLD	NA	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	NA	<LLD	<LLD	<LLD
3. Particulates						
Na-24	Ci	<LLD	NA	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	NA	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	NA	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	NA	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	NA	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	NA	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	NA	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	NA	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	NA	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	NA	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	NA	<LLD	<LLD	<LLD
La-140	Ci	<LLD	NA	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	NA	<LLD	<LLD	<LLD
4. Gross Alpha						
Gross Alpha	Ci	<LLD	NA	<LLD	<LLD	<LLD
5. Tritium						
H-3	Ci	7.58E-04	NA	1.12E-03	4.54E-04	2.33E-03

[1] Batch releases occurred in 1st, 3rd, and 4th Quarters 2024 in support of unit outages. There were no batch releases in 2nd Quarter 2024.

Table 1-D Gaseous Effluents – Mixed Mode Releases (Continuous)

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Fission and Activation Gases						
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
2. Iodines						
I-131	Ci	4.38E-06	4.38E-05	1.68E-05	<LLD	6.49E-05
I-133	Ci	3.97E-05	1.96E-04	6.78E-05	<LLD	3.04E-04
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	4.41E-05	2.40E-04	8.45E-05	<LLD	3.69E-04
3. Particulates						
Na-24	Ci	<LLD	<LLD	1.11E-04	1.12E-03	1.23E-03
Cr-51	Ci	1.48E-04	<LLD	4.10E-05	1.96E-05	2.09E-04
Mn-54	Ci	1.09E-05	6.27E-06	4.85E-06	1.02E-04	1.24E-04
Co-58	Ci	3.49E-05	2.71E-06	1.02E-05	4.34E-04	4.82E-04
Co-60	Ci	1.04E-04	4.32E-05	1.33E-04	3.36E-04	6.16E-04
Zn-65	Ci	<LLD	<LLD	<LLD	1.59E-04	1.59E-04
Mo-99	Ci	<LLD	<LLD	1.35E-05	3.36E-05	4.71E-05
Sr-89	Ci	<LLD	<LLD	<LLD	1.05E-06	1.05E-06
Sr-90	Ci	<LLD	<LLD	<LLD	2.08E-07	2.08E-07
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	8.77E-06	3.71E-06	7.65E-06	2.13E-05	4.14E-05
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Au-199	Ci	<LLD	<LLD	3.64E-06	<LLD	3.64E-06
Total For Period	Ci	3.06E-04	5.59E-05	3.25E-04	2.22E-03	2.91E-03
4. Gross Alpha						
Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
5. Tritium						
H-3	Ci	1.51E+01	9.39E+00	2.44E+01	4.13E+00	5.30E+01

IV. Liquid Effluents

Table 2-A Liquid Effluents - Summation of all Releases

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	Error %
A. Fission and Activation Products							
1. Total Release	Curies	3.24E-03	3.98E-04	9.65E-04	1.13E-02	1.59E-02	± 9%
2. Average Diluted Concentration	µCi/mL	4.67E-11	2.95E-12	5.74E-12	3.27E-10	3.91E-11	
3. Percent of Tech Spec Limit*	%	*	*	*	*	*	
B. Tritium							
1. Total Release	Curies	4.74E-01	2.54E-01	1.19E-01	1.28E-01	9.76E-01	± 6%
2. Average Diluted Concentration	µCi/mL	6.83E-09	1.88E-09	7.11E-10	3.69E-09	2.40E-09	
3. Percent of Tech Spec Limit	%	*	*	*	*	*	
C. Dissolved and Entrained Noble Gases							
1. Total Release	Curies	<LLD	<LLD	<LLD	<LLD	<LLD	± 8%
2. Average Diluted Concentration	µCi/mL	<LLD	<LLD	<LLD	<LLD	<LLD	
3. Percent of Tech Spec Limit	%	*	*	*	*	*	
D. Gross Alpha Radioactivity							
1. Total Release	Curies	<LLD	<LLD	<LLD	<LLD	<LLD	± 48%
2. Average Diluted Concentration	µCi/mL	<LLD	<LLD	<LLD	<LLD	<LLD	
E. Volume of Liquid Waste to Discharge Canal (prior to dilution)	Liters	3.78E+07	6.29E+07	1.02E+08	1.27E+07	2.16E+08	
F. Volume of Dilution Water for Period	Liters	6.94E+10	1.35E+11	1.68E+11	3.47E+10	4.07E+11	± 10%
G. Total CCW	Gigal	2.38E+02	2.76E+02	2.57E+02	2.78E+02	1.05E+03	

* Applicable Limits are expressed in terms of dose. Reference Section VI, Radiological Impact, Table 4.

Table 2-B Liquid Effluents – Batch Mode

	Units	1st Quarter	2nd Quarter	3rd[1] Quarter	4th Quarter	Total
1. Fission and Activation Products						
Au-199	Ci	<LLD	<LLD	NA	7.08E-04	7.08E-04
Na-24	Ci	<LLD	<LLD	NA	2.68E-05	2.68E-05
Cr-51	Ci	<LLD	<LLD	NA	3.77E-03	3.77E-03
Mn-54	Ci	1.68E-04	1.47E-05	NA	2.34E-04	4.16E-04
Fe-55	Ci	2.38E-04	7.38E-05	NA	6.73E-04	9.84E-04
Fe-59	Ci	<LLD	<LLD	NA	9.28E-05	9.28E-05
Co-58	Ci	<LLD	<LLD	NA	4.26E-04	4.26E-04
Co-60	Ci	2.74E-03	2.90E-04	NA	4.82E-03	7.85E-03
Zn-65	Ci	<LLD	<LLD	NA	1.42E-04	1.42E-04
Zr-95	Ci	<LLD	<LLD	NA	2.62E-05	2.62E-05
Sr-89	Ci	<LLD	<LLD	NA	1.54E-05	1.54E-05
Nb-95	Ci	<LLD	<LLD	NA	2.92E-05	2.92E-05
Ag-110m	Ci	<LLD	<LLD	NA	2.01E-04	2.01E-04
Sb-124	Ci	<LLD	<LLD	NA	1.08E-05	1.08E-05
Cs-137	Ci	9.58E-05	1.91E-05	NA	1.47E-04	2.62E-04
Total For Period	Ci	3.24E-03	3.98E-04	NA	1.13E-02	1.50E-02
2. Dissolved and Entrained Gases						
Xe-133	Ci	<LLD	<LLD	NA	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	NA	<LLD	<LLD
Total For Period	Ci	<LLD	<LLD	NA	<LLD	<LLD
3. Tritium						
H-3	Ci	4.03E-01	1.72E-01	NA	1.08E-01	6.83E-01

[1] There were no batch releases during 3rd Quarter 2024.

Table 2-B Liquid Effluents – Continuous Mode

	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1. Fission and Activation Products						
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	9.65E-04	<LLD	9.65E-04
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	CI	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	<LLD	9.65E-04	<LLD	9.65E-04
2. Dissolved and Entrained Gases						
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total For Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
3. Tritium	Ci	7.14E-02	8.25E-02	1.19E-01	1.95E-02	2.93E-01
4. Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

V. Solid Waste Storage and Shipment

A. Solid Waste Shipped Off-site for Burial or Disposal (Not Irradiated Fuel)

1.	Type of Waste	Units	Jan-June	July-Dec	Error %
a.	Spent resins, filters, filter sludge evaporator bottoms, etc.	m^3	1.29E+02	3.57E+01	+/-25.0
		Ci	4.66E+02	1.24E+01	+/-25.0
b.	Dry compressible waste, contaminated equipment, etc.	m^3	1.32E+03	1.45E+03	+/-25.0
		Ci	6.89E-01	1.69E+00	+/-25.0
c.	Irradiated components, control rod blades & LPRMs with fission chambers	m^3	0.00E+00	0.00E+00	+/-25.0
		Ci	0.00E+00	0.00E+00	+/-25.0
d.	Other – Combined Packages	m^3	0.00E+00	0.00E+00	+/-25.0
		Ci	0.00E+00	0.00E+00	+/-25.0

2. Estimate of major nuclide composition (by type of waste)

a. Spent resins, filters, filter sludge evaporator bottoms, etc.

Isotope	% Abundance	Curies
H-3	7.49E-03	3.57E-02
C-14	5.64E-02	2.69E-01
Cr-51	1.80E+00	8.60E+00
Mn-54	9.90E+00	4.72E+01
Fe-55	1.31E+01	6.27E+01
Fe-59	5.93E-01	2.83E+00
Co-57	4.45E-02	2.12E-01
Co-58	1.89E+01	9.00E+01
Co-60	3.23E+01	1.54E+02
Ni-59	4.24E-03	2.02E-02
Ni-63	1.49E+00	7.10E+00
Zn-65	1.27E+01	6.06E+01
Sr-89	5.18E-01	2.47E+00
Sr-90	1.51E-02	7.21E-02
Zr-95	3.98E-01	1.90E+00
Nb-95	7.78E-02	3.71E-01
Tc-99	1.06E-02	5.06E-02
Ag-110m	5.58E+00	2.66E+01
Sb-124	1.33E-01	6.34E-01
Cs-134	4.03E-02	1.92E-01
Cs-137	2.28E+00	1.09E+01
Pu-238	4.30E-05	2.05E-04
Pu-239	1.94E-05	9.24E-05
Pu-240	1.94E-05	9.24E-05
Pu-241	3.29E-03	1.57E-02
Am-241	4.86E-05	2.32E-04
Cm-242	2.37E-05	1.13E-04
Cm-243	1.61E-05	7.68E-05
Cm-244	1.61E-05	7.67E-05

b. Dry compressible waste, contaminated equipment, etc.

Isotope	% Abundance	Curies
H-3	7.45E+00	1.35E-02
C-14	4.19E-04	2.90E-05
Cr-51	3.98E+00	1.33E-01
Mn-54	6.31E+00	2.17E-01
Fe-55	8.23E-01	7.78E-01
Fe-59	1.02E+00	2.28E-02
Co-58	4.92E+01	8.29E-02
Co-60	1.42E+01	9.07E-01
Ni-63	1.80E+00	2.66E-02
Zn-65	5.05E-01	5.87E-02
Sr-89	1.02E-03	1.32E-04
Sr-90	0.00E+00	2.90E-05
Zr-95	1.52E-01	2.00E-02
Nb-95	3.33E-01	4.28E-02
Ag-110m	4.83E-01	4.73E-02
Sb-124	7.32E-02	6.67E-03
Sb-125	7.32E-02	8.25E-08
Cs-137	1.81E+00	2.83E-02

c. Irradiated components, control rod blades & LPRMs with fission chambers

Nuclide	Percentage	Curies
0	0	0

d. Other –Combined Packages

Nuclide	Percentage	Curies
0	0	0

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
1	ESS(TVA)	Energy Solutions Services Inc. 1560 Bear Creek Road
19	Hittman Transport Services	Energy Solutions LLC.(Clive) Clive Disposal Site – Containerized Waste Facility
6	Hittman Transport Services	Energy Solutions Memphis 1790 Dock Street
9	Hittman Transport Services	Energy Solutions Services Inc. 1560 Bear Creek Road
1	Hittman Transport Services	Unitech Service Group, Inc. Oak Ridge Services Center
14	Interstate Ventures, Inc.	Waste Control Specialist, LLC TSDF
1	Interstate Ventures, Inc	Waste Control Specialist, LLC CWF
46	Specialty Transport, Inc.	Unitech Service Group, Inc. Oak Ridge Services Center

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
0	NA	NA

VI. Radiological Impact to Man

A. Introduction

Potential doses to the "maximum exposed individual" and the population around Browns Ferry Nuclear Plant (BFN) are calculated for each quarter as required in Section 5.2 of the Offsite Dose Calculation Manual (ODCM). The methodology used to estimate dose for determining plant releases for the reporting period is specified in Sections 6 and 7 of the ODCM. Dispersion of radioactive effluents in the environment is estimated using meteorological data and river flows. In this report, the doses resulting from releases are described and compared to limits established for BFN.

B. 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 (ALARA).

The air dose limits in areas at and beyond the Site Boundary due to noble gases released in gaseous effluents per unit are:

- ≤ 5 mrad per quarter and ≤ 10 mrad per year for gamma radiation.
  and
- ≤ 10 mrad per quarter and ≤ 20 mrad per year for beta radiation.

The dose limits to a member of the public in an unrestricted area from radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half lives > 8 days released in gaseous effluents for each unit are:

- ≤ 7.5 mrem per quarter and ≤ 15 mrem per year to any organ.

The dose or dose commitment to a member of the public from radioactive material in liquid effluents released to unrestricted areas are:

- ≤ 1.5 mrem per quarter and ≤ 3 mrem per year to the total body,
  and
- ≤ 5 mrem per quarter and ≤ 10 mrem per year to any organ.

The limit for the total effective dose equivalent to an individual member of the public inside the site boundary is:

- 100 mrem per year.

The Environmental Protection Agency limits for total dose to any member of the public in the vicinity of a nuclear power plant, established in the Environmental Dose Standard of 40 CFR 190, are:

- ≤ 25 mrem per year to the whole body, ≤ 75 mrem per year to the thyroid, and
- ≤ 25 mrem per year to any other organ.

C. Dose Calculations

Estimated doses to members of the public are determined using the following computer models: Gaseous Effluent Licensing Code (GELC), and the Quarterly Water Dose Assessment Code (QWATA). These models are based on guidance provided by the Nuclear Regulatory Commission (NRC) 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 to ensure conservative reporting of data. The values chosen will tend to overestimate the dose. The expected dose to actual individuals is lower. The calculated doses are presented in Tables 3, 4, and 5.

D. Doses from Airborne Effluents

For airborne effluents, members of 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 consumed by animals.

Releases from the stack are considered to be elevated releases. The Joint Frequency Distributions (JFDs) for elevated releases are based on wind directions and wind speeds measured at 90.29 meters and the vertical temperature difference between 10.03 and 89.59 meters. A ten-year meteorological average from 2009-2018 is given in the Meteorological Data Tables 6, 7, 8.

Meteorological variables at BFN are measured continuously. Measurements collected include wind speed and wind direction at heights of 10.5, 45.74, and 90.29 meters above the ground, and temperature at heights of 10.03, 45.30, and 89.59 meters above the ground. In 2023, BFN revised ODCM from using quarterly JFDs to ten-year averaged JFDs, using 2009-2018 data. Ten-year JFDs are calculated for each release point using the appropriate levels of meteorological data. The JFD gives the percentage of the time 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 noncalm wind directions less than

1.6 m/s (3.5 mph). Stability classes are determined from the vertical temperature difference between two measurement levels.

The generally open terrain around BFN does not cause any significant effects on the transport and dispersion of gaseous effluents from the plant. Within 30 kilometers of BFN, the terrain is mostly gently rolling hills (30-60 meters). Between 30 and 80 kilometers, the hills become larger to the north and south and mountainous to the east and northeast. The Tennessee River/Wheeler Lake may have a minor effect on transport and dispersion in the immediate vicinity of BFN during periods of winds with a southerly component, overcast skies, and relatively high wind speeds. Also, the lower layer (10-45 meters) stability class tends to be more stable. However, during this infrequent condition, dose estimates will be conservative.

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

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

Dose to an organ due to releases of airborne effluents are estimated for the inhalation, ground contamination, and ingestion pathways. The ingestion pathway is further divided into three possible contributing pathways: ingestion of cow/goat milk, ingestion of beef, and ingestion of vegetables. Doses from applicable pathways are calculated for each 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. However, for the ingestion dose, only those pathways that exist for each receptor are considered in the sum, e.g., milk ingestion doses are included only for locations where milk was consumed without commercial preparation and vegetable ingestion is included only for those locations where a garden was 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.

The maximum organ dose, thyroid dose, and total body dose from airborne effluents are presented in Table 3.

E. Doses from Liquid Effluents

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

sediment (recreation). The concentration of radionuclides in the Tennessee River is calculated by a computer model which uses measured hydraulic data downstream of BFN.

Parameters used to determine the doses are based on guidance given by the NRC for maximum ingestion rates, exposure times, etc.

Wherever possible, parameters used in the dose calculation are site specific. The models that are used to estimate doses, as well as the parameters input to the models, are described in detail in the BFN ODCM.

Radionuclide concentrations in the Tennessee River are calculated assuming that releases in liquid effluents are continuous. When necessary, liquid releases from BFN, located at Tennessee River Mile 294, 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-fifth 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 the first downstream dam (Wheeler Dam), at Tennessee River Mile 283.

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's release point. The maximum exposed 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. The maximum exposed individual dose from drinking water is assumed to be that calculated at the nearest downstream public water supply [West Morgan - East Lawrence (WMEL)]. This could be interpreted as indicating that the maximum exposed individual, as assumed for liquid releases from BFN, is an individual who obtains all drinking water at WMEL, consumes fish caught from the Tennessee River between BFN and Wheeler Dam, and spends 500 hours per year on the shoreline just downstream of the plant's release point. Doses calculated for the maximum exposed individual due to liquid effluents for each quarter in the period are presented in Table 4 along with the average river flows past the plant site for the periods.

F. Population Doses

Population doses due to airborne effluents are calculated for people 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 consumed milk, vegetables, and meat produced within the sector in which the individual resides.

Population doses 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 historical

recreational data on the number of shoreline visits at downstream locations. Population doses calculated for airborne and liquid effluents are presented in Tables 3 and 4.

G. Offsite Direct Radiation Dose

External gamma radiation levels were measured by environmental dosimeters deployed around BFN as part of the 2024 Radiological Environmental Monitoring Program (REMP). The 2024 environmental dosimeters were evaluated in accordance with the guidance provided in ANSI N13.37. The process of this evaluation is summarized: 1) The average field dosimeter results is determined for each location and normalized to a standard quarter of 91 days, 2) The field results is adjusted by the transit and shield (storage) dose to determine the net dose at each location; this is performed at each location for each quarter, and the four quarters are summed to determine the annual net dose, 3) The quarterly and annual historical average net dose was determined for each monitoring location, 4) The standard deviation of each historical net dose was calculated, to determine the 90th percentile standard deviation for both the quarterly and annual results, 5) the 2024 quarterly and annual net dose are compared to the historical averages (plus 3 times the 90th percentile standard deviation, also known as the minimum differential dose) to determine if any facility related dose was identified at any location during any quarter or the year. Baseline adjusted dose reflect evaluation in accordance with ANSI N13.37, where facility dose is only recorded if the measurement exceeds the baseline plus Minimum Differential Dose (MDD)

The monitoring locations are grouped according to the distance from the plant. The onsite group consists of dosimeters within 2 miles of the plant. The offsite group consists of all locations greater than 2 miles from the plant. This difference in onsite and offsite averages is consistent with levels measured for preoperational and construction phases at BFN where the average radiation levels onsite were generally 2-6 mrem/quarter higher than the levels offsite. This may be attributed to natural variations in environmental radiation levels, earth moving activities onsite, the mass of concrete employed in the construction of the plant, or other undermined influences. In order to implement the methodology of ANSI N13.37, the dose received by dosimeters in shielded storage that are used as unexposed controls was determined. This in turn was used to account for extraneous dose that should be removed from the gross measurements as measured by field dosimeters.

The result of the evaluation of environmental dosimeters is that there was no facility related dose measured in the environment around Browns Ferry. There were no quarterly or annual dosimeters that exceed the historical baseline plus the calculated minimum differential dose.

H. Dose to a Member of the Public Inside the Site Boundary

Pursuant to ODCM Section 7.7.5, a review was performed to determine the highest dose to a member of the public inside the site boundary. The dose to a member of the public consists of the sum of dose commitments from effluent releases as well as any direct radiation dose. The gaseous effluent dose commitment is negligible compared to the direct radiation dose.

The direct radiation dose was determined from area environmental dosimeters located on-site. The critical location was determined to be an Optically Stimulated Luminescence

(OSL) dosimeter near the Livewell Center (SE-1). The annual background baseline is 79.5 mrem/yr at the Livewell Center and the 2024 annual field dose was 79.3 mrem/yr. The direct radiation dose at the Livewell Center, accounting for background and occupancy factor, was determined to be non-detectable as this location. The annual net dose was non-detectable for a Member of Public inside the Site Boundary, which is below the 10 CR 20 annual limit of 100 mrem.

I. Total Dose

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

The annual dose to any organ other than the thyroid for the maximum exposed individual is conservatively calculated 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 REMP. This dose is compared to the 40 CFR 190 limit for total body or any organ dose (other than the thyroid) to determine compliance.

The annual thyroid dose to the maximum exposed 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 REMP. This dose is compared to the 40 CFR 190 limit for thyroid dose to determine compliance.

Total dose from the fuel cycle is presented in Table 5.

J. Tables

Table 3-A Doses from Airborne Effluents – 1st Quarter[1]

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
Gamma Air	0.00E+00 mrad	5 mrad	< 1%	NA
Beta Air	0.00E+00 mrad	10 mrad	< 1%	NA
NG Total Body	1.81E-04 mrad	NA	NA	NNW 1650 meters
NG Skin	2.13E-04 mrad	NA	NA	NNW 1650 meters
Organ Doses (Iodine, Tritium, Particulates with >8-Day half-life)				
Child / Thyroid	6.70E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Total Body	6.71E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Bone	2.41E-02 mrem	7.5 mrem	< 1%	NNW 5990 meters

Population Doses

Total Body Dose	2.01E-01 man-rem
Maximum Organ Dose	8.66E-01 man-rem (Bone)

Table 3-B Doses from Airborne Effluents – 2nd Quarter[1]

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
Gamma Air	0.00E+00 mrad	5 mrad	< 1%	NA
Beta Air	0.00E+00 mrad	10 mrad	< 1%	NA
NG Total Body	7.52E-05 mrad	NA	NA	NNW 1650 meters
NG Skin	8.85E-05 mrad	NA	NA	NNW 1650 meters
Organ Doses (Iodine, Tritium, Particulates with >8-Day half-life)				
Child / Thyroid	6.39E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Total Body	6.35E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Bone	2.65E-02 mrem	7.5 mrem	< 1%	NNW 5990 meters

Population Doses

Total Body Dose	2.11E-01 man-rem
Maximum Organ Dose	9.73E-01 man-rem (Bone)

[1] Includes dose from abnormal gaseous releases.

Table 3-C Doses from Airborne Effluents – 3rd Quarter[1]

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
Gamma Air	8.73E-07 mrad	5 mrad	< 1%	NNW 5500 meters
Beta Air	3.08E-07 mrad	10 mrad	< 1%	NNW 5500 meters
NG Total Body	2.46E-04 mrad	NA	NA	NNW 1650 meters
NG Skin	2.89E-04 mrad	NA	NA	NNW 1650 meters
Organ Doses (Iodine, Tritium, Particulates with >8-Day half-life)				
Child / Thyroid	7.26E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Total Body	7.26E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Bone	2.62E-02 mrem	7.5 mrem	< 1%	NNW 5990 meters

Population Doses

Total Body Dose	2.17E-01 man-rem
Maximum Organ Dose	9.39E-01 man-rem (Bone)

Table 3-D Doses from Airborne Effluents – 4th Quarter[1]

Individual Doses

Pathway	Dose	Quarterly Limit	Percent of Limit	Location
Gamma Air	0.00E+00 mrad	5 mrad	< 1%	NA
Beta Air	0.00E+00 mrad	10 mrad	< 1%	NA
NG Total Body	6.08E-04 mrad	NA	NA	NNW 1650 meters
NG Skin	7.15E-04 mrad	NA	NA	NNW 1650 meters
Organ Doses (Iodine, Tritium, Particulates with >8-Day half-life)				
Child / Thyroid	6.24E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Total Body	6.30E-03 mrem	7.5 mrem	< 1%	NNW 5990 meters
Child / Bone	2.70E-02 mrem	7.5 mrem	< 1%	NNW 5990 meters

Population Doses

Total Body Dose	2.14E-01 man-rem
Maximum Organ Dose	9.98E-01 man-rem (Bone)

[1] Includes dose from abnormal gaseous releases.

Table 4-A Doses from Liquid Effluents – 1st Quarter

Individual Doses

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Teen	Liver	9.82E-05 mrem	5 mrem	< 1%
Child	Thyroid	7.28E-05 mrem	5 mrem	< 1%
Adult	Total Body	8.99E-05 mrem	1.5 mrem	< 1%

Average River Flow Past BFN: 63,831 CFS

Population Doses

Total Body Dose 7.20e-03 man-rem
Maximum Organ Dose 7.30E-03 man-rem (Liver)

Table 4-B Doses from Liquid Effluents – 2nd Quarter

Individual Doses

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Child	Bone	2.96E-05 mrem	5 mrem	< 1%
Child	Thyroid	1.92E-05 mrem	5 mrem	< 1%
Adult	Total Body	2.56E-05 mrem	1.5 mrem	< 1%

Average River Flow Past BFN: 30,555 CFS

Population Doses

Total Body Dose 1.70E-03 man-rem
Maximum Organ Dose 1.80E-03 man-rem (Liver)

Table 4-C Doses from Liquid Effluents – 3rd Quarter

Individual Doses

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Adult	GIT	7.84E-05 mrem	5 mrem	< 1%
Child	Thyroid	6.79E-05 mrem	5 mrem	< 1%
Child	Total Body	7.01E-05 mrem	1.5 mrem	< 1%

Average River Flow Past BFN: 23,291 CFS

Population Doses

Total Body Dose 7.00E-03 man-rem
Maximum Organ Dose 7.10E-03 man-rem (GIT)

Table 4-D Doses from Liquid Effluents – 4th Quarter

Individual Doses

Age Group	Organ	Dose	Quarterly Limit	Percent of Limit
Adult	GIT	3.11E-04 mrem	5 mrem	< 1%
Child	Thyroid	2.21E-04 mrem	5 mrem	< 1%
Adult	Total Body	2.75E-04 mrem	1.5 mrem	< 1%

Average River Flow Past BFN: 36,124 CFS

Population Doses

Total Body Dose 2.30E-02 man-rem
Maximum Organ Dose 2.40E-02 man-rem (GIT)

Table 4-E Total Dose from I-131 Water Ingestion

Individual Doses

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
I-131 (Ci)	< LLD	< LLD	< LLD	< LLD	< LLD
Thyroid (mrem)	NA	NA	NA	NA	NA
Population Thyroid (mrem)	NA	NA	NA	NA	NA

The REMP requirements as specified in Table 3.12-1 from NUREG 1302, "Offsite Dose Calculation Manual Guidance: Standard Radiological Effluent Controls for Boiling Water Reactors," dated April 1991, requires an I-131 specific analysis for drinking water pathway samples if the annual dose from I-131 is greater than 1 mrem. In order to evaluate the need for implementation of this additional analysis, the drinking water pathway dose from I-131 to the maximum organ and age group is calculated. Based on Table 4-E above, the performance of the I-131 specific analysis is not required for BFN REMP drinking water samples in 2024, as I-131 was not identified in any liquid effluent from the plant.

Table 5 Total Dose from Fuel Cycle

Dose	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	
Total Body or any Organ (except thyroid)					
Total body air (submersion)	1.81E-04	7.52E-05	2.46E-04	6.08E-04	
Critical organ dose (airborne)	2.41E-02	2.65E-02	2.62E-02	2.70E-02	
Total body dose (liquid)	8.99E-05	2.56E-05	7.01E-05	2.75E-04	
Maximum organ dose (liquid)	9.82E-05	2.96E-05	7.84E-05	3.11E-04	
Direct Radiation Dose	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Total	2.45E-02	2.66E-02	2.66E-02	2.82E-02	
				Cumulative Total Dose (mrem)	**1.06E-01**
				Annual Dose Limit (mrem)	**25**
				Percent of Limit	**< 1%**
Thyroid					
Total body air (submersion)	1.81E-04	7.52E-05	2.46E-04	6.08E-04	
Thyroid dose (airborne)	6.70E-03	6.39E-03	7.26E-03	6.24E-03	
Total body dose (liquid)	8.99E-05	2.56E-05	7.01E-05	2.75E-04	
Thyroid dose (liquid)	7.28E-05	1.92E-05	6.79E-05	2.21E-04	
Total	7.04E-03	6.51E-03	7.64E-03	7.34E-03	
				Cumulative Total Dose (mrem)	**2.85E-02**
				Annual Dose Limit (mrem)	**75**
				Percent of Limit	**< 1%**

VII. Meteorological Data

Table 6 - Ground Level Releases

2009 - 2018

Joint Frequency Distribution In Percent

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.006	0.054	0.338	0.013	0.000	0.000	0.411
NNE	0.000	0.000	0.001	0.009	0.046	0.233	0.004	0.000	0.000	0.292
NE	0.000	0.000	0.001	0.002	0.013	0.062	0.011	0.000	0.000	0.089
ENE	0.000	0.000	0.002	0.002	0.015	0.002	0.000	0.000	0.000	0.022
E	0.000	0.000	0.007	0.030	0.006	0.001	0.000	0.000	0.000	0.044
ESE	0.000	0.000	0.037	0.185	0.123	0.012	0.000	0.000	0.000	0.357
SE	0.000	0.000	0.333	0.762	0.094	0.009	0.001	0.000	0.000	1.199
SSE	0.000	0.000	0.684	0.463	0.000	0.000	0.000	0.000	0.000	1.148
S	0.000	0.000	0.586	0.366	0.033	0.005	0.000	0.000	0.000	0.990
SSW	0.000	0.000	0.267	0.322	0.023	0.001	0.000	0.000	0.000	0.613
SW	0.000	0.000	0.053	0.145	0.011	0.001	0.000	0.000	0.000	0.209
WSW	0.000	0.000	0.020	0.167	0.046	0.025	0.000	0.000	0.000	0.257
W	0.000	0.000	0.001	0.083	0.133	0.112	0.002	0.000	0.000	0.332
WNW	0.000	0.000	0.004	0.012	0.041	0.195	0.066	0.001	0.000	0.318
NW	0.000	0.000	0.001	0.004	0.026	0.197	0.115	0.011	0.000	0.352
NNW	0.000	0.000	0.001	0.000	0.032	0.212	0.078	0.006	0.000	0.329
SUBTOTAL	0.000	0.000	1.999	2.559	0.694	1.405	0.289	0.018	0.000	6.963

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85593
TOTAL HOURS OF STABILITY CLASS A 5957
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A 5952
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 85479
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND SPEED AND DIRECTION MEASURED AT 10.50 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 5.57

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	CALM	WIND SPEED(MPH) 0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.001	0.026	0.104	0.186	0.002	0.000	0.000	0.319
NNE	0.000	0.000	0.001	0.014	0.116	0.145	0.001	0.000	0.000	0.277
NE	0.000	0.000	0.002	0.015	0.056	0.062	0.004	0.000	0.000	0.139
ENE	0.000	0.000	0.002	0.014	0.014	0.005	0.000	0.000	0.000	0.035
E	0.000	0.000	0.002	0.011	0.008	0.000	0.000	0.000	0.000	0.021
ESE	0.000	0.000	0.021	0.157	0.054	0.006	0.000	0.000	0.000	0.237
SE	0.000	0.000	0.220	0.219	0.019	0.001	0.000	0.000	0.000	0.459
SSE	0.000	0.002	0.252	0.073	0.000	0.000	0.000	0.000	0.000	0.326
S	0.000	0.000	0.230	0.094	0.009	0.000	0.000	0.000	0.000	0.333
SSW	0.000	0.000	0.181	0.110	0.005	0.000	0.000	0.000	0.000	0.296
SW	0.000	0.000	0.084	0.080	0.004	0.001	0.000	0.000	0.000	0.168
WSW	0.000	0.000	0.023	0.187	0.041	0.014	0.000	0.000	0.000	0.266
W	0.000	0.000	0.009	0.157	0.157	0.078	0.005	0.000	0.000	0.406
WNW	0.000	0.000	0.001	0.035	0.099	0.259	0.089	0.005	0.000	0.488
NW	0.000	0.000	0.000	0.016	0.082	0.260	0.092	0.007	0.000	0.457
NNW	0.000	0.000	0.000	0.019	0.062	0.171	0.034	0.000	0.000	0.285
SUBTOTAL	0.000	0.002	1.032	1.225	0.829	1.187	0.227	0.012	0.000	4.515

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85593
TOTAL HOURS OF STABILITY CLASS B 3864
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B 3859
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 85479
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND SPEED AND DIRECTION MEASURED AT 10.50 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 6.22

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.006	0.075	0.149	0.123	0.004	0.000	0.000	0.356
NNE	0.000	0.000	0.008	0.058	0.152	0.094	0.001	0.000	0.000	0.314
NE	0.000	0.000	0.002	0.033	0.055	0.073	0.002	0.000	0.000	0.165
ENE	0.000	0.000	0.004	0.021	0.013	0.005	0.000	0.000	0.000	0.042
E	0.000	0.000	0.013	0.037	0.018	0.002	0.000	0.000	0.000	0.070
ESE	0.000	0.000	0.044	0.124	0.060	0.006	0.000	0.000	0.000	0.234
SE	0.000	0.001	0.275	0.156	0.014	0.004	0.000	0.000	0.000	0.449
SSE	0.000	0.000	0.323	0.062	0.001	0.000	0.000	0.000	0.000	0.386
S	0.000	0.000	0.315	0.076	0.004	0.000	0.000	0.000	0.000	0.394
SSW	0.000	0.000	0.212	0.111	0.009	0.000	0.000	0.000	0.000	0.332
SW	0.000	0.000	0.179	0.083	0.005	0.000	0.000	0.000	0.000	0.267
WSW	0.000	0.000	0.096	0.178	0.035	0.021	0.000	0.000	0.000	0.330
W	0.000	0.000	0.029	0.275	0.173	0.095	0.005	0.000	0.000	0.577
WNW	0.000	0.000	0.006	0.085	0.146	0.311	0.089	0.007	0.000	0.645
NW	0.000	0.000	0.001	0.062	0.113	0.270	0.089	0.011	0.000	0.546
NNW	0.000	0.000	0.005	0.036	0.101	0.194	0.025	0.000	0.000	0.360
SUBTOTAL	0.000	0.001	1.517	1.473	1.047	1.197	0.214	0.018	0.000	5.467

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85593
TOTAL HOURS OF STABILITY CLASS C 4674
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C 4673
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 85479
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND SPEED AND DIRECTION MEASURED AT 10.50 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 5.83

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.012	0.227	0.645	0.755	0.631	0.020	0.000	0.000	2.288
NNE	0.000	0.006	0.264	0.661	0.683	0.468	0.012	0.000	0.000	2.094
NE	0.000	0.008	0.273	0.503	0.443	0.322	0.014	0.000	0.000	1.563
ENE	0.000	0.005	0.257	0.365	0.179	0.055	0.001	0.000	0.000	0.862
E	0.000	0.016	0.407	0.572	0.152	0.034	0.000	0.000	0.000	1.182
ESE	0.000	0.022	0.723	0.969	0.422	0.102	0.000	0.000	0.000	2.238
SE	0.000	0.035	1.171	0.406	0.108	0.040	0.000	0.000	0.000	1.760
SSE	0.000	0.040	1.328	0.208	0.005	0.002	0.000	0.000	0.000	1.583
S	0.000	0.057	1.487	0.345	0.094	0.019	0.000	0.000	0.000	2.002
SSW	0.000	0.033	1.446	0.400	0.076	0.015	0.000	0.000	0.000	1.970
SW	0.000	0.033	0.792	0.157	0.036	0.009	0.000	0.000	0.000	1.027
WSW	0.000	0.013	0.877	0.565	0.153	0.080	0.006	0.000	0.000	1.694
W	0.000	0.012	0.525	1.095	0.708	0.491	0.061	0.002	0.000	2.894
WNW	0.000	0.008	0.183	0.453	0.519	0.902	0.408	0.068	0.001	2.542
NW	0.000	0.001	0.137	0.414	0.584	1.363	0.759	0.075	0.001	3.334
NNW	0.000	0.004	0.208	0.466	0.729	1.201	0.243	0.002	0.000	2.853
SUBTOTAL	0.001	0.304	10.305	8.223	5.646	5.734	1.524	0.147	0.002	31.887

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85593
TOTAL HOURS OF STABILITY CLASS D 27284
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 27257
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 85479
TOTAL HOURS CALM 1

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND SPEED AND DIRECTION MEASURED AT 10.50 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 5.57

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.077	0.822	0.590	0.233	0.097	0.007	0.000	0.000	1.827
NNE	0.000	0.071	0.614	0.749	0.385	0.135	0.001	0.000	0.000	1.955
NE	0.000	0.105	0.461	0.397	0.281	0.147	0.002	0.000	0.000	1.394
ENE	0.000	0.142	0.746	0.383	0.087	0.014	0.002	0.000	0.000	1.374
E	0.001	0.177	1.399	0.875	0.076	0.015	0.000	0.000	0.000	2.543
ESE	0.001	0.199	1.434	1.088	0.256	0.048	0.004	0.000	0.000	3.030
SE	0.001	0.262	1.026	0.477	0.165	0.035	0.000	0.000	0.000	1.966
SSE	0.001	0.294	1.172	0.197	0.011	0.002	0.000	0.000	0.000	1.676
S	0.001	0.255	1.416	0.667	0.359	0.119	0.000	0.000	0.000	2.817
SSW	0.000	0.207	0.852	0.343	0.158	0.071	0.001	0.000	0.000	1.632
SW	0.000	0.154	0.471	0.082	0.014	0.009	0.000	0.000	0.000	0.731
WSW	0.000	0.101	0.673	0.188	0.054	0.013	0.002	0.000	0.000	1.031
W	0.000	0.078	0.662	0.606	0.170	0.075	0.005	0.000	0.000	1.596
WNW	0.000	0.047	0.220	0.153	0.124	0.115	0.025	0.002	0.000	0.686
NW	0.000	0.049	0.228	0.257	0.252	0.328	0.066	0.005	0.000	1.184
NNW	0.000	0.049	0.622	0.687	0.483	0.325	0.020	0.000	0.000	2.187
SUBTOTAL	0.007	2.267	12.820	7.738	3.106	1.549	0.135	0.007	0.000	27.628

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	85593
TOTAL HOURS OF STABILITY CLASS E	23651
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E	23616
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	85479
TOTAL HOURS CALM	6

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND SPEED AND DIRECTION MEASURED AT 10.50 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 3.71

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.002	0.161	1.255	0.519	0.040	0.001	0.000	0.000	0.000	1.979
NNE	0.001	0.150	0.646	0.537	0.109	0.007	0.001	0.000	0.000	1.451
NE	0.001	0.179	0.370	0.158	0.062	0.019	0.001	0.000	0.000	0.789
ENE	0.001	0.219	0.717	0.212	0.016	0.000	0.000	0.000	0.000	1.165
E	0.002	0.266	1.128	0.366	0.000	0.001	0.000	0.000	0.000	1.763
ESE	0.001	0.219	0.738	0.111	0.002	0.001	0.000	0.000	0.000	1.073
SE	0.001	0.278	0.641	0.120	0.019	0.004	0.000	0.000	0.000	1.064
SSE	0.002	0.277	0.785	0.098	0.011	0.000	0.000	0.000	0.000	1.173
S	0.001	0.151	0.586	0.447	0.195	0.060	0.000	0.000	0.000	1.440
SSW	0.000	0.091	0.227	0.082	0.027	0.011	0.000	0.000	0.000	0.438
SW	0.000	0.060	0.111	0.011	0.000	0.002	0.000	0.000	0.000	0.184
WSW	0.000	0.047	0.083	0.006	0.002	0.000	0.000	0.000	0.000	0.138
W	0.000	0.061	0.084	0.015	0.004	0.002	0.000	0.000	0.000	0.166
WNW	0.000	0.062	0.077	0.011	0.005	0.005	0.005	0.001	0.000	0.165
NW	0.000	0.080	0.159	0.046	0.008	0.004	0.001	0.000	0.000	0.297
NNW	0.001	0.116	0.518	0.296	0.071	0.006	0.000	0.000	0.000	1.008
SUBTOTAL	0.015	2.416	8.126	3.035	0.571	0.122	0.008	0.001	0.000	14.294

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85593
TOTAL HOURS OF STABILITY CLASS F 12227
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F 12218
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 85479
TOTAL HOURS CALM 13

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND SPEED AND DIRECTION MEASURED AT 10.50 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 2.78

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.009	0.714	1.008	0.328	0.000	0.000	0.000	0.000	0.000	2.059
NNE	0.006	0.509	0.528	0.145	0.006	0.007	0.001	0.000	0.000	1.201
NE	0.004	0.346	0.450	0.040	0.009	0.012	0.000	0.000	0.000	0.862
ENE	0.004	0.230	0.503	0.073	0.004	0.000	0.000	0.000	0.000	0.814
E	0.002	0.174	0.287	0.035	0.000	0.000	0.000	0.000	0.000	0.499
ESE	0.002	0.158	0.140	0.008	0.000	0.000	0.000	0.000	0.000	0.308
SE	0.002	0.204	0.174	0.021	0.001	0.000	0.000	0.000	0.000	0.402
SSE	0.005	0.290	0.653	0.058	0.002	0.000	0.000	0.000	0.000	1.009
S	0.003	0.102	0.384	0.130	0.037	0.004	0.000	0.000	0.000	0.659
SSW	0.000	0.064	0.023	0.005	0.000	0.000	0.000	0.000	0.000	0.093
SW	0.000	0.026	0.005	0.002	0.002	0.000	0.000	0.000	0.000	0.035
WSW	0.000	0.026	0.005	0.002	0.000	0.000	0.000	0.000	0.000	0.033
W	0.000	0.026	0.011	0.001	0.002	0.000	0.000	0.000	0.000	0.040
WNW	0.000	0.037	0.015	0.001	0.000	0.000	0.000	0.000	0.000	0.054
NW	0.001	0.154	0.060	0.007	0.000	0.000	0.000	0.000	0.000	0.222
NNW	0.005	0.487	0.415	0.048	0.002	0.000	0.000	0.000	0.000	0.957
SUBTOTAL	0.044	3.547	4.661	0.904	0.067	0.022	0.001	0.000	0.000	9.247

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85593
TOTAL HOURS OF STABILITY CLASS G 7936
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G 7904
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 85479
TOTAL HOURS CALM 38

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND SPEED AND DIRECTION MEASURED AT 10.50 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 2.01

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

Table 7 - Split Level Releases

2009 - 2018

Joint Frequency Distribution In Percent

(Ground Level Release Mode and Elevated Release Mode)

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 1 OF 2 GROUND LEVEL RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.000	0.005	0.056	0.005	0.000	0.000	0.067
NNE	0.000	0.000	0.000	0.000	0.004	0.037	0.001	0.000	0.000	0.043
NE	0.000	0.000	0.000	0.000	0.001	0.010	0.002	0.000	0.000	0.013
ENE	0.000	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.002
E	0.000	0.000	0.001	0.002	0.001	0.000	0.000	0.000	0.000	0.004
ESE	0.000	0.000	0.004	0.022	0.022	0.004	0.000	0.000	0.000	0.052
SE	0.000	0.000	0.020	0.069	0.021	0.002	0.001	0.000	0.000	0.114
SSE	0.000	0.000	0.039	0.034	0.000	0.000	0.000	0.000	0.000	0.072
S	0.000	0.000	0.044	0.035	0.009	0.003	0.000	0.000	0.000	0.091
SSW	0.000	0.000	0.022	0.034	0.005	0.000	0.000	0.000	0.000	0.062
SW	0.000	0.000	0.002	0.008	0.002	0.000	0.000	0.000	0.000	0.012
WSW	0.000	0.000	0.001	0.011	0.006	0.004	0.000	0.000	0.000	0.021
W	0.000	0.000	0.000	0.003	0.013	0.017	0.001	0.000	0.000	0.033
WNW	0.000	0.000	0.000	0.000	0.003	0.029	0.016	0.001	0.000	0.049
NW	0.000	0.000	0.000	0.000	0.002	0.030	0.026	0.008	0.000	0.066
NNW	0.000	0.000	0.000	0.000	0.003	0.035	0.023	0.005	0.000	0.066
SUBTOTAL	0.000	0.000	0.134	0.218	0.097	0.229	0.076	0.013	0.000	0.768

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF GROUND LEVEL RELEASE 8848.910
TOTAL HOURS OF STABILITY CLASS A 1295.800
TOTAL HOURS OF GROUND LEVEL STABILITY CLASS A 653.750

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND DIRECTION MEASURED AT 10.50 METER LEVEL
WIND SPEED MEASURED AT 10.50 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 1 OF 2 GROUND LEVEL RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.000	0.010	0.030	0.001	0.000	0.000	0.041
NNE	0.000	0.000	0.000	0.000	0.010	0.021	0.000	0.000	0.000	0.032
NE	0.000	0.000	0.000	0.000	0.005	0.009	0.001	0.000	0.000	0.014
ENE	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.002
E	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.001
ESE	0.000	0.000	0.002	0.014	0.009	0.002	0.000	0.000	0.000	0.027
SE	0.000	0.000	0.006	0.017	0.005	0.001	0.000	0.000	0.000	0.029
SSE	0.000	0.000	0.006	0.004	0.000	0.000	0.000	0.000	0.000	0.011
S	0.000	0.000	0.010	0.008	0.004	0.000	0.000	0.000	0.000	0.022
SSW	0.000	0.000	0.008	0.010	0.002	0.000	0.000	0.000	0.000	0.019
SW	0.000	0.000	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.005
WSW	0.000	0.000	0.000	0.008	0.005	0.003	0.000	0.000	0.000	0.016
W	0.000	0.000	0.000	0.005	0.014	0.012	0.002	0.000	0.000	0.034
WNW	0.000	0.000	0.000	0.000	0.007	0.038	0.022	0.004	0.000	0.072
NW	0.000	0.000	0.000	0.000	0.006	0.037	0.022	0.006	0.000	0.072
NNW	0.000	0.000	0.000	0.000	0.005	0.026	0.010	0.000	0.000	0.042
SUBTOTAL	0.000	0.000	0.036	0.069	0.085	0.180	0.058	0.010	0.000	0.438

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF GROUND LEVEL RELEASE 8848.910
TOTAL HOURS OF STABILITY CLASS B 1672.650
TOTAL HOURS OF GROUND LEVEL STABILITY CLASS B 373.010

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND DIRECTION MEASURED AT 10.50 METER LEVEL
WIND SPEED MEASURED AT 10.50 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 1 OF 2 GROUND LEVEL RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.001	0.014	0.020	0.002	0.000	0.000	0.037
NNE	0.000	0.000	0.000	0.001	0.013	0.014	0.000	0.000	0.000	0.028
NE	0.000	0.000	0.000	0.000	0.004	0.010	0.000	0.000	0.000	0.015
ENE	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.002
E	0.000	0.000	0.000	0.001	0.002	0.000	0.000	0.000	0.000	0.004
ESE	0.000	0.000	0.002	0.012	0.011	0.003	0.000	0.000	0.000	0.027
SE	0.000	0.000	0.006	0.019	0.007	0.002	0.000	0.000	0.000	0.034
SSE	0.000	0.000	0.008	0.006	0.001	0.000	0.000	0.000	0.000	0.015
S	0.000	0.000	0.010	0.005	0.002	0.000	0.000	0.000	0.000	0.018
SSW	0.000	0.000	0.007	0.010	0.002	0.000	0.000	0.000	0.000	0.019
SW	0.000	0.000	0.003	0.003	0.001	0.000	0.000	0.000	0.000	0.007
WSW	0.000	0.000	0.001	0.007	0.005	0.005	0.000	0.000	0.000	0.017
W	0.000	0.000	0.000	0.006	0.016	0.015	0.003	0.000	0.000	0.040
WNW	0.000	0.000	0.000	0.000	0.010	0.043	0.022	0.005	0.000	0.081
NW	0.000	0.000	0.000	0.000	0.008	0.039	0.022	0.008	0.000	0.078
NNW	0.000	0.000	0.000	0.000	0.008	0.031	0.007	0.000	0.000	0.047
SUBTOTAL	0.000	0.000	0.039	0.073	0.104	0.183	0.057	0.013	0.000	0.468

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF GROUND LEVEL RELEASE 8848.910
TOTAL HOURS OF STABILITY CLASS C 3722.810
TOTAL HOURS OF GROUND LEVEL STABILITY CLASS C 398.330

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND DIRECTION MEASURED AT 10.50 METER LEVEL
WIND SPEED MEASURED AT 10.50 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 1 OF 2 GROUND LEVEL RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.001	0.034	0.097	0.118	0.009	0.000	0.000	0.260
NNE	0.000	0.000	0.001	0.030	0.079	0.080	0.003	0.000	0.000	0.193
NE	0.000	0.000	0.000	0.013	0.038	0.045	0.003	0.000	0.000	0.099
ENE	0.000	0.000	0.000	0.012	0.017	0.008	0.000	0.000	0.000	0.037
E	0.000	0.000	0.008	0.041	0.021	0.006	0.000	0.000	0.000	0.076
ESE	0.000	0.000	0.039	0.128	0.089	0.044	0.000	0.000	0.000	0.301
SE	0.000	0.001	0.059	0.071	0.039	0.026	0.000	0.000	0.000	0.196
SSE	0.000	0.000	0.059	0.039	0.004	0.001	0.000	0.000	0.000	0.102
S	0.000	0.000	0.085	0.072	0.042	0.015	0.000	0.000	0.000	0.214
SSW	0.000	0.000	0.080	0.069	0.022	0.013	0.000	0.000	0.000	0.184
SW	0.000	0.000	0.020	0.011	0.007	0.003	0.000	0.000	0.000	0.042
WSW	0.000	0.000	0.010	0.034	0.023	0.017	0.005	0.000	0.000	0.089
W	0.000	0.000	0.004	0.050	0.082	0.086	0.028	0.002	0.000	0.251
WNW	0.000	0.000	0.000	0.008	0.039	0.139	0.131	0.056	0.001	0.374
NW	0.000	0.000	0.000	0.008	0.049	0.219	0.225	0.061	0.001	0.564
NNW	0.000	0.000	0.000	0.017	0.080	0.204	0.083	0.002	0.000	0.385
SUBTOTAL	0.000	0.002	0.367	0.635	0.727	1.025	0.487	0.122	0.002	3.366

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF GROUND LEVEL RELEASE 8848.910
TOTAL HOURS OF STABILITY CLASS D 35591.270
TOTAL HOURS OF GROUND LEVEL STABILITY CLASS D 2863.660

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND DIRECTION MEASURED AT 10.50 METER LEVEL
WIND SPEED MEASURED AT 10.50 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 1 OF 2 GROUND LEVEL RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.033	0.063	0.037	0.020	0.003	0.000	0.000	0.157
NNE	0.000	0.001	0.017	0.080	0.057	0.024	0.001	0.000	0.000	0.179
NE	0.000	0.001	0.009	0.034	0.037	0.024	0.000	0.000	0.000	0.104
ENE	0.000	0.003	0.023	0.034	0.012	0.003	0.001	0.000	0.000	0.076
E	0.000	0.004	0.085	0.103	0.012	0.003	0.000	0.000	0.000	0.207
ESE	0.000	0.005	0.106	0.178	0.053	0.016	0.003	0.000	0.000	0.360
SE	0.000	0.007	0.092	0.119	0.076	0.027	0.000	0.000	0.000	0.321
SSE	0.000	0.008	0.132	0.094	0.010	0.001	0.000	0.000	0.000	0.244
S	0.000	0.006	0.155	0.174	0.168	0.098	0.000	0.000	0.000	0.601
SSW	0.000	0.004	0.079	0.091	0.042	0.044	0.001	0.000	0.000	0.260
SW	0.000	0.002	0.022	0.011	0.003	0.004	0.000	0.000	0.000	0.043
WSW	0.000	0.000	0.020	0.018	0.009	0.004	0.002	0.000	0.000	0.053
W	0.000	0.000	0.015	0.049	0.023	0.015	0.002	0.000	0.000	0.105
WNW	0.000	0.001	0.003	0.010	0.015	0.019	0.010	0.002	0.000	0.060
NW	0.000	0.001	0.003	0.019	0.032	0.057	0.020	0.003	0.000	0.135
NNW	0.000	0.000	0.019	0.069	0.071	0.058	0.006	0.000	0.000	0.224
SUBTOTAL	0.000	0.042	0.813	1.146	0.656	0.417	0.050	0.006	0.000	3.129

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF GROUND LEVEL RELEASE 8848.910
TOTAL HOURS OF STABILITY CLASS E 27241.568
TOTAL HOURS OF GROUND LEVEL STABILITY CLASS E 2662.110

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND DIRECTION MEASURED AT 10.50 METER LEVEL
WIND SPEED MEASURED AT 10.50 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 1 OF 2 GROUND LEVEL RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.003	0.100	0.070	0.007	0.000	0.000	0.000	0.000	0.180
NNE	0.000	0.002	0.036	0.075	0.018	0.001	0.000	0.000	0.000	0.133
NE	0.000	0.005	0.015	0.017	0.008	0.002	0.001	0.000	0.000	0.048
ENE	0.000	0.008	0.032	0.021	0.003	0.000	0.000	0.000	0.000	0.064
E	0.000	0.013	0.075	0.042	0.000	0.000	0.000	0.000	0.000	0.130
ESE	0.000	0.009	0.061	0.018	0.000	0.001	0.000	0.000	0.000	0.090
SE	0.000	0.015	0.062	0.029	0.011	0.003	0.000	0.000	0.000	0.120
SSE	0.000	0.019	0.124	0.051	0.010	0.000	0.000	0.000	0.000	0.205
S	0.000	0.010	0.094	0.121	0.105	0.055	0.000	0.000	0.000	0.385
SSW	0.000	0.004	0.026	0.014	0.007	0.005	0.000	0.000	0.000	0.057
SW	0.000	0.001	0.007	0.002	0.000	0.001	0.000	0.000	0.000	0.010
WSW	0.000	0.001	0.004	0.001	0.000	0.000	0.000	0.000	0.000	0.006
W	0.000	0.001	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.005
WNW	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.006
NW	0.000	0.001	0.004	0.005	0.001	0.001	0.000	0.000	0.000	0.012
NNW	0.000	0.000	0.028	0.039	0.011	0.001	0.000	0.000	0.000	0.080
SUBTOTAL	0.000	0.093	0.672	0.506	0.183	0.071	0.003	0.001	0.000	1.530

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF GROUND LEVEL RELEASE 8848.910
TOTAL HOURS OF STABILITY CLASS F 11784.029
TOTAL HOURS OF GROUND LEVEL STABILITY CLASS F 1301.890

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND DIRECTION MEASURED AT 10.50 METER LEVEL
WIND SPEED MEASURED AT 10.50 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 1 OF 2 GROUND LEVEL RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.004	0.065	0.044	0.000	0.000	0.000	0.000	0.000	0.113
NNE	0.000	0.002	0.022	0.019	0.000	0.002	0.000	0.000	0.000	0.045
NE	0.000	0.005	0.012	0.004	0.001	0.001	0.000	0.000	0.000	0.023
ENE	0.000	0.011	0.021	0.006	0.001	0.000	0.000	0.000	0.000	0.038
E	0.000	0.011	0.017	0.003	0.000	0.000	0.000	0.000	0.000	0.032
ESE	0.000	0.012	0.010	0.001	0.000	0.000	0.000	0.000	0.000	0.023
SE	0.000	0.019	0.021	0.005	0.001	0.000	0.000	0.000	0.000	0.047
SSE	0.000	0.033	0.122	0.033	0.002	0.000	0.000	0.000	0.000	0.191
S	0.000	0.009	0.071	0.044	0.028	0.003	0.000	0.000	0.000	0.155
SSW	0.000	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.005
SW	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002
WSW	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
W	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
WNW	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001
NW	0.000	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.002
NNW	0.000	0.003	0.014	0.005	0.000	0.000	0.000	0.000	0.000	0.022
SUBTOTAL	0.001	0.115	0.378	0.166	0.034	0.006	0.000	0.000	0.000	0.701

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF GROUND LEVEL RELEASE 8848.910
TOTAL HOURS OF STABILITY CLASS G 3774.870
TOTAL HOURS OF GROUND LEVEL STABILITY CLASS G 596.160

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 45.30 METERS
WIND DIRECTION MEASURED AT 10.50 METER LEVEL
WIND SPEED MEASURED AT 10.50 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 2 OF 2 ELEVATED RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.000	0.000	0.002	0.031	0.002	0.000	0.035
NNE	0.000	0.000	0.001	0.000	0.000	0.002	0.013	0.000	0.000	0.017
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	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001
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	0.001	0.007	0.005	0.000	0.000	0.013
SE	0.000	0.000	0.001	0.008	0.031	0.080	0.021	0.004	0.001	0.146
SSE	0.000	0.000	0.000	0.015	0.098	0.089	0.037	0.007	0.000	0.247
S	0.000	0.000	0.000	0.005	0.044	0.062	0.027	0.000	0.000	0.138
SSW	0.000	0.000	0.000	0.001	0.014	0.032	0.006	0.000	0.000	0.052
SW	0.000	0.000	0.000	0.007	0.018	0.021	0.003	0.000	0.000	0.049
WSW	0.000	0.000	0.000	0.002	0.010	0.007	0.000	0.000	0.000	0.020
W	0.000	0.000	0.000	0.002	0.002	0.011	0.005	0.000	0.000	0.021
WNW	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.003	0.000	0.005
NW	0.000	0.000	0.001	0.000	0.000	0.003	0.004	0.001	0.000	0.009
NNW	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.000	0.003
SUBTOTAL	0.000	0.000	0.005	0.041	0.219	0.317	0.154	0.018	0.001	0.755

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF ELEVATED RELEASES 76234.094
TOTAL HOURS OF STABILITY CLASS A 1295.800
TOTAL HOURS OF ELEVATED STABILITY CLASS A 642.050

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND DIRECTION MEASURED AT 45.74 METER LEVEL
WIND SPEED MEASURED AT 45.74 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 2 OF 2 ELEVATED RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.000	0.001	0.084	0.073	0.005	0.000	0.163
NNE	0.000	0.000	0.000	0.000	0.003	0.057	0.026	0.000	0.000	0.087
NE	0.000	0.000	0.000	0.001	0.001	0.008	0.003	0.000	0.000	0.013
ENE	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.002
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	0.001	0.008	0.023	0.010	0.000	0.000	0.042
SE	0.000	0.000	0.004	0.043	0.093	0.116	0.047	0.003	0.000	0.307
SSE	0.000	0.000	0.004	0.051	0.077	0.050	0.019	0.003	0.000	0.204
S	0.000	0.000	0.000	0.034	0.057	0.084	0.036	0.001	0.000	0.212
SSW	0.000	0.000	0.000	0.032	0.030	0.049	0.015	0.000	0.000	0.126
SW	0.000	0.000	0.000	0.027	0.028	0.046	0.005	0.000	0.000	0.106
WSW	0.000	0.000	0.000	0.012	0.019	0.024	0.005	0.000	0.000	0.060
W	0.000	0.000	0.000	0.008	0.015	0.047	0.016	0.000	0.000	0.087
WNW	0.000	0.000	0.000	0.000	0.002	0.012	0.025	0.002	0.000	0.042
NW	0.000	0.000	0.000	0.001	0.000	0.008	0.016	0.002	0.000	0.028
NNW	0.000	0.000	0.000	0.000	0.000	0.013	0.030	0.007	0.000	0.051
SUBTOTAL	0.000	0.000	0.007	0.212	0.335	0.624	0.326	0.024	0.001	1.527

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF ELEVATED RELEASES 76234.094
TOTAL HOURS OF STABILITY CLASS B 1672.650
TOTAL HOURS OF ELEVATED STABILITY CLASS B 1299.640

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND DIRECTION MEASURED AT 45.74 METER LEVEL
WIND SPEED MEASURED AT 45.74 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 2 OF 2 ELEVATED RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.001	0.009	0.024	0.244	0.083	0.005	0.000	0.366
NNE	0.000	0.000	0.000	0.006	0.020	0.208	0.062	0.001	0.000	0.297
NE	0.000	0.000	0.000	0.001	0.008	0.038	0.011	0.000	0.000	0.058
ENE	0.000	0.000	0.002	0.000	0.001	0.002	0.001	0.000	0.000	0.007
E	0.000	0.000	0.000	0.001	0.003	0.002	0.000	0.000	0.000	0.007
ESE	0.000	0.000	0.000	0.002	0.034	0.061	0.023	0.000	0.000	0.120
SE	0.000	0.000	0.007	0.205	0.185	0.187	0.058	0.004	0.000	0.646
SSE	0.000	0.000	0.021	0.128	0.088	0.050	0.030	0.007	0.000	0.324
S	0.000	0.000	0.012	0.105	0.047	0.112	0.041	0.004	0.000	0.321
SSW	0.000	0.000	0.007	0.098	0.057	0.088	0.027	0.002	0.000	0.279
SW	0.000	0.000	0.006	0.079	0.062	0.056	0.012	0.000	0.000	0.215
WSW	0.000	0.000	0.005	0.076	0.079	0.077	0.019	0.002	0.000	0.257
W	0.000	0.000	0.002	0.041	0.097	0.148	0.031	0.003	0.000	0.322
WNW	0.000	0.000	0.000	0.007	0.020	0.109	0.129	0.024	0.000	0.290
NW	0.000	0.000	0.000	0.000	0.007	0.085	0.102	0.015	0.001	0.209
NNW	0.000	0.000	0.000	0.002	0.005	0.073	0.098	0.013	0.000	0.191
SUBTOTAL	0.000	0.000	0.063	0.760	0.737	1.539	0.727	0.079	0.002	3.907

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF ELEVATED RELEASES 76234.094
TOTAL HOURS OF STABILITY CLASS C 3722.810
TOTAL HOURS OF ELEVATED STABILITY CLASS C 3324.480

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND DIRECTION MEASURED AT 45.74 METER LEVEL
WIND SPEED MEASURED AT 45.74 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 2 OF 2 ELEVATED RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.005	0.101	0.273	0.483	1.333	0.725	0.065	0.000	2.985
NNE	0.000	0.002	0.122	0.354	0.536	1.185	0.333	0.016	0.000	2.548
NE	0.000	0.004	0.095	0.254	0.366	0.546	0.067	0.004	0.000	1.335
ENE	0.000	0.000	0.102	0.196	0.218	0.163	0.013	0.000	0.000	0.693
E	0.000	0.009	0.079	0.232	0.224	0.184	0.032	0.002	0.000	0.761
ESE	0.000	0.009	0.112	0.317	0.356	0.634	0.151	0.009	0.000	1.589
SE	0.000	0.008	0.361	0.847	0.553	0.808	0.629	0.188	0.008	3.403
SSE	0.000	0.013	0.556	0.608	0.382	0.730	0.509	0.098	0.004	2.900
S	0.000	0.014	0.435	0.633	0.499	0.915	0.483	0.110	0.005	3.094
SSW	0.000	0.008	0.456	0.682	0.414	0.713	0.350	0.044	0.002	2.670
SW	0.000	0.012	0.454	0.697	0.438	0.375	0.095	0.005	0.000	2.076
WSW	0.000	0.006	0.277	0.739	0.453	0.567	0.146	0.015	0.001	2.204
W	0.000	0.009	0.173	0.671	0.778	1.085	0.318	0.044	0.001	3.080
WNW	0.000	0.007	0.098	0.384	0.495	1.280	0.631	0.186	0.005	3.086
NW	0.000	0.001	0.085	0.294	0.438	1.251	1.045	0.229	0.008	3.351
NNW	0.000	0.005	0.095	0.243	0.379	1.125	0.723	0.121	0.001	2.693
SUBTOTAL	0.001	0.113	3.600	7.425	7.013	12.893	6.249	1.136	0.035	38.465

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF ELEVATED RELEASES 76234.094
TOTAL HOURS OF STABILITY CLASS D 35591.270
TOTAL HOURS OF ELEVATED STABILITY CLASS D 32727.609

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND DIRECTION MEASURED AT 45.74 METER LEVEL
WIND SPEED MEASURED AT 45.74 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 2 OF 2 ELEVATED RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.008	0.099	0.242	0.381	0.874	0.195	0.006	0.000	1.805
NNE	0.000	0.004	0.115	0.227	0.379	0.958	0.192	0.004	0.000	1.879
NE	0.000	0.006	0.121	0.234	0.316	0.574	0.075	0.000	0.000	1.326
ENE	0.000	0.004	0.114	0.235	0.246	0.270	0.013	0.002	0.000	0.882
E	0.000	0.009	0.114	0.236	0.380	0.437	0.013	0.000	0.000	1.189
ESE	0.000	0.011	0.126	0.290	0.516	1.199	0.141	0.008	0.000	2.291
SE	0.000	0.006	0.166	0.389	0.480	1.210	0.666	0.140	0.008	3.066
SSE	0.000	0.014	0.195	0.491	0.532	0.994	0.700	0.212	0.013	3.152
S	0.000	0.016	0.207	0.470	0.504	1.039	0.820	0.321	0.018	3.396
SSW	0.000	0.008	0.212	0.462	0.407	0.665	0.461	0.135	0.005	2.355
SW	0.000	0.005	0.280	0.543	0.327	0.313	0.104	0.011	0.000	1.583
WSW	0.000	0.005	0.173	0.376	0.274	0.200	0.044	0.005	0.000	1.076
W	0.000	0.002	0.140	0.323	0.478	0.399	0.042	0.004	0.000	1.388
WNW	0.000	0.005	0.071	0.195	0.201	0.268	0.056	0.006	0.000	0.801
NW	0.000	0.011	0.080	0.136	0.160	0.450	0.203	0.005	0.000	1.045
NNW	0.000	0.004	0.089	0.197	0.268	0.877	0.216	0.003	0.000	1.654
SUBTOTAL	0.000	0.116	2.300	5.048	5.849	10.728	3.941	0.862	0.044	28.889

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF ELEVATED RELEASES 76234.094
TOTAL HOURS OF STABILITY CLASS E 27241.568
TOTAL HOURS OF ELEVATED STABILITY CLASS E 24579.459

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND DIRECTION MEASURED AT 45.74 METER LEVEL
WIND SPEED MEASURED AT 45.74 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 2 OF 2 ELEVATED RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.002	0.047	0.083	0.146	0.634	0.057	0.000	0.000	0.971
NNE	0.000	0.004	0.053	0.100	0.193	0.689	0.101	0.001	0.000	1.140
NE	0.000	0.006	0.072	0.165	0.230	0.393	0.030	0.000	0.000	0.896
ENE	0.000	0.001	0.072	0.139	0.195	0.238	0.013	0.000	0.000	0.657
E	0.000	0.008	0.073	0.122	0.208	0.300	0.001	0.000	0.000	0.712
ESE	0.000	0.008	0.103	0.196	0.292	0.463	0.004	0.000	0.000	1.068
SE	0.000	0.015	0.142	0.234	0.353	0.561	0.099	0.026	0.001	1.431
SSE	0.000	0.008	0.127	0.179	0.217	0.354	0.340	0.076	0.004	1.305
S	0.000	0.013	0.134	0.160	0.202	0.552	0.360	0.054	0.003	1.478
SSW	0.000	0.008	0.125	0.125	0.155	0.198	0.037	0.002	0.000	0.649
SW	0.000	0.009	0.122	0.133	0.074	0.056	0.002	0.000	0.000	0.396
WSW	0.000	0.016	0.106	0.096	0.033	0.004	0.000	0.000	0.000	0.256
W	0.000	0.007	0.087	0.122	0.056	0.014	0.001	0.000	0.000	0.287
WNW	0.000	0.006	0.055	0.092	0.065	0.013	0.001	0.000	0.000	0.231
NW	0.000	0.004	0.066	0.101	0.098	0.072	0.000	0.000	0.000	0.340
NNW	0.000	0.006	0.045	0.098	0.098	0.235	0.021	0.000	0.000	0.503
SUBTOTAL	0.001	0.122	1.428	2.144	2.616	4.775	1.067	0.159	0.007	12.320

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF ELEVATED RELEASES 76234.094
TOTAL HOURS OF STABILITY CLASS F 11784.029
TOTAL HOURS OF ELEVATED STABILITY CLASS F 10482.140

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND DIRECTION MEASURED AT 45.74 METER LEVEL
WIND SPEED MEASURED AT 45.74 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

SPLIT JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

PART 2 OF 2 ELEVATED RELEASE MODE

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.001	0.024	0.027	0.026	0.136	0.014	0.000	0.000	0.227
NNE	0.000	0.006	0.026	0.038	0.057	0.169	0.035	0.000	0.000	0.330
NE	0.000	0.004	0.051	0.083	0.095	0.135	0.004	0.000	0.000	0.372
ENE	0.000	0.006	0.033	0.067	0.082	0.082	0.002	0.000	0.000	0.271
E	0.000	0.006	0.068	0.073	0.050	0.044	0.002	0.000	0.000	0.243
ESE	0.000	0.009	0.067	0.105	0.098	0.056	0.000	0.000	0.000	0.335
SE	0.000	0.013	0.118	0.197	0.195	0.086	0.001	0.002	0.000	0.611
SSE	0.000	0.020	0.118	0.082	0.037	0.028	0.050	0.014	0.000	0.348
S	0.000	0.011	0.067	0.048	0.024	0.055	0.036	0.001	0.000	0.241
SSW	0.000	0.014	0.071	0.039	0.018	0.021	0.000	0.000	0.000	0.162
SW	0.000	0.012	0.052	0.029	0.008	0.001	0.000	0.000	0.000	0.102
WSW	0.000	0.008	0.051	0.012	0.001	0.000	0.000	0.000	0.000	0.072
W	0.000	0.009	0.062	0.028	0.009	0.000	0.000	0.000	0.000	0.109
WNW	0.000	0.007	0.033	0.034	0.011	0.001	0.000	0.000	0.000	0.087
NW	0.000	0.008	0.036	0.031	0.024	0.013	0.000	0.000	0.000	0.112
NNW	0.000	0.008	0.034	0.034	0.023	0.012	0.002	0.000	0.000	0.113
SUBTOTAL	0.002	0.142	0.909	0.927	0.757	0.838	0.144	0.016	0.000	3.736

TOTAL HOURS OF VALID OBSERVATIONS 85083.000
TOTAL HOURS OF ELEVATED RELEASES 76234.094
TOTAL HOURS OF STABILITY CLASS G 3774.870
TOTAL HOURS OF ELEVATED STABILITY CLASS G 3178.710

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND DIRECTION MEASURED AT 45.74 METER LEVEL
WIND SPEED MEASURED AT 45.74 METER LEVEL
EFFLUENT VELOCITY = 12.60 M/S

DATE PRINTED: 2021/06/29

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

Table 8 - Elevated Releases

2009 - 2018

Joint Frequency Distribution In Percent

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.000	0.000	0.000	0.033	0.008	0.002	0.044
NNE	0.000	0.000	0.002	0.000	0.000	0.000	0.014	0.004	0.000	0.020
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	0.029	0.026	0.004	0.000	0.059
SE	0.000	0.000	0.000	0.009	0.029	0.093	0.029	0.008	0.007	0.177
SSE	0.000	0.000	0.000	0.016	0.074	0.094	0.044	0.021	0.004	0.253
S	0.000	0.000	0.000	0.002	0.020	0.058	0.044	0.002	0.000	0.126
SSW	0.000	0.000	0.000	0.001	0.004	0.033	0.021	0.002	0.000	0.061
SW	0.000	0.000	0.000	0.002	0.002	0.028	0.008	0.006	0.000	0.047
WSW	0.000	0.000	0.000	0.005	0.005	0.012	0.007	0.000	0.000	0.028
W	0.000	0.000	0.000	0.001	0.000	0.008	0.009	0.002	0.000	0.021
WNW	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.005	0.000	0.006
NW	0.000	0.000	0.001	0.000	0.000	0.002	0.004	0.001	0.000	0.008
NNW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.005
SUBTOTAL	0.000	0.000	0.004	0.038	0.134	0.358	0.240	0.066	0.015	0.855

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85621
TOTAL HOURS OF STABILITY CLASS A 730
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS A 726
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 84888
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND SPEED AND DIRECTION MEASURED AT 90.29 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 11.70

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	CALM	WIND SPEED(MPH) 0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.000	0.000	0.001	0.051	0.132	0.020	0.001	0.205
NNE	0.000	0.000	0.000	0.000	0.001	0.037	0.049	0.001	0.000	0.088
NE	0.000	0.000	0.000	0.001	0.000	0.006	0.004	0.002	0.000	0.013
ENE	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.000	0.002
E	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.002
ESE	0.000	0.000	0.000	0.007	0.019	0.064	0.038	0.006	0.000	0.133
SE	0.000	0.000	0.002	0.040	0.090	0.112	0.049	0.012	0.008	0.313
SSE	0.000	0.000	0.001	0.046	0.059	0.042	0.031	0.012	0.002	0.193
S	0.000	0.000	0.000	0.016	0.026	0.082	0.055	0.009	0.000	0.190
SSW	0.000	0.000	0.000	0.024	0.021	0.045	0.033	0.007	0.000	0.130
SW	0.000	0.000	0.000	0.021	0.014	0.040	0.041	0.004	0.001	0.121
WSW	0.000	0.000	0.000	0.011	0.019	0.034	0.021	0.001	0.000	0.086
W	0.000	0.000	0.000	0.004	0.006	0.038	0.046	0.005	0.002	0.100
WNW	0.000	0.000	0.000	0.000	0.002	0.013	0.015	0.015	0.000	0.046
NW	0.000	0.000	0.000	0.001	0.000	0.008	0.015	0.004	0.004	0.032
NNW	0.000	0.000	0.000	0.000	0.000	0.009	0.035	0.018	0.001	0.064
SUBTOTAL	0.000	0.000	0.004	0.171	0.259	0.583	0.567	0.115	0.020	1.719

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85621
TOTAL HOURS OF STABILITY CLASS B 1478
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS B 1459
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 84888
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND SPEED AND DIRECTION MEASURED AT 90.29 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 11.50

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.000	0.001	0.004	0.011	0.206	0.217	0.015	0.001	0.455
NNE	0.000	0.000	0.000	0.004	0.020	0.190	0.099	0.013	0.000	0.325
NE	0.000	0.000	0.000	0.000	0.001	0.025	0.013	0.002	0.000	0.041
ENE	0.000	0.000	0.000	0.000	0.002	0.004	0.002	0.000	0.000	0.008
E	0.000	0.000	0.002	0.001	0.001	0.006	0.000	0.000	0.000	0.011
ESE	0.000	0.000	0.000	0.034	0.097	0.152	0.080	0.015	0.001	0.379
SE	0.000	0.000	0.015	0.137	0.152	0.141	0.064	0.020	0.008	0.537
SSE	0.000	0.000	0.019	0.084	0.053	0.054	0.033	0.022	0.000	0.265
S	0.000	0.000	0.011	0.075	0.040	0.101	0.072	0.014	0.004	0.317
SSW	0.000	0.000	0.006	0.060	0.033	0.091	0.060	0.018	0.000	0.267
SW	0.000	0.000	0.012	0.072	0.031	0.093	0.053	0.011	0.004	0.274
WSW	0.000	0.000	0.006	0.052	0.074	0.118	0.052	0.015	0.002	0.319
W	0.000	0.000	0.002	0.022	0.060	0.163	0.095	0.028	0.004	0.375
WNW	0.000	0.000	0.001	0.001	0.018	0.107	0.143	0.077	0.012	0.358
NW	0.000	0.000	0.000	0.000	0.005	0.065	0.111	0.033	0.009	0.223
NNW	0.000	0.000	0.000	0.001	0.004	0.073	0.124	0.027	0.007	0.236
SUBTOTAL	0.000	0.000	0.075	0.547	0.601	1.588	1.217	0.311	0.052	4.390

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85621
TOTAL HOURS OF STABILITY CLASS C 3752
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS C 3727
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 84888
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND SPEED AND DIRECTION MEASURED AT 90.29 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 11.06

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.004	0.077	0.192	0.386	1.303	1.258	0.298	0.021	3.539
NNE	0.000	0.006	0.086	0.206	0.398	1.224	0.651	0.088	0.005	2.665
NE	0.000	0.007	0.075	0.190	0.229	0.633	0.224	0.024	0.001	1.382
ENE	0.000	0.005	0.075	0.141	0.179	0.290	0.071	0.008	0.001	0.770
E	0.000	0.009	0.092	0.127	0.179	0.293	0.139	0.037	0.002	0.879
ESE	0.000	0.006	0.155	0.377	0.377	0.760	0.543	0.172	0.032	2.422
SE	0.000	0.011	0.279	0.530	0.353	0.623	0.795	0.516	0.223	3.330
SSE	0.000	0.011	0.336	0.392	0.355	0.748	0.660	0.316	0.099	2.916
S	0.000	0.013	0.333	0.365	0.363	0.955	0.776	0.264	0.101	3.171
SSW	0.000	0.016	0.342	0.377	0.331	0.757	0.660	0.193	0.051	2.727
SW	0.000	0.006	0.370	0.395	0.379	0.755	0.373	0.068	0.008	2.355
WSW	0.000	0.009	0.273	0.569	0.419	0.816	0.450	0.115	0.032	2.685
W	0.000	0.007	0.174	0.468	0.607	1.271	0.789	0.279	0.110	3.705
WNW	0.000	0.006	0.105	0.316	0.494	1.421	0.907	0.498	0.191	3.937
NW	0.000	0.005	0.075	0.227	0.333	0.953	1.230	0.620	0.141	3.585
NNW	0.000	0.001	0.079	0.153	0.253	1.088	1.011	0.345	0.058	2.989
SUBTOTAL	0.000	0.121	2.927	5.025	5.636	13.891	10.537	3.842	1.076	43.056

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85621
TOTAL HOURS OF STABILITY CLASS D 36907
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS D 36549
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 84888
TOTAL HOURS CALM 0

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND SPEED AND DIRECTION MEASURED AT 90.29 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 10.97

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.004	0.037	0.088	0.135	0.740	0.838	0.082	0.007	1.931
NNE	0.000	0.005	0.037	0.073	0.150	0.748	0.856	0.137	0.001	2.006
NE	0.000	0.009	0.041	0.110	0.154	0.584	0.507	0.100	0.000	1.506
ENE	0.000	0.004	0.064	0.093	0.152	0.349	0.217	0.020	0.001	0.899
E	0.000	0.007	0.074	0.097	0.118	0.385	0.267	0.020	0.000	0.968
ESE	0.000	0.013	0.066	0.141	0.179	0.787	0.789	0.146	0.037	2.158
SE	0.000	0.004	0.101	0.186	0.311	1.052	1.230	0.502	0.224	3.610
SSE	0.000	0.009	0.101	0.188	0.410	1.222	1.096	0.613	0.273	3.912
S	0.000	0.012	0.105	0.214	0.368	1.134	1.264	0.747	0.370	4.214
SSW	0.000	0.012	0.106	0.153	0.270	0.846	0.896	0.436	0.111	2.830
SW	0.000	0.011	0.097	0.213	0.282	0.790	0.376	0.081	0.015	1.865
WSW	0.000	0.009	0.072	0.188	0.240	0.555	0.203	0.028	0.009	1.305
W	0.000	0.008	0.098	0.205	0.251	0.646	0.290	0.041	0.008	1.547
WNW	0.000	0.009	0.054	0.143	0.192	0.487	0.170	0.033	0.009	1.097
NW	0.000	0.007	0.048	0.105	0.123	0.333	0.416	0.101	0.001	1.134
NNW	0.000	0.004	0.070	0.075	0.111	0.466	0.769	0.090	0.002	1.587
SUBTOTAL	0.001	0.126	1.170	2.274	3.445	11.124	10.183	3.177	1.070	32.569

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85621
TOTAL HOURS OF STABILITY CLASS E 27887
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS E 27647
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 84888
TOTAL HOURS CALM 1

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND SPEED AND DIRECTION MEASURED AT 90.29 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 12.20

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.007	0.033	0.038	0.052	0.201	0.491	0.086	0.000	0.908
NNE	0.000	0.004	0.029	0.041	0.074	0.265	0.617	0.161	0.002	1.195
NE	0.000	0.005	0.037	0.040	0.072	0.291	0.406	0.098	0.000	0.948
ENE	0.000	0.002	0.035	0.064	0.084	0.278	0.240	0.027	0.000	0.730
E	0.000	0.007	0.044	0.072	0.084	0.251	0.119	0.008	0.000	0.584
ESE	0.000	0.011	0.053	0.105	0.111	0.386	0.240	0.009	0.000	0.915
SE	0.000	0.007	0.106	0.160	0.141	0.543	0.310	0.074	0.020	1.362
SSE	0.000	0.009	0.093	0.135	0.193	0.564	0.603	0.280	0.081	1.960
S	0.000	0.006	0.082	0.067	0.101	0.413	0.798	0.217	0.046	1.731
SSW	0.000	0.004	0.060	0.077	0.091	0.249	0.365	0.037	0.000	0.881
SW	0.000	0.011	0.046	0.073	0.067	0.186	0.097	0.002	0.000	0.482
WSW	0.000	0.005	0.064	0.055	0.053	0.126	0.033	0.000	0.000	0.336
W	0.000	0.006	0.047	0.074	0.059	0.074	0.026	0.000	0.000	0.286
WNW	0.000	0.005	0.048	0.075	0.097	0.104	0.008	0.000	0.000	0.337
NW	0.000	0.005	0.048	0.061	0.079	0.131	0.031	0.000	0.000	0.355
NNW	0.000	0.005	0.038	0.042	0.054	0.125	0.180	0.025	0.000	0.469
SUBTOTAL	0.001	0.097	0.863	1.180	1.411	4.188	4.565	1.025	0.150	13.480

TOTAL HOURS OF VALID STABILITY OBSERVATIONS	85621
TOTAL HOURS OF STABILITY CLASS F	11524
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS F	11443
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS	84888
TOTAL HOURS CALM	1

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND SPEED AND DIRECTION MEASURED AT 90.29 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 11.35

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS

Meteorological Data

JOINT PERCENTAGE FREQUENCIES OF WIND SPEED BY WIND DIRECTION FOR

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

BROWNS FERRY NUCLEAR PLANT

JAN 1, 2009 - DEC 31, 2018

WIND DIRECTION	WIND SPEED(MPH) CALM	0.60-1.40	1.41-3.40	3.41-5.40	5.41-7.40	7.41-12.40	12.41-18.40	18.41-24.40	>=24.41	TOTAL
N	0.000	0.006	0.021	0.019	0.013	0.035	0.080	0.018	0.000	0.192
NNE	0.000	0.005	0.021	0.024	0.013	0.061	0.115	0.059	0.000	0.298
NE	0.000	0.006	0.031	0.029	0.021	0.115	0.117	0.026	0.000	0.345
ENE	0.000	0.011	0.034	0.035	0.035	0.126	0.079	0.005	0.000	0.325
E	0.000	0.006	0.041	0.051	0.048	0.097	0.026	0.001	0.000	0.270
ESE	0.000	0.011	0.054	0.094	0.097	0.066	0.016	0.000	0.000	0.338
SE	0.000	0.005	0.070	0.090	0.078	0.098	0.037	0.004	0.000	0.380
SSE	0.000	0.006	0.053	0.075	0.080	0.167	0.072	0.040	0.002	0.496
S	0.000	0.006	0.041	0.060	0.062	0.098	0.085	0.024	0.000	0.376
SSW	0.000	0.009	0.035	0.062	0.032	0.038	0.035	0.008	0.000	0.220
SW	0.000	0.008	0.032	0.048	0.027	0.027	0.005	0.000	0.000	0.147
WSW	0.000	0.006	0.034	0.037	0.019	0.024	0.005	0.000	0.000	0.124
W	0.000	0.004	0.026	0.031	0.024	0.018	0.000	0.000	0.000	0.101
WNW	0.000	0.006	0.022	0.020	0.007	0.021	0.004	0.000	0.000	0.080
NW	0.000	0.004	0.028	0.016	0.025	0.027	0.005	0.000	0.000	0.105
NNW	0.000	0.005	0.026	0.022	0.031	0.028	0.016	0.004	0.000	0.132
SUBTOTAL	0.002	0.101	0.570	0.714	0.611	1.046	0.696	0.187	0.002	3.931

TOTAL HOURS OF VALID STABILITY OBSERVATIONS 85621
TOTAL HOURS OF STABILITY CLASS G 3343
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY CLASS G 3337
TOTAL HOURS OF VALID WIND DIRECTION-WIND SPEED-STABILITY OBSERVATIONS 84888
TOTAL HOURS CALM 2

METEOROLOGICAL FACILITY: BROWNS FERRY NUCLEAR PLANT
STABILITY BASED ON DELTA-T BETWEEN 10.03 AND 89.59 METERS
WIND SPEED AND DIRECTION MEASURED AT 90.29 METER LEVEL

DATE PRINTED: 2021/06/29

MEAN WIND SPEED = 8.48

NOTE: TOTALS AND SUBTOTALS ARE OBTAINED FROM UNROUNDED NUMBERS