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April 27, 2018
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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Braidwood Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. 50-456 and 50-457
ISFSI Docket No. 72-73

Subject: 2017 Radioactive Effluent Release Report

The attached document includes the Radioactive Effluent Release Report for Braidwood Station. This report is being submitted in accordance with 10 CFR 50.36a, "Technical specifications on effluents from nuclear power reactors," and Technical Specification 5.6.3, "Radioactive Effluent Release Report," and includes a summary of radiological liquid and gaseous effluents and solid waste released from the site from January 2017 through December 2017.

If you have any questions regarding this information, please contact Marta Spillie, Regulatory Assurance Manager, at (815) 417-4833.

Respectfully,

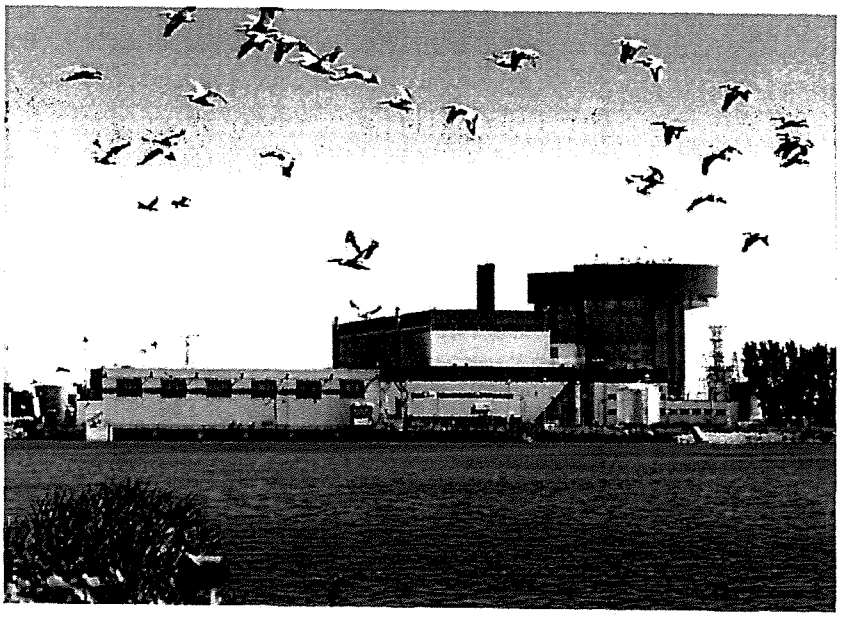
Marri Marchionda-Palmer
Site Vice President
Braidwood Station

cc: US NRC Regional Administrator, Region III
US NRC Senior Resident Inspector - Braidwood Station
NRR Project Manager - Braidwood Station
Illinois Emergency Management Agency - Division of Nuclear Safety

2017

Braidwood Nuclear Power Station

Annual Radioactive Effluent Release Report (ARERR)



UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)
ISFSI (Docket Number 72-73)

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

DOCUMENT INDEX

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Preface

The following sections of the preface are meant to help define key concepts, provide clarity, and give context to the readers of this report.

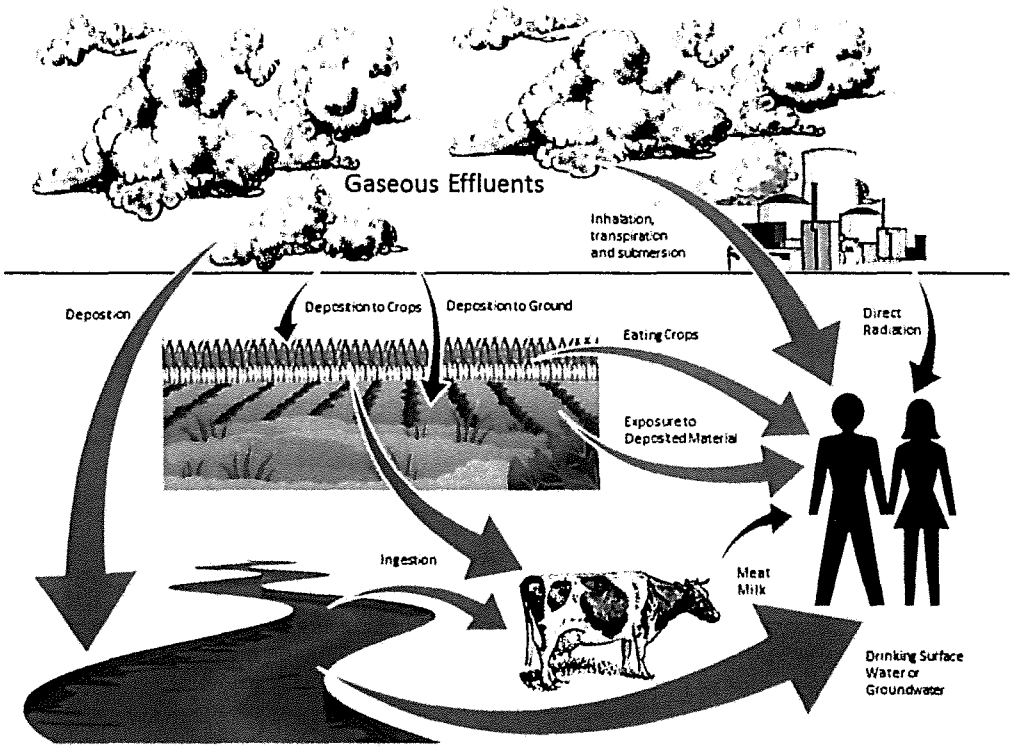
Annual Reports

The Nuclear Regulatory Commission (NRC) is the federal agency who has the role to protect public health and safety through the development of regulations governing nuclear power reactors and ensuring their compliance. As part of the many commitments Nuclear Power Plants have NRC to ensure this safety, they provide two reports annually to specifically address how the station's operation impacts the environment of local communities. The NRC then reviews these reports and makes them available to the public. The names of the reports are the Annual Radioactive Effluent Release Report (ARERR) and the Annual Radiological Environmental Operating Report (AREOR).

The ARERR reports the results of the sampling from the effluent release paths at the station analyzed for radioactivity. An effluent is a liquid or gaseous waste containing plant-related radioactive material emitted at the boundary of the facility.

The AREOR reports the results of the samples obtained in the environment surrounding the station. Environmental samples include air, water, vegetation, and other sample types that are identified as potential pathways radioactivity can reach humans.

Graphic 1. Examples of Gaseous and Liquid Effluent Pathways

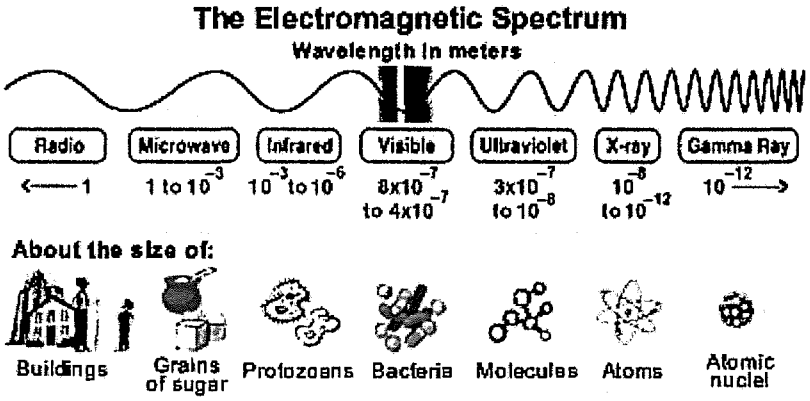


Graphic 1 demonstrates some potential exposure pathways from Braidwood Nuclear Power Station. The ARERR and AREOR together ensure Nuclear Power Plants are operating in a manner that is within established regulatory commitments meant to adequately protect the public.

Understanding Radiation

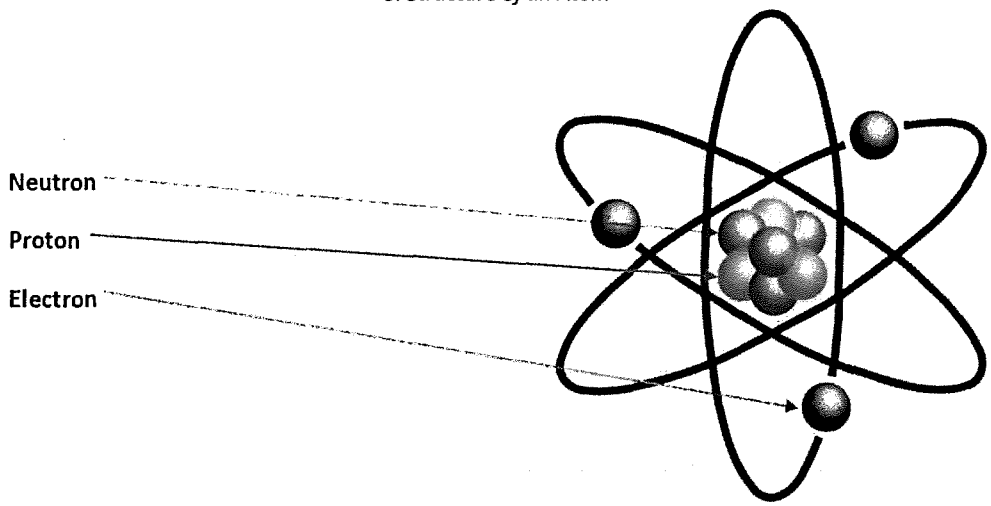
Generally radiation is defined as emitted energy in the form of waves or particles. If radiation has enough energy to displace electrons from an atom it is termed "ionizing", otherwise it is "non-ionizing". Non-Ionizing radiation includes light, heat given off from a stove, radiowaves and microwaves. Ionizing radiation occurs in atoms, particles too small for the eye to see. So, what are atoms and how does radiation come from them?

Graphic 2. Types of Radiation, from NASA Hubblesite



An atom is the smallest part of an element that maintains the characteristics of that element. Atoms are made up of three parts: protons, neutrons, and electrons.

Graphic
3. Structure of an Atom



The number of protons in an atom determines the element. For example, a hydrogen atom will always have one proton while an oxygen atom will always have eight protons. The protons are clustered with the neutrons forming the nucleus at the center of the atom. Orbiting around the nucleus are the relatively small electrons.

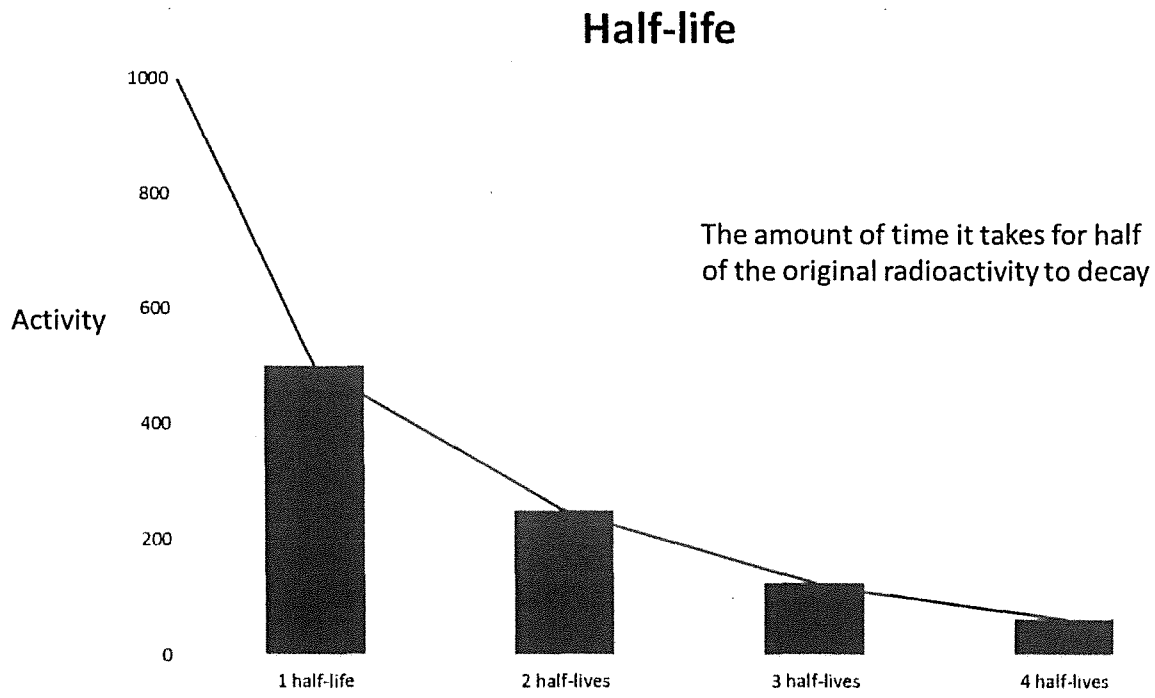
Isotopes are atoms that have the same number of protons but different numbers of neutrons. Different isotopes of an element will all have the same chemical properties and many isotopes are radioactive while other isotopes are not radioactive. A radioactive isotope can emit radiation because it contains excess energy in its nucleus. Radioactive atoms and isotopes are also referred to as radionuclides and radioisotopes.

There are two basic ways that radionuclides are produced at a nuclear power plant. The first is fission, which creates radionucides that are called *fission products.* Fission occurs when a very large atom, such as uranium-235 (U-235) or plutonium-239 (Pu-239), absorbs a neutron into its nucleus making the atom unstable. The unstable atom can then split into smaller atoms. When fission occurs there is a large amount of energy released, in the form of heat. A nuclear power plant uses the heat generated to boil water that spins turbines to produce electricity.

The second way a radionuclide is produced at a nuclear power plant is through a process called activation. Radionuclides produced in this method are termed *activation products.* Pure water that passes over the fissioning atoms is used to cool the reactor and also produce steam to turn the turbines. Although this water is considered to be very pure, there are always some contaminants within the water from material used in the plant's construction and operation. These contaminants are exposed to the fission process and may become activation products. The atoms in the water itself can also become activated and create radionuclides.

Over time, radioactive atoms will reach a stable state and no longer be radioactive. To do this they must release their excess energy. This release of excess energy is called radioactive decay. The time it takes for a radionuclide to become stable is measured in units called half-lives. A half-life is the amount of time it takes for half of the original radioactivity to decay. Each radionuclide has a specific half-life. Some half-lives can be very long and measured in years while others may be very short and measured in seconds.

Graphic 4. Radioactive Decay Half-Life



In the annual reports you will see both man made and naturally ocurring radionuclides listed, for example potassium-40 (K-40, natural) and cobalt-60 (Co-60, man-made). We are mostly concerned about man-made radionuclides because they can be produced as by-products when generating electricity at a nuclear power plant. It is important to note that there are also other ways man-made radionuclides are produced, such as detonating nuclear weapons. Weapons testing has deposited some of the same man-made radionuclides into the environment as those generated by nuclear power, and some are still present today because of long half-lives.

Measuring Radiation

There are four different but interrelated units for measuring radioactivity, exposure, absorbed dose, and dose equivalent. Together, they are used to scientifically report the amount of radiation and its effects on humans.

- Radioactivity refers to the amount of ionizing radiation released by a material. The units of measure for radioactivity used within the AREOR and ARERR are the Curie (Ci). Small fractions of the Ci often have a prefix, such as the microcurie (μCi), which means 1/1,000,000 of a Curie.

- Exposure describes the amount of radiation traveling through the air. The units of measure for exposure used within the AREOR and ARERR are the Roentgen (R). Traditionally direct radiation monitors placed around the site are measured milliRoentgen (mR), 1/1,000 of one R.

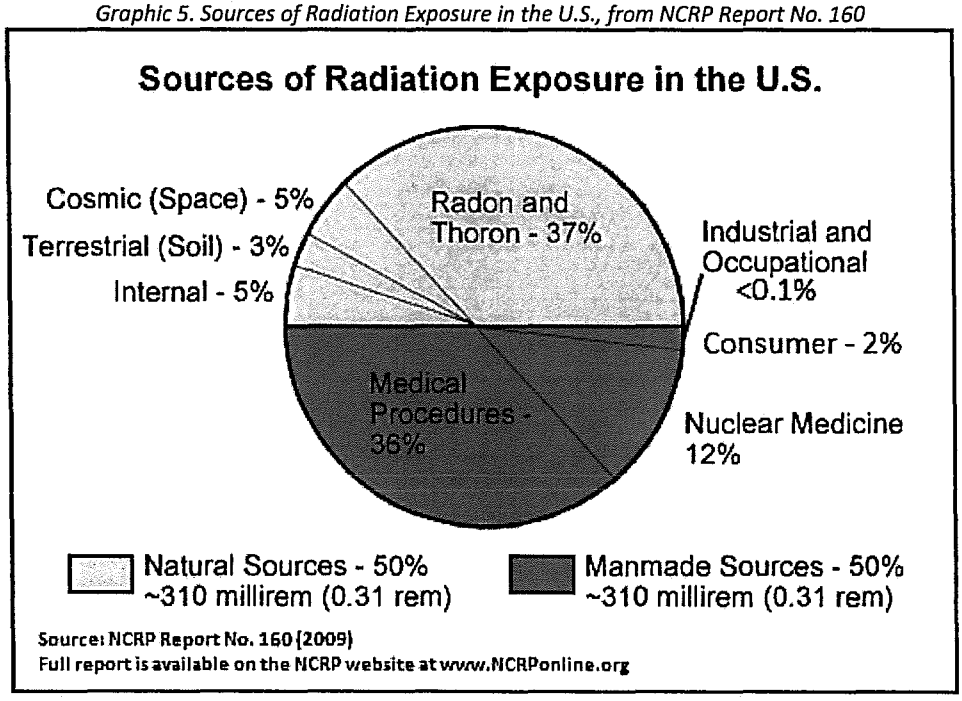
- Absorbed dose describes the amount of radiation absorbed by an object or person. The units of measure for absorbed dose used within the AREOR and ARERR are the rad. Noble gas air doses are reported by the site are measured in millirad (mrad), 1/1,000 of one rad.

- Dose equivalent (or effective dose) combines the amount of radiation absorbed and the health effects of that type of radiation. The units used within the AREOR and ARERR are the Roentgen equivalent man (rem). Regulations require doses to the whole body, specific organ, and direct radiation to be reported in millirem (mrem), 1/1,000 of one rem.

Sources of Radiation

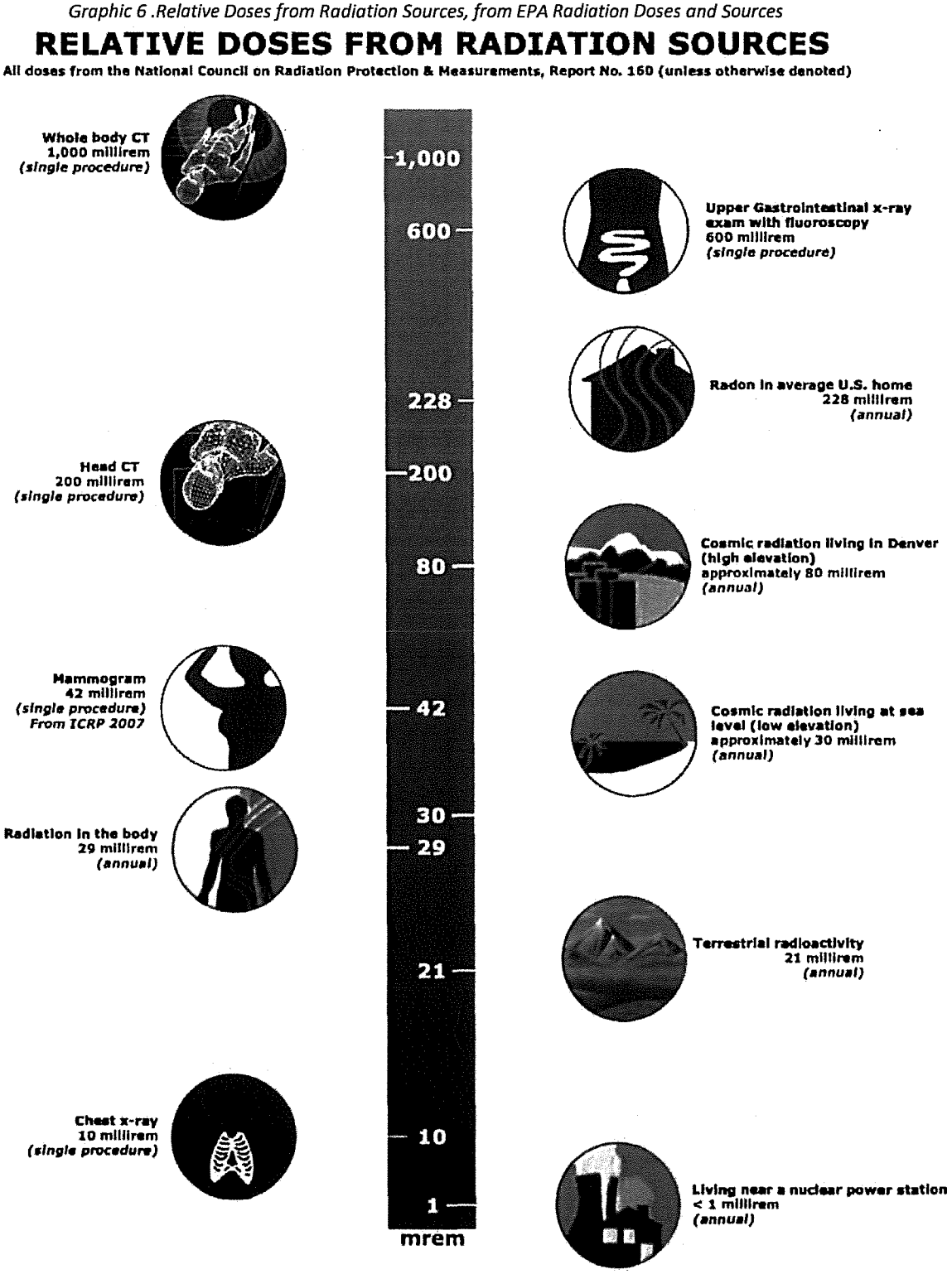
People are exposed to radiation every day of their lives and have been since the dawn of mankind. Some of this radiation is naturally occurring while some is man-made. There are many factors that will determine the amount of radiation individuals will be exposed to such as where they live, medical treatments, etc. The average person in the United States is exposed to approximately 620 mrem each year. Half of this exposure, 310 mrem, comes from natural sources and the other half, 310 mrem, from man-made sources. Graphic 5 shows what the typical sources of radiation are for an individual over a calendar year:

Graphic 5. Sources of Radiation Exposure in the U.S., from NCRP Report No. 160



The radiation from a nuclear power plant is included in the chart as part of the "Industrial and Occupational" fraction, <0.1%. The largest natural source of radiation is from radon, because radon gas travels in the air we breathe. Perhaps you know someone who had a CT scan at a hospital to check his or her bones, brain, or heart. CT scans are included in the chart as "Medical Procedures" which make up the next largest fraction. Graphic 6 on the following page shows some of the common doses humans receive from radiation every year.

Graphic 6 .Relative Doses from Radiation Sources, from EPA Radiation Doses and Sources

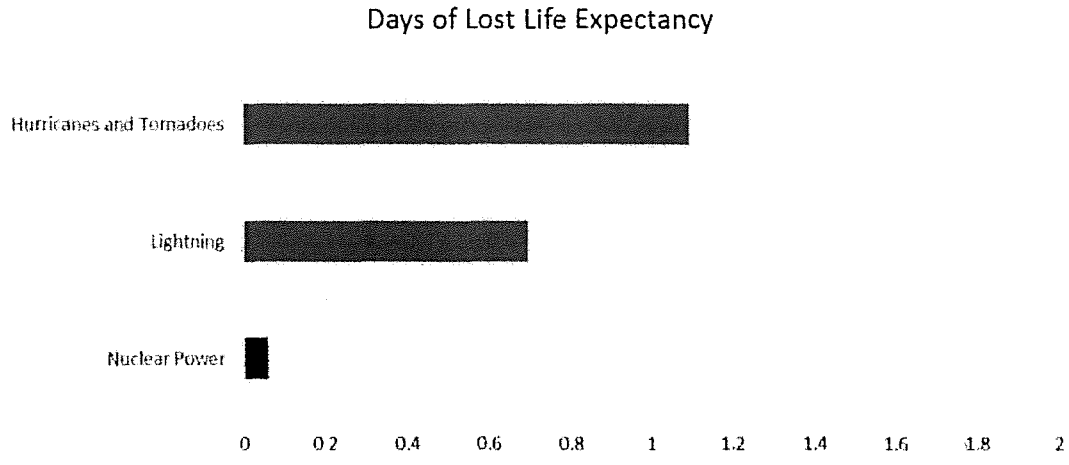


Radiation Risk

Current science suggests there is some risk from any exposure to radiation. However, it is very hard to tell whether cancers or deaths can be attributed to very low doses of radiation or by something else. U.S. radiation protection standards are based on the premise that any radiation exposure carries some risk.

The following graph is an example of one study that tries to relate risk from many different factors. This graph represents risk as "Days of Lost Life Expectancy". All the categories are averaged over the entire population except Male Smokers, Female Smokers, and individuals that are overweight. Those risks are only for people that fall into those categories. The category for Nuclear Power is a government estimate based on all radioactivity releases from nuclear power, including accidents and wastes.

Graphic 7. Days of Lost Life Expectancy, Adapted from the Journal of American Physicians and Surgeons Volume 8 Number 2 Summer 2003



BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Introduction

This report quantifies the radioactive gaseous, liquid, solid radioactive waste (radwaste) releases, and summarizes the local meteorological data for the period from January 01, 2017 through December 31, 2017. This report has been prepared utilizing the methodology and parameters specified in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents found in Braidwood's Offsite Dose Calculation Manual (ODCM). It has been formatted consistent with Exelon Procedure CY-AA-170-2000 "ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT" and exceeds the requirements specified in Regulatory Guide 1.21 Revision 1, "MEASURING, EVALUATING, AND REPORTING RADIOACTIVITY IN SOLID WASTES AND RELEASES OF RADIOACTIVE MATERIALS IN LIQUID AND GASEOUS EFFLUENTS FROM LIGHT-WATER-COOLED NUCLEAR POWER PLANTS."

The quantity of radioactive material released from Braidwood Nuclear Power Plant was determined from in-house and vendor laboratory analysis of continuous inline sampling media and batch sample media from all ODCM specified effluent pathways. These pathways include continuous releases from the Unit 1 and 2 Station Vent Stacks, Exelon Pond Remediation, Turbine Building Remediation, Vacuum Breaker #1 Remediation, Condensate Polisher Sump, Waste Water Treatment, and Circulating Water Blowdown. The ODCM specified effluent pathways also include batch releases from the Unit 1 and Unit 2 Primary Containments, Waste Gas Decay Tanks, and Liquid Radwaste Batch Release Tanks. The quantification of radioactive material released from Braidwood Nuclear Power Plant also includes non-routine planned discharges from two remediation wells, installed in 2017 at the River Screen House, that are not currently listed as ODCM effluent pathways.

The volume and quantity of radioactive waste shipped offsite from Braidwood Nuclear Power Plant for processing and disposal were determined from data maintained in the radwaste shipping database. Radwaste processed for shipment was in accordance with Exelon procedure RW-AA-100, "PROCESS CONTROL PROGRAM FOR RADIOACTIVE WASTES" and consistent with the UFSAR.

Meteorological data was obtained from the 320-foot meteorological tower located on the Braidwood Station premises.

A. Supplemental Information

1. Regulatory Limits

a. Fission and Activation Gases:

Dose Rate
1) Less than 500 mrem/year to the whole body (instantaneous limit, per site).
2) Less than 3,000 mrem/year to the skin (instantaneous limit, per site).

Dose Gamma Radiation
1) Less than or equal to 5 mrad/quarter (per unit).
2) Less than or equal to 10 mrad/year (per unit).

Dose Beta Radiation
1) Less than or equal to 10 mrad/quarter (per unit).
2) Less than or equal to 20 mrad/year (per unit).

b. Iodine: (summed with particulate and tritium, see below)

c. Particulates with half-lives > 8 days:

Dose Rate
1) Less than 1,500 mrem/year to any organ (instantaneous limit, per site).

Dose
1) Less than or equal to 7.5 mrem/quarter to any organ (per unit).
2) Less than or equal to 15 mrem/year to any organ (per unit).

d. Liquid Effluents

Dose
1) Less than or equal to 1.5 mrem to the whole body during any calendar quarter (per unit).
2) Less than or equal to 5 mrem to any organ during any calendar quarter (per unit).
3) Less than or equal to 3 mrem to the whole body during any calendar year (per unit).
4) Less than or equal to 10 mrem to any organ during any calendar year (per unit).

2. Effluent Concentration Limits

a. Fission and Activation Gases: 10CFR20 Appendix B Table 2
b. Iodine: 10CFR20 Appendix B Table 2
c. Particulates: 10CFR20 Appendix B Table 2
d. Liquid Effluents: 10 X 10CFR20 Appendix B Table 2

3. Average Energy

The ODCM limits the dose equivalent rates due to the release of noble gases to less than or equal to 500 mrem/yr to the total body, and less than or equal to 3,000 mrem/yr to the skin. Therefore, the average beta and gamma energies ($\bar{E}$) for gaseous effluents as described in Regulatory Guide 1.21 are not applicable.

4. Measurements and Approximations of Total Radioactivity

a. Fission and activation gases:

Before being discharged, containment batch releases are analyzed for noble gas via gamma spectroscopy. Gaseous decay tanks are analyzed for noble gases before being discharged via gamma spectroscopy. Released activity is normally calculated using volume of release, which is determined by purge flow rate times the duration of the discharge.

The Auxiliary Building ventilation exhaust system is continually monitored for radioactive iodines (radioiodines) and particulates. These samples are pulled every seven days and analyzed via gamma spectroscopy.

Noble gas samples are pulled and analyzed weekly by gamma spectroscopy. The average flow at the release points and nuclide specific activity concentrations are used to calculate the activity released.

Volumes and activities of effluents discharged from systems that are common to both units are divided between both units.

b. Iodines:

Radioiodines in the Auxiliary Building ventilation exhaust system are continually being collected via activated charcoal cartridges in the diverted sample process flow. The iodine cartridges are pulled weekly and analyzed via gamma spectroscopy. Radioiodine concentrations greater than the lower limit of detection (LLD) are multiplied by the volume of air discharged during the sampling timeframe.

Radioiodines are analyzed in liquid effluent streams through performance of batch release tank grab samples and weekly liquid effluent composite samples. The analyses are performed via gamma spectroscopy of the liquid samples.

Volumes and activities of effluents discharged from systems that are common to both units are divided between both units. Effluents that are unit specific are assigned to the appropriate unit.

c. Particulates, half-lives > 8 days:

Particulates in the Auxiliary Building ventilation exhaust system are continually being collected via filter media in the diverted sample process flow. Particulate filter media is pulled weekly and analyzed via gamma spectroscopy. Particulate concentrations greater than LLD are multiplied by the volume of air discharged during the sampling timeframe. A composite sample is created from 3 month's particulate sample media for Sr-89/90, Fe-55, Ni 63, and gross alpha analysis by an offsite vendor. The vendor supplied data is utilized in conjunction with the volume of air released through the Auxiliary Building ventilation to quantify Sr-89/90, Fe-55, Ni-63, and gross alpha releases.

Volumes and activities of effluents discharged from systems that are common to both units are divided between both units. Effluents that are unit specific are assigned to the appropriate unit.

d. Tritium:

Before being discharged, containment batch releases are analyzed for tritium via a liquid scintillation counter (LSC). Tritium is sampled using a flow-through bubbler system. Released activity is calculated using volume of release, which is determined by purge flow rate multiplied by the duration of the discharge.

The Auxiliary Building ventilation exhaust system is monitored for tritium using a flow-through bubbler system. Tritium is sampled every seven days and analyzed by LSC.

The secondary sides of both units contain tritium. Minimal amounts of tritium are continually released to the atmosphere from secondary components through packing leaks, tank vents, the main condenser, etc. Bounding calculations have been performed to show that large leaks (1000 gallons/day (gpd)) for extended periods (1 month) at normal secondary tritium concentrations would provide an insignificant increase (1.00E-5 mrem) in offsite dose.

e. Gross alpha

Gross alpha is analyzed in both the gaseous and liquid effluent pathways. Weekly gaseous particulate media is composited for offsite vendor analysis. Gross alpha activity greater than vendor LLD values are assigned to the applicable timeframe and gaseous volume released. Liquid effluent gross alpha analysis is performed through compositing monthly discharges and gas flow proportional counting.

f. Carbon-14

Carbon-14 (C-14) is assessed in continuous gaseous effluents using Electric Power Research Institute's (EPRI) industry accepted production mechanism and production rate study 1021106. C-14 production is a function of each unit's full power operation and gaseous volume released. C-14 is not evaluated through laboratory sample analysis.

g. Liquid effluents:

Liquid effluents are categorized as either batch release or continuous release. All liquid releases are analyzed for principal gamma emitters, radioiodines, dissolved and entrained gases, gross alpha, and tritium onsite via gamma spectroscopy, gas flow proportional counting, or liquid scintillation, as appropriate. An offsite laboratory analyzes liquid composites for Sr-89/90, Fe-55 and Ni-63. Vendor results are applied to the applicable volume of liquids discharged during the timeframe. Volumes and activities of effluents discharged from systems or locations are divided between both units.

h. Estimated Total Error Present

Procedure CY-AA-170-2100, Estimated Errors of Effluent Measurements provides the methodology to obtain an overall estimate of the error associated with radioactive effluents. Estimated total error is calculated periodically and communicated as part of Appendix A Effluent and Waste Disposal Summary.

i. Lower Limit of Detection (LLD)

Samples are analyzed such that the Offsite Dose Calculation Manual (ODCM) LLD requirements are met. When a nuclide is not detected during the quarter then <LLD is reported. The ODCM required lower limit of detection for airborne and liquid releases are as follows:

Table 4.i ODCM Effluent LLD Values

Airborne:	LLD
Gross Alpha, Sr-89, Sr-90	1.00E-11 µCi/cc
H-3	1.00E-07 µCi/cc
I-131 in Charcoal Samples	1.00E-12 µCi/cc
I-133 in Charcoal Samples	1.00E-10 µCi/cc
Principal Gamma Emitters (Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, I-131, Ce-141, Ce-144) in Grab Samples	1.00E-04 µCi/cc
Principal Gamma Emitters (Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, I-131, Ce-141, Ce-144) in Particulate Samples	1.00E-11 µCi/cc
Noble Gas (Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, Xe-138), Gross Beta or Gamma	1.00E-06 µCi/cc

Table 4.i ODCM Effluent LLD Values (continued)

Liquid:	LLD
Principal Gamma Emitters except Ce-144 (Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141)	5.00E-07 uCi/ml
Ce-144	5.00E-06 uCi/ml
I-131	1.00E-06 uCi/ml
Entrained Gases (Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, Xe-138)	1.00E-05 uCi/ml
H-3	1.00E-05 uCi/ml
Gross Alpha	1.00E-07 uCi/ml
Sr-89, Sr-90	5.00E-08 uCi/ml
Fe-55	1.00E-06 uCi/ml

This list does not mean that only these nuclides are considered, but this list is used to ensure acceptable detection standards. Braidwood tests and maintains LLD records in accordance with procedure CY-AA-130-201 "Radiochemistry Quality Control."

5. Batch Releases

a. Liquid Batch Releases	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr.	Total
1. Total Number of Batch Releases	19	26	26	28	99
2. Total Time Period for Batch Releases (minutes)	3.06E+04	4.11E+04	3.60E+04	6.08E+04	1.68E+05
3. Maximum Time Period for a Batch Release (minutes)	3.54E+03	3.32E+03	5.77E+03	6.02E+03	6.02E+03
4. Average Time Period for a Batch Release (minutes)	1.61E+03	1.58E+03	1.38E+03	2.17E+03	1.70E+03
5. Minimum Time Period for a Batch Release (minutes)	1.89E+02	2.11E+02	9.00E+01	7.02E+02	9.00E+01
6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream (liters/min) [1]	1.13E+07	1.75E+07	5.72E+06	9.06E+06	1.09E+07

b. Gaseous Batch Releases	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr.	Total
1. Total Number of Batch Releases	52	62	49	70	233
2. Total Time Period for Batch Releases (minutes)	8.41E+03	3.78E+04	1.38E+04	3.74E+04	9.74E+04
3. Maximum Time Period for a Batch Release (minutes)	1.51E+03	1.28E+04	2.30E+03	2.19E+03	1.28E+04
4. Average Time Period for a Batch Release (minutes)	1.62E+02	6.10E+02	2.82E+02	5.34E+02	4.18E+02
5. Minimum Time Period for a Batch Release (minutes)	1.90E+01	2.20E+01	2.30E+01	2.20E+01	1.90E+01

[1] Kankakee River Flows obtained from US Geological Survey website from daily average flow data.

6. Abnormal Releases

   a. Leaks and Spills

      There was one abnormal liquid release that occurred in 2017. It is described below:

      On June 11th, 2017 it was it was identified that water being removed as part of maintenance activities in the Circulating Water Blowdown (CWBD) House was discharged to the ground approximately 50 feet from the discharge canal. Once discovered, the discharge was terminated and the area was inspected. The investigation determined that approximately 35,000 gallons of water was released between May 28, 2017 and June 11, 2017, with variable concentrations with a maximum tritium concentration of 200,209 pCi/L. The water released did not migrate off station property.

      Corrective actions taken in response to this event included the placement of multiple monitoring wells at various depths in the vicinity of the CWBD house to determine soil contamination levels, as well as the establishment of soil remediation efforts to remove the tritium contamination from the area. The discharges of remediation wells are treated as non-routine planned discharges. They are sampled regularly and permitted in the same manner as other ODCM pathways. The corresponding activity values and doses are included as part of liquid effluent releases in this report.

7. Radioactive Waste Treatment System Changes

   There were no changes to the gaseous radioactive waste treatment system, the ventilation exhaust treatment system, or the liquid radioactive waste treatment system in 2017.

8. Changes to the Annual Land Use Census

   The 2017 Land Use Survey was performed on August 16, 2017. The only changes identified between the 2017 survey and the previous year's survey were related to livestock. Three sectors (ENE, S, SW) that previously had beef cattle, had no cattle in the 2017 survey. This change cannot affect an increase in calculated dose from station effluents via the food ingestion pathway and no action was required. No change was required to the Radiological Environmental Monitoring Program (REMP).

9. Radioactive Effluent Monitoring Instrumentation Out of Service for More than 30 Days

   There were no radioactive effluent monitoring instruments out of service for more than 30 days in 2017.

10. Revisions to the ODCM

    There were no changes to the Braidwood Station ODCM in 2017.

11. Independent Spent Fuel Storage Installation (ISFSI)

    An Independent Spent Fuel Storage Installation (ISFSI) was placed in service at Braidwood Station in 2011. The ISFSI is a closed system and the only exposure would be due to direct radiation, which is measured by Optically Stimulated Luminescent Dosimetry (OSLD). In 2017 the dose to the nearest resident from the ISFSI was estimated to be 3.40E-01 mrem. This estimate was determined using environmental dosimeters from the Radiological Environmental Monitoring Program.

12. ERRATA

There were no errors to previous reports identified in 2017.

13. Sampling and Instrumentation Issues

a. On June 26, 2017, the flow totalizer instrumentation used to quantify the discharge volume from site remediation well RW-11 was found not functioning. The flow totalizer was replaced later the same day.

b. On July 7, 2017, compensatory sampling measures were in place due to inoperable composite samplers at remediation wells RW-11 and RW-12. The compensatory sampling measures include manual grab samples three times per day. Due to infrequent automatic pumping of the remediation wells, only two grab samples were obtained from RW-11 and RW-12 discharge on this date.

c. On July 19, 2017, the automatic composite sampler for remediation well RW-12 was found with a "full bottle error" preventing further continuous composite sampling. A grab sample was obtained at the time of discovery. An issue with the sampler purge was identified and corrected, allowing the sampler to resume proper sampling sequences. The full bottle occurred on 7/17/17 at 2300 and the condition was corrected on 7/19/17 at 1400.

d. On September 25, 2017, the Station's Circulating Water Blowdown (CWBD) composite sampler was found de-energized due to a faulty electrical power outlet. The sampler was re-energized from a functional power outlet and automatic composite sampling was restored 9/25/27 at 1133. Investigation found that the first missed sample due to the power outage occurred 9/23/17 at 0644. During the compositors' power outage from 9/23/17 at 0644 to 9/25/17 at 1133, compensatory grab samples were not performed.

e. On October 5, 2017, the Station's Condensate Polisher (CP) Sump composite sampler was found not operating. The exact cause of the malfunction was not able to be determined, but was believed to be a power supply related trip when the 0PR41J alarm was received by operations for lost flow on 10/4/17. The composite sampler was returned to service and was restored to proper function shortly after the discovery. The compositor had been checked and was operating correctly during routine checks on 10/2/17 at 0820. The maximum approximate time frame for the composite sampler not functioning was 10/2/17 0820 to 10/5/17 at 0805, although it is believed timeframe was shorter and the malfunction occurred 10/4/17 (time undetermined). During that time, compensatory grab samples were not performed.

f. On November 21, 2017 it was identified that the weekly analysis of the Diesel Driven Auxiliary Feed Pumps (DDAF) air intake had not been sampled and analyzed for noble gas as expected on 11/16/17. The tritium grab sample, normally taken at the time of the noble gas grab sample had been completed and analyzed. The normal samples for particulate and Iodine had also been completed for this time frame. The results for tritium, particulate, and iodine were less than the LLD. The previous week's sample results were reviewed for all the DDAF air intake analyses and all had been <LLD. No plant conditions existed that would indicate noble gas may have been present in the DDAF air intake.

g. On December 18, 2017, during routine activities, it was noted that the composite sampler for CWBD had a very small sample volume. CWBD flow had been shut down for six days and the sample volume contained within the compositor was correct for the short time that CWBD flow had been available to sample. A delay in the analysis caused the required LLD for dissolved and entrained gasses not to be met. All other isotopic analyses were properly carried out on the available sample and the results showed no radionuclides were present.

h. On December 29, 2017, the composite samplers for remediation wells RW-11 and RW-12 were found to be not functioning due to frozen conditions in the sampler tubing and sample receptacles. The exact duration of the frozen conditions and lack of sampling for the remediation wells discharge could not be determined, but the samplers were functioning when checked on 12/28/17. Remediation was secured and was not resumed before the end of the year.

B. Gaseous Effluents

Gaseous radioactive releases for 2017 captured in Tables 1A, 1B-1, and 1B-2 in Appendix A for Units 1 and 2 combined. Radioactive noble gases released for the timeframe totaled 3.69E-01 Curies. Releases of all radioiodines, halogens, and particulates totaled 4.31E-04 Curies. Gaseous tritium releases totaled 2.82E+02 Curies. Gaseous carbon-14 was calculated to total 8.39E+00 Curies. No gross alpha was detected in gaseous effluents.

C. Liquid Effluents

Liquid radioactive releases for 2017 are captured in Tables 2A, 2B-1, and 2B-2 in Appendix A for Units 1 and 2 combined. Ninety-nine (99) liquid batch releases occurred during the reporting period. These discharges contained 2.42E+03 Curies of tritium and 9.22E-02 Curies of fission and activation products.

D. Radiological Impact on Man

1. Dose to Members of the Public at or Beyond Site Boundary

Per ODCM Chapter 6.1 the Annual Radioactive Effluent Release Report shall include an assessment of radiation doses to the hypothetically highest exposed MEMBER OF THE PUBLIC from reactor releases, ISFSI and other nearby uranium fuel cycle sources (including doses from primary effluent pathways and direct radiation) for the previous calendar year. The ODCM does not require population doses to be calculated. For purposes of calculation, the following assumptions were made per the ODCM:

- Long term annual average meteorology X/Q and D/Q and actual gaseous effluent releases were used.
- Gamma air dose, Beta air dose, Total Body and Skin doses were attributed to noble gas releases.
- Critical organ and age group dose attributed to iodine, particulate, carbon-14 and tritium releases.
- A 0.7 shielding factor was assumed to account for shielding due to occupancy of structures
- Doses, Design Objective Limit, and Dose Limit comparisons reported combined for the site (Units 1 and 2 together).
- Dosimetry measurements obtained from the highest station values in the Radiological Environmental Monitoring Program were used to calculate dose to the nearest residence from the Independent Spent Fuel Storage Installation (ISFSI). The dose measured at the station was extrapolated to the residence location.
- The highest doses from the critical organ and critical age group for each release pathway was summed and added to the net dosimetry measurement from nearest residence to the ISFSI for 40CFR190 and 10CFR72.104 dose compliance.
- Evaluation of 40CFR190 and 10CFR72.104 dose is used to demonstrate compliance to 10CFR 20 and satisfy station RETS and Technical Specifications.

a. Gaseous Releases

The critical age-organ was the child-bone. Calculated total body dose was 3.94E-01 mrem and organ dose was 1.76E+00 mrem.

b. Liquid Releases

The critical age-organ was the child-GI-LLI. Calculated total body dose was 7.78E-02 mrem and organ dose was 7.88E-02 mrem.

c. 40CFR190 and 10CFR72.104 Compliance

The Braidwood ODCM defines the total dose for the uranium fuel cycle as the sum of doses due to radioactivity in airborne and liquid effluents and the doses due to direct radiation from contained sources at the nuclear power station (ODCM A.4.2 Total Dose, Equation A-25). The total dose, D^{TOT}, in the unrestricted area to a member of the public due to plant operations is given by:

$$D^{TOT} = D^{Ex} + D_{aj}^{Liq} + D_{aj}^{NNG}$$

Where:

D^{TOT} Total Dose to Member of Public [mrem]

Total off-site dose to a member of public due to plant operations.

D^{Ex} Total External Total Body Dose [mrem]

Total body dose due to external exposure to noble gases, N-16 skyshine and on-site storage facilities.

D_{aj}^{Liq} Liquid Effluent Dose [mrem]

Dose due to liquid effluents to age group ***a*** and organ ***j***. The age group and organ with the highest dose from liquid effluents is used.

D_{aj}^{NNG} Non-Noble Gaseous Effluent Dose [mrem]

Dose due to non-noble gaseous effluents to age group ***a*** and organ ***j***. The age group and organ with the highest dose from non-noble gas effluents is used.

The maximum calculated dose to a real individual would not exceed 8.12E-01 mrem (total body), 2.18E+00 mrem (organ), or 8.18E-01 mrem (thyroid)

Table D.1 Summary of Gaseous and Liquid Effluent Doses to Members of the Public at the Highest Dose Receptors vs 10 CFR50 Design Objectives

Maximum Individual Noble Gas	Applicable Dose	Estimated Dose	Age Group	% of Applicable Limit	Design Objective Limit (per year, combined)	Unit
Nearest Residence	Gamma Air Dose	1.15E-05	All	5.75E-05	20	mrad
Nearest Residence	Beta Air Dose	1.99E-05	All	4.98E-05	40	mrad
Nearest Residence	Total Body	1.07E-05	All	1.07E-04	10	mrem
Nearest Residence	Skin	2.31E-05	All	7.69E-05	30	mrem
Non-Noble Gas						
Nearest Residence	Bone	1.76E+00	Child	5.87E+00	30	mrem
Liquid						
Nearest Residence	Total Body	7.78E-02	Child	1.30E+00	6	mrem
Nearest Residence	GI-LLI	7.88E-02	Child	3.94E-01	20	mrem

Table D.2 Summary of Doses to Members of the Public at the Highest Dose Receptors for 40CFR190 and 10CFR74.104 Compliance

Highest Dose Receptors	Non-Noble Gas	Liquid Effluents	External Direct Radiation	Total	% of Applicable Limit	Limit	Unit
Total Body Dose	3.94E-01	7.78E-02	3.40E-01	8.12E-01	3.25E+00	25	mrem
Organ Dose	1.76E+00	7.88E-02	3.40E-01	2.18E+00	8.73E+00	25	mrem
Thyroid Dose	4.00E-01	7.78E-02	3.40E-01	8.18E-01	1.09E+00	75	mrem

E. Meteorological Data

The Braidwood Station meteorological monitoring program produced 52,078 hours of valid data out of a possible 52,560 parameter hours during 2017 (365 days x 24 hours/day x 6 measured priority parameters), which represents an overall data recovery rate of 99.8%. Priority parameters are all parameters except dew point temperature and precipitation. For the year, winds measured at 34 ft. most frequently came from the West-(10.63%) and fell into the 3.6 - 7.5 mph wind speed class (41.53%). Calms (wind speeds at or below the sensor threshold) were measured 0.00% of the time and speeds greater than 24.5 mph were measured 0.07% of the time. Stability based on the 199 - 30 ft. differential temperature most frequently fell into the slightly stable classification (39.86%).

Appendix C contains the Joint Frequency Distribution tables from the Meteorological Data collected in 2017.

F. Offsite Ambient Radiation Measurements

Review of the Braidwood Optically Stimulated Luminescent Dosimetry (OSLD) data showed statistical increases above background at only locations related to the ISFSI pad. A dose evaluation was performed taking the highest readings and extrapolating dose to the nearest resident. The dose to the resident was estimated to be 3.40E-01 mrem in 2017.

G. Radioactive Solid Waste Disposal

Radioactive wastes shipped offsite are captured in the table titled, "Solid Wastes Shipped Offsite for Burial or Disposal (Not irradiated fuel)." Approximately 5.49E+02 cubic meters of solid waste was shipped offsite containing approximately 1.11E+02 Curies during the 2017 reporting period. Appendix B contains tables and detailed information about the Solid Waste Disposal program.

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TABLE 1A
GASEOUS EFFLUENTS- – SUMMATION OF ALL RELEASES UNIT 1 AND 2

	Unit	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total	Est. Total Error%
A. Fission and Activation Gas Releases							
1. Total Release Activity	Ci	5.11E-02	2.67E-01	5.14E-02	<LLD	3.69E-01	7.59E+00
2. Average Release Rate	µCi/sec	6.57E-03	3.39E-02	6.47E-03	<LLD	1.17E-02	
3. Percent of ODCM Limit – gamma	%	4.07E-06	1.07E-04	4.10E-06	N/A	5.74E-05	
4. Percent of ODCM Limit - beta	%	9.87E-06	7.97E-05	9.93E-06	N/A	4.98E-05	
B. Iodine Releases							
1. Total Iodine-131	Ci	3.09E-09	2.03E-06	9.91E-07	1.78E-05	2.08E-05	3.32E+01
2. Average Release Rate	µCi/sec	3.97E-10	2.58E-07	1.25E-07	2.24E-06	6.60E-07	
3. Percent of ODCM Limit	%	3.05E+00	2.60E+00	2.99E+00	3.12E+00	5.88E+00	
C. Particulate (> 8-day half-life) Releases							
1. Particulates with half-lives > 8 days	Ci	<LLD	1.55E-06	<LLD	<LLD	1.55E-06	1.98E+01
2. Average Release Rate	µCi/sec	<LLD	1.97E-07	<LLD	<LLD	4.91E-08	
3. Percent of ODCM Limit	%	3.05E+00	2.60E+00	2.99E+00	3.12E+00	5.88E+00	
D. Tritium Releases							
1. Total Release Activity	Ci	2.88E+01	1.44E+02	4.92E+01	6.06E+01	2.82E+02	8.07E+00
2. Average Release Rate	µCi/sec	3.70E+00	1.83E+01	6.19E+00	7.62E+00	8.95E+00	
3. Percent of ODCM Limit	%	3.05E+00	2.60E+00	2.99E+00	3.12E+00	5.88E+00	
E. Gross Alpha Releases							
1. Total Release Activity	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	µCi/sec	N/A	N/A	N/A	N/A	N/A	
3. Percent of ODCM limit	%	N/A	N/A	N/A	N/A	N/A	
F. Carbon-14 Releases							
1. Total Release Activity	Ci	2.17E+00	1.86E+00	2.13E+00	2.22E+00	8.39E+00	
2. Average Release Rate	µCi/sec	2.80E-01	2.36E-01	2.69E-01	2.80E-01	2.66E-01	
3. Percent of ODCM limit	%	3.05E+00	2.60E+00	2.99E+00	3.12E+00	5.88E+00	

Note: ODCM LLD threshold values are included in Table 4.i of this report.
Note: The ODCM Limit is a dose based limit combined for Iodines, Particulate, Tritium and C-14.

APPENDIX A: EFFLUENT AND WASTE DISPOSAL SUMMARY

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TABLE 1B-1
GASEOUS EFFLUENTS – MIXED MODE RELEASES – CONTINUOUS MODE UNIT 1 AND 2

Nuclides Released		Continuous Mode				
A. Fission Gases	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
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-131m	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	<LLD	<LLD	<LLD
B. Iodines / Halogens	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Br-82	Ci	<LLD	6.98E-06	<LLD	8.90E-06	1.59E-05
I-131	Ci	<LLD	1.62E-06	<LLD	2.27E-06	3.89E-06
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	4.77E-06	<LLD	7.34E-06	4.01E-05	5.22E-05
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	4.77E-06	8.61E-06	7.34E-06	5.13E-05	7.20E-05
C. Particulates	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	Ci	<LLD	1.55E-06	<LLD	<LLD	1.55E-06
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	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	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	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

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TABLE 1B-1 (Cont.)
GASEOUS EFFLUENTS – MIXED MODE RELEASES – CONTINUOUS MODE UNIT 1 AND 2

Nuclides Released		**Continuous Mode**				
C. Particulates (Cont.)	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	1.55E-06	<LLD	<LLD	1.55E-06
D. Tritium	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	2.69E+01	1.40E+02	4.53E+01	2.36E+01	2.36E+02
E. Gross Alpha	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
F. Carbon-14	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	2.17E+00	1.86E+00	2.13E+00	2.22E+00	8.39E+00

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TABLE 1B-2
GASEOUS EFFLUENTS – MIXED MODE RELEASES – BATCH MODE UNIT 1 AND 2

Nuclides Released		Batch Mode				
A. Fission Gases	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Ar-41	Ci	<LLD	2.59E-02	<LLD	<LLD	2.59E-02
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	3.05E-03	<LLD	<LLD	3.05E-03
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	3.23E-03	<LLD	<LLD	3.23E-03
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	5.11E-02	1.73E-01	5.14E-02	<LLD	2.76E-01
Xe-135	Ci	<LLD	6.12E-02	<LLD	<LLD	6.12E-02
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	5.11E-02	2.67E-01	5.14E-02	<LLD	3.69E-01
B. Iodines / Halogens	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Br-82	Ci	2.12E-05	1.97E-05	3.24E-05	4.75E-05	1.21E-04
I-131	Ci	3.09E-09	4.07E-07	9.91E-07	1.55E-05	1.69E-05
I-132	Ci	<LLD	9.37E-06	1.23E-07	3.27E-05	4.22E-05
I-133	Ci	5.37E-07	1.25E-06	3.78E-06	8.12E-05	8.67E-05
I-134	Ci	<LLD	<LLD	<LLD	3.18E-06	3.18E-06
I-135	Ci	<LLD	2.83E-07	2.31E-06	8.49E-05	8.75E-05
Total for Period	Ci	2.18E-05	3.11E-05	3.96E-05	2.65E-04	3.57E-04
C. Particulates	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	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	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	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

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TABLE 1B-2 (Cont.)
GASEOUS EFFLUENTS – MIXED MODE RELEASES – BATCH MODEUNIT 1 AND 2

Nuclides Released		**Batch Mode**				
C. Particulates (Cont.)	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
D. Tritium	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	1.86E+00	3.56E+00	3.91E+00	3.70E+01	4.63E+01
E. Gross Alpha	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
F. Carbon-14	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

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TABLE 2A
LIQUID EFFLUENTS- – SUMMATION OF ALL RELEASES UNIT 1 AND 2

	Unit	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total	Est. Total Error %
A. Fission and Activation Products							
1. Total Release	Ci	5.16E-02	3.62E-02	4.03E-03	2.64E-04	9.22E-02	2.64E+00
2. Average Diluted Concentration	µCi/ml	4.09E-09	3.12E-09	2.56E-10	1.85E-11	1.70E-09	
3. Percent of applicable limit	%	*	*	*	*	*	
B. Tritium							
1. Total Release	Ci	3.74E+02	8.61E+02	3.25E+02	8.64E+02	2.42E+03	5.85E+00
2. Average Diluted Concentration	µCi/ml	2.97E-05	7.41E-05	2.06E-05	6.05E-05	4.47E-05	
3. % of Limit (1E-2 µCi/ml)	%	2.97E-01	7.41E-01	2.06E-01	6.05E-01	4.47E-01	
C. Dissolved Noble Gases							
1. Total Release	Ci	<LLD	1.76E-05	<LLD	<LLD	1.76E-05	2.64E+00
2. Average Diluted Concentration	µCi/ml	N/A	1.51E-12	N/A	N/A	3.24E-13	
3. % of Limit (2E-4 µCi/ml)	%	N/A	7.56E-07	N/A	N/A	1.62E-07	
D. Gross Alpha							
1. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	1.47E+01
E. Volume of Waste Released (prior to dilution)	liters	1.01E+10	8.86E+09	1.23E+10	8.42E+09	3.97E+10	
F. Volume of Dilution Water	liters	2.49E+09	2.77E+09	3.48E+09	5.86E+09	1.46E+10	

Note: ODCM LLD threshold values are included in Table 4.i of this report.
* This limit is equal to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10CFR20.1001-20.2402, except for Dissolved Noble Gases. The limits for Dissolved Noble Gases are found the Braidwood Station ODCM, Table C-6 of ODCM Appendix C for Noble Gases.

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TABLE 2B-1
LIQUID EFFLUENTS – CONTINUOUS MODE UNIT 1 AND 2

Nuclides Released		Continuous Mode				
A. Fission and Activation Products	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	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
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
B. Tritium	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	3.75E-01	6.80E+01	8.39E+00	3.96E+01	1.16E+02
C. Dissolved and Entrained Gases	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
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-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
D. Gross Alpha	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

TABLE 2B-2
LIQUID EFFLUENTS – BATCH MODE UNIT 1 AND 2

Nuclides Released		Batch Mode				
A. Fission and Activation Products	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Cr-51	Ci	2.03E-03	3.24E-03	<LLD	<LLD	5.27E-03
Mn-54	Ci	5.90E-04	3.68E-04	7.98E-06	<LLD	9.66E-04
Fe-55	Ci	2.30E-02	1.08E-02	1.83E-03	<LLD	3.56E-02
Fe-59	Ci	6.14E-05	4.26E-04	1.08E-04	<LLD	5.95E-04
Co-57	Ci	9.81E-05	4.13E-05	<LLD	<LLD	1.39E-04
Co-58	Ci	1.17E-02	1.12E-02	1.12E-03	1.06E-04	2.41E-02
Co-60	Ci	1.05E-02	7.71E-03	6.53E-04	1.39E-04	1.90E-02
Zn-65	Ci	8.15E-05	<LLD	<LLD	<LLD	8.15E-05
Zr-95	Ci	2.98E-04	5.24E-05	7.15E-06	<LLD	3.57E-04
Nb-95	Ci	7.27E-04	3.37E-04	2.71E-05	<LLD	1.09E-03
Nb-97	Ci	9.19E-04	7.06E-04	9.51E-05	1.25E-05	1.73E-03
Ag-110m	Ci	7.54E-04	6.67E-04	8.94E-05	7.50E-06	1.52E-03
Sn-113	Ci	1.63E-04	9.53E-05	3.70E-06	<LLD	2.62E-04
Sb-125	Ci	6.59E-04	6.46E-04	8.97E-05	<LLD	1.39E-03
Te-123m	Ci	<LLD	<LLD	2.25E-06	<LLD	2.25E-06
Cs-134	Ci	<LLD	<LLD	1.11E-06	<LLD	1.11E-06
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	5.77E-05	<LLD	<LLD	<LLD	5.77E-05
Total for Period	Ci	5.16E-02	3.62E-02	4.03E-03	2.64E-04	9.22E-02
B. Tritium	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
	Ci	3.74E+02	7.93E+02	3.17E+02	8.25E+02	2.31E+03
C. Dissolved and Entrained Gases	**Unit**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	1.76E-05	<LLD	<LLD	1.76E-05
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	1.76E-05	<LLD	<LLD	1.76E-05

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

TABLE 2B-2 (Cont.)
LIQUID EFFLUENTS – BATCH MODE UNIT 1 AND 2

Nuclides Released		Batch Mode				
D. Gross Alpha	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

APPENDIX B: SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

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

1. Types of Waste	Total Quantity (m^3)	Total Activity (Ci)	Period	Est. Total Error %
a. Spent resins, filter sludges, evaporator bottoms, etc.	2.09E+02	1.09E+02	Jan - Dec 2017	25
b. Dry compressible waste, contaminated equip, etc.	3.25E+02	1.12E+00	Jan - Dec 2017	25
c. Irradiated components, control rods, etc.	0.00E+00	0.00E+00	Jan - Dec 2017	25
d. Other (oil, reverse osmosis reject water, soil, lagoon sediment)	1.46E+01	7.88E-01	Jan - Dec 2017	25

2. Estimate of Major Nuclide Composition (By Waste Type and Class)

a. Category A – Spent Resins, Filter Sludges, Evaporator Bottoms, etc.

Isotope	Waste Class A Curies	Percent Abundance	Waste Class C Curies	Percent Abundance
H-3	1.27E+01	23.61%	8.64E+00	15.88%
C-14	2.27E+00	4.22%	7.35E-02	0.14%
Cr-51	3.28E-02	0.06%	5.19E-03	0.01%
Mn-54	1.32E+00	2.45%	3.71E-01	0.68%
Fe-55	4.74E+00	8.78%	1.75E+01	32.17%
Fe-59	2.99E-03	0.01%	1.41E-03	0.00%
Co-58	4.58E+00	8.48%	2.31E-01	0.42%
Co-60	9.36E+00	17.35%	6.64E+00	12.21%
Ni-59	3.68E-01	0.68%	1.82E-01	0.33%
Ni-63	1.63E+01	30.18%	1.97E+01	36.22%
Zn-65	4.88E-01	0.91%	9.81E-03	0.02%
Sr-90	1.62E-02	0.03%	9.30E-03	0.02%
Zr-95	5.43E-03	0.01%	2.31E-02	0.04%
Nb-94	0.00E+00	0.00%	5.97E-03	0.01%
Nb-95	7.03E-02	0.13%	4.75E-02	0.09%
Tc-99	8.36E-03	0.02%	5.14E-02	0.09%
Ag-110m	2.89E-02	0.05%	2.14E-02	0.04%
Sb-124	2.89E-04	0.00%	4.81E-04	0.00%
Sb-125	5.11E-01	0.95%	1.57E-01	0.29%
I-129	0.00E+00	0.00%	4.76E-05	0.00%
Cs-137	8.47E-01	1.57%	5.31E-01	0.98%
Ce-144	1.09E-02	0.02%	1.32E-02	0.02%
Pu-238	1.18E-04	0.00%	1.91E-03	0.00%
Pu-239	1.04E-05	0.00%	5.66E-04	0.00%
Pu-241	1.40E-02	0.03%	1.40E-01	0.26%
Am-241	1.07E-05	0.00%	1.37E-03	0.00%
Cm-242	1.91E-07	0.00%	1.93E-05	0.00%
Cm-243	1.34E-04	0.00%	3.40E-03	0.01%
Cm-244	2.23E-05	0.00%	6.28E-06	0.00%

b. Category B – Dry Compressible Waste, Contaminated Equip, etc.

Isotope	Waste Class A Curies	Percent Abundance	Waste Class C Curies	Percent Abundance
H-3	1.04E-01	9.30%	0.00E+00	0.00%
C-14	0.00E+00	0.00%	0.00E+00	0.00%
Cr-51	1.14E-02	1.02%	0.00E+00	0.00%
Mn-54	1.32E-02	1.18%	0.00E+00	0.00%
Fe-55	3.06E-01	27.33%	0.00E+00	0.00%
Co-58	1.55E-01	13.83%	0.00E+00	0.00%
Co-60	2.03E-01	18.19%	0.00E+00	0.00%
Ni-59	1.69E-03	0.15%	0.00E+00	0.00%
Ni-63	2.55E-01	22.79%	0.00E+00	0.00%
Sr-90	6.35E-04	0.06%	0.00E+00	0.00%
Zr-95	1.55E-02	1.39%	0.00E+00	0.00%
Nb-95	2.60E-02	2.32%	0.00E+00	0.00%
Tc-99	7.44E-04	0.07%	0.00E+00	0.00%
Sb-125	1.04E-02	0.93%	0.00E+00	0.00%
I-129	0.00E+00	0.00%	0.00E+00	0.00%
Cs-137	3.21E-03	0.29%	0.00E+00	0.00%
Pu-238	1.20E-05	0.00%	0.00E+00	0.00%
Pu-241	2.47E-04	0.02%	0.00E+00	0.00%
Am-241	1.61E-05	0.00%	0.00E+00	0.00%
Cm-242	2.47E-06	0.00%	0.00E+00	0.00%
Cm-243	2.60E-05	0.00%	0.00E+00	0.00%
Cm-244	3.19E-05	0.00%	0.00E+00	0.00%

c. Category C – Irradiated Components, Control Rods, etc.

Isotope	Waste Class A Curies	Percent Abundance	Waste Class C Curies	Percent Abundance
None	N/A	N/A	N/A	N/A

d. Category D – Other (Oil, Reverse Osmosis Reject Water, Soil, Lagoon Sediment)

Isotope	Waste Class A Curies	Percent Abundance	Waste Class C Curies	Percent Abundance
H-3	7.61E-01	96.57%	0.00E+00	0.00%
C-14	0.00E+00	0.00%	0.00E+00	0.00%
Cr-51	2.77E-04	0.04%	3.69E-16	0.00%
Mn-54	3.54E-04	0.04%	1.91E-08	0.00%
Fe-55	8.54E-03	1.08%	0.00E+00	0.00%
Co-58	4.48E-03	0.57%	2.28E-11	0.00%
Co-60	5.49E-03	0.70%	2.32E-05	5.44%
Ni-59	3.53E-05	0.00%	0.00E+00	0.00%
Ni-63	5.92E-03	0.75%	0.00E+00	0.00%
Sr-90	1.78E-05	0.00%	5.25E-07	0.12%
Zr-95	4.39E-04	0.06%	0.00E+00	0.00%
I-129	0.00E+00	0.00%	0.00E+00	0.00%

Isotope (cont.)	Waste Class A Curies	Percent Abundance	Waste Class C Curies	Percent Abundance
Cs-137	6.22E-05	0.01%	1.90E-04	44.45%
Pu-238	2.82E-07	0.00%	0.00E+00	0.00%
Pu-241	0.00E+00	0.00%	0.00E+00	0.00%
Am-241	4.51E-07	0.00%	5.99E-05	14.04%
Cm-242	0.00E+00	0.00%	0.00E+00	0.00%
Cm-243	8.19E-07	0.00%	0.00E+00	0.00%
Cm-244	8.18E-07	0.00%	0.00E+00	0.00%

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
1	CAST Transportation	Energy Solutions-Bear Creek Facility 1560 Bear Creek Road
5	Hittman Transportation	Energy Solutions Services - Gallaher Rd 628 Gallaher Rd.
9	Hittman Transportation	Energy Solutions-Bear Creek Facility 1560 Bear Creek Road
7	Hittman Transportation	EnergySolutions LLC. Clive Disposal Site - Containerized Waste Facility
6	Hittman Transportation	EnergySolutions, LLC (Treatment Facility) Clive Disposal Site - Treatment Facility
2	Hittman Transportation	Waste Control Specialists LLC Compact Waste Disposal Facility
1	Visionary Solutions, LLC	Energy Solutions Services – Gallaher Rd 628 Gallaher Rd

B. Irradiated Fuel Shipments

1. None

C. Irradiated Fuel Shipments (disposition)

No irradiated fuel shipments were dispositioned at Braidwood during January through December 2017.

D. Changes to the Process Control Program (PCP)

Revision 12 of the Process Control Program, RW-AA-100 was implemented September 29, 2017. These were administrative changes made to include references for Nine Mile Point and Fitzpatrick stations, while removing Ft. Calhoun. The changes maintain the overall conformance of solidified waste product to the existing criteria for solid wastes and were reviewed and found acceptable by onsite review.

APPENDIX C: WIND DIRECTION AND STABILITY CLASSES

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	0	2	0	0	0	2
SE	0	0	2	2	0	0	4
SSE	0	0	1	1	0	0	2
S	0	0	1	0	0	0	1
SSW	0	1	4	0	0	0	5
SW	0	1	1	0	1	0	3
WSW	0	0	2	0	0	0	2
W	0	2	4	6	1	5	18
WNW	0	2	17	6	0	0	25
NW	0	1	22	0	0	0	23
NNW	0	0	9	1	0	0	10
Variable	0	0	0	0	0	0	0
Total	0	8	66	16	2	5	97

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	2	1	0	0	0	3
E	0	2	0	0	0	0	2
ESE	0	0	1	0	0	0	1
SE	0	0	1	0	0	0	1
SSE	0	0	3	1	0	0	4
S	0	1	0	0	0	0	1
SSW	0	0	2	0	1	0	3
SW	0	0	1	1	1	0	3
WSW	0	1	0	1	0	0	2
W	0	0	1	2	1	0	4
WNW	0	2	8	4	0	0	14
NW	0	0	3	1	0	0	4
NNW	0	2	3	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	0	12	24	10	3	0	49

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Period of Record: January - March 2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	2	1	0	0	0	3
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	1	0	0	0	0	1
E	0	3	0	0	0	0	3
ESE	0	3	0	0	0	0	3
SE	0	4	3	0	0	0	7
SSE	0	1	10	0	0	0	11
S	0	1	2	1	0	0	4
SSW	0	4	4	0	2	0	10
SW	0	2	3	2	0	0	7
WSW	0	3	3	0	0	0	6
W	0	0	3	2	0	0	5
WNW	0	1	4	3	0	0	8
NW	0	2	2	2	0	0	6
NNW	0	1	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	0	29	35	10	2	0	76

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	14	28	0	0	0	43
NNE	4	18	11	0	0	0	33
NE	7	14	13	0	0	0	34
ENE	5	16	17	0	0	0	38
E	4	8	5	0	0	0	17
ESE	2	10	2	0	0	0	14
SE	2	10	7	0	0	0	19
SSE	0	9	25	1	0	0	35
S	0	12	33	42	5	0	92
SSW	0	8	9	25	4	0	46
SW	0	5	27	15	4	0	51
WSW	1	6	4	13	0	0	24
W	1	14	20	30	4	0	69
WNW	4	23	85	25	2	0	139
NW	1	43	23	3	0	0	70
NNW	3	22	23	4	0	0	52
Variable	0	0	0	0	0	0	0
Total	35	232	332	158	19	0	776

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 5
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	13	10	0	0	0	26
NNE	18	25	13	1	0	0	57
NE	4	28	25	0	0	0	57
ENE	16	46	22	0	0	0	84
E	23	29	10	0	0	0	62
ESE	7	32	11	1	0	0	51
SE	4	32	27	1	0	0	64
SSE	0	28	27	0	0	0	55
S	1	33	28	2	4	0	68
SSW	1	10	19	1	2	0	33
SW	0	22	52	9	1	1	85
WSW	1	18	20	0	0	0	39
W	9	25	28	9	3	0	74
WNW	17	59	39	3	0	0	118
NW	14	52	7	0	0	0	73
NNW	6	33	10	0	0	0	49
Variable	0	0	0	0	0	0	0
Total	124	485	348	27	10	1	995

Hours of calm in this stability class: 3
Hours of missing wind measurements in this stability class: 12
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	1	0	0	0	0	4
NNE	2	0	0	0	0	0	2
NE	2	0	0	0	0	0	2
ENE	4	0	0	0	0	0	4
E	1	2	0	0	0	0	3
ESE	4	5	0	0	0	0	9
SE	0	1	0	0	0	0	1
SSE	1	0	0	0	0	0	1
S	0	1	0	0	0	0	1
SSW	1	3	4	0	0	0	8
SW	5	2	2	0	0	0	9
WSW	1	13	0	0	0	0	14
W	11	14	1	0	0	0	26
WNW	10	5	1	0	0	0	16
NW	8	0	0	0	0	0	8
NNW	5	1	0	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	58	48	8	0	0	0	114

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	0	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	1	0	0	0	0	0	1
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	4	0	0	0	0	0	4
WSW	3	2	0	0	0	0	5
W	3	3	0	0	0	0	6
WNW	6	0	0	0	0	0	6
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	20	6	0	0	0	0	26

Hours of calm in this stability class: 3
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	1	0	2	0	3
SE	0	0	0	0	3	1	4
SSE	0	0	0	2	0	0	2
S	0	0	1	1	0	0	2
SSW	0	1	0	2	0	0	3
SW	0	0	2	1	0	1	4
WSW	0	0	2	0	0	0	2
W	0	0	3	1	3	9	16
WNW	0	1	6	13	6	0	26
NW	0	0	7	17	1	0	25
NNW	0	0	1	7	1	0	9
Variable	0	0	0	0	0	0	0
Total	0	2	24	44	16	11	97

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

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

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	2	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	1	0	0	0	0	1
E	0	0	2	1	0	0	3
ESE	0	1	1	0	0	0	2
SE	0	1	3	1	1	0	6
SSE	0	2	4	7	0	0	13
S	0	0	4	1	1	0	6
SSW	0	2	5	2	0	2	11
SW	0	1	1	3	0	0	5
WSW	0	2	4	0	0	0	6
W	0	0	3	0	1	1	5
WNW	0	1	1	3	2	1	8
NW	0	0	2	2	0	2	6
NNW	0	0	2	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	0	11	34	20	5	6	76

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Period of Record: January - March 2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	3	20	15	0	0	40
NNE	0	4	16	6	0	0	26
NE	3	7	15	7	0	0	32
ENE	4	7	9	12	1	0	33
E	5	2	10	5	0	0	22
ESE	1	1	9	4	2	0	17
SE	0	1	6	9	0	0	16
SSE	1	4	7	18	6	0	36
S	0	3	12	19	37	22	93
SSW	0	6	7	9	17	14	53
SW	0	1	13	15	10	4	43
WSW	1	3	5	4	13	0	26
W	0	4	11	14	17	7	53
WNW	1	2	17	63	38	13	134
NW	1	3	24	40	13	6	87
NNW	2	6	20	15	6	0	49
Variable	0	0	0	0	0	0	0
Total	21	57	201	255	160	66	760

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 21
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	4	12	10	0	0	26
NNE	3	9	28	11	1	0	52
NE	0	10	24	26	0	0	60
ENE	3	15	35	16	0	0	69
E	3	12	28	11	4	1	59
ESE	3	8	31	19	6	1	68
SE	1	4	24	28	9	0	66
SSE	0	2	19	30	8	0	59
S	0	1	14	28	9	3	55
SSW	0	0	23	20	10	4	57
SW	0	3	18	25	15	3	64
WSW	0	4	15	26	4	0	49
W	2	4	13	40	2	5	66
WNW	2	2	37	39	5	6	91
NW	1	7	40	42	10	0	100
NNW	1	8	32	13	0	0	54
Variable	0	0	0	0	0	0	0
Total	19	93	393	384	83	23	995

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 15
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	2	7	0	0	0	10
NNE	0	2	3	0	0	0	5
NE	0	0	2	0	0	0	2
ENE	1	1	1	0	0	0	3
E	0	1	1	0	0	0	2
ESE	0	0	1	0	0	0	1
SE	1	0	4	4	0	0	9
SSE	0	0	1	0	0	0	1
S	0	0	0	0	0	0	0
SSW	0	0	0	1	0	0	1
SW	0	1	3	4	2	0	10
WSW	1	3	7	3	0	0	14
W	0	1	8	3	0	0	12
WNW	2	1	13	5	1	0	22
NW	0	6	8	2	0	0	16
NNW	0	3	4	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	6	21	63	22	3	0	115

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: January - March 2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	1	0	0	0	1
NE	1	0	1	0	0	0	2
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	1	0	0	1
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	1	2	0	0	0	0	3
WSW	2	0	1	1	0	0	4
W	0	1	3	0	0	0	4
WNW	2	2	3	0	0	0	7
NW	0	1	4	1	0	0	6
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	6	7	13	3	0	0	29

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	2	0	0	2
NNE	0	1	5	0	0	0	6
NE	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	3	0	0	0	0	3
ESE	0	1	0	0	0	0	1
SE	0	0	1	0	0	0	1
SSE	0	1	0	0	0	0	1
S	0	2	5	3	0	0	10
SSW	0	0	7	11	2	0	20
SW	0	1	6	4	0	0	11
WSW	0	0	7	4	0	0	11
W	0	1	19	7	0	0	27
WNW	0	3	7	0	0	0	10
NW	0	2	3	0	0	0	5
NNW	0	0	4	2	0	0	6
Variable	0	0	0	0	0	0	0
Total	0	15	65	33	2	0	115

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	3	0	0	3
NNE	0	0	3	1	0	0	4
NE	0	1	5	0	0	0	6
ENE	0	0	0	0	0	0	0
E	0	3	0	0	0	0	3
ESE	0	5	0	0	0	0	5
SE	0	1	1	0	0	0	2
SSE	0	1	0	1	0	0	2
S	0	1	2	3	0	0	6
SSW	0	0	1	1	0	0	2
SW	0	2	6	5	0	0	13
WSW	0	0	5	2	1	0	8
W	0	4	14	2	0	0	20
WNW	0	1	3	0	0	0	4
NW	0	1	0	0	0	0	1
NNW	0	1	9	0	0	0	10
Variable	0	0	0	0	0	0	0
Total	0	21	49	18	1	0	89

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	4	1	0	0	5
NNE	1	1	3	0	0	0	5
NE	0	2	3	1	0	0	6
ENE	0	0	0	0	0	0	0
E	1	4	0	0	0	0	5
ESE	0	2	0	0	0	0	2
SE	0	2	5	0	0	0	7
SSE	0	2	0	0	0	0	2
S	1	3	4	3	0	0	11
SSW	0	0	3	6	0	0	9
SW	0	0	4	3	2	0	9
WSW	0	1	6	2	0	0	9
W	0	3	8	1	0	0	12
WNW	0	2	7	1	0	0	10
NW	0	4	2	0	0	0	6
NNW	0	1	3	1	0	0	5
Variable	0	0	0	0	0	0	0
Total	3	27	52	19	2	0	103

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

Period of Record: April - June 2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	10	8	3	0	0	21
NNE	2	16	20	6	0	0	44
NE	5	14	28	4	0	0	51
ENE	3	14	5	0	0	0	22
E	4	24	1	0	0	0	29
ESE	5	15	2	0	0	0	22
SE	5	15	8	0	0	0	28
SSE	1	13	11	0	0	0	25
S	3	5	5	12	2	0	27
SSW	3	6	8	9	9	0	35
SW	0	5	15	15	6	0	41
WSW	1	11	13	8	0	0	33
W	1	20	40	15	0	0	76
WNW	4	13	17	2	0	0	36
NW	2	21	3	1	0	0	27
NNW	3	7	9	6	0	0	25
Variable	0	0	0	0	0	0	0
Total	42	209	193	81	17	0	542

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 2
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	9	23	5	6	0	0	43
NNE	5	34	13	9	0	0	61
NE	17	43	36	10	1	0	107
ENE	19	56	18	0	0	0	93
E	14	39	1	0	0	0	54
ESE	6	22	1	1	0	0	30
SE	8	27	6	0	0	0	41
SSE	3	30	19	0	0	0	52
S	4	22	53	21	4	0	104
SSW	0	9	58	31	5	0	103
SW	0	26	37	16	0	0	79
WSW	4	21	15	10	0	0	50
W	6	22	16	5	0	0	49
WNW	4	17	24	1	0	0	46
NW	6	13	4	0	0	0	23
NNW	8	9	9	1	0	0	27
Variable	0	0	0	0	0	0	0
Total	113	413	315	111	10	0	962

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 8
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	4	1	0	0	0	0	5
NNE	6	2	0	0	0	0	8
NE	10	1	0	0	0	0	11
ENE	20	0	0	0	0	0	20
E	19	3	0	0	0	0	22
ESE	14	10	0	0	0	0	24
SE	2	2	0	0	0	0	4
SSE	4	9	0	0	0	0	13
S	1	4	0	0	0	0	5
SSW	4	3	2	0	0	0	9
SW	0	8	0	0	0	0	8
WSW	11	39	0	0	0	0	50
W	10	8	0	0	0	0	18
WNW	7	2	0	0	0	0	9
NW	7	4	0	0	0	0	11
NNW	5	2	1	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	124	98	3	0	0	0	225

Hours of calm in this stability class: 4
Hours of missing wind measurements in this stability class: 3
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	9	0	0	0	0	0	9
NNE	3	0	0	0	0	0	3
NE	4	0	0	0	0	0	4
ENE	1	0	0	0	0	0	1
E	12	1	0	0	0	0	13
ESE	9	0	0	0	0	0	9
SE	4	0	0	0	0	0	4
SSE	1	0	0	0	0	0	1
S	2	0	0	0	0	0	2
SSW	1	1	0	0	0	0	2
SW	2	0	0	0	0	0	2
WSW	6	9	0	0	0	0	15
W	17	0	0	0	0	0	17
WNW	10	0	0	0	0	0	10
NW	0	0	0	0	0	0	0
NNW	4	0	0	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	85	11	0	0	0	0	96

Hours of calm in this stability class: 18
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	1	0	1
NNE	0	1	0	0	1	0	2
NE	0	0	0	6	0	0	6
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	3	0	0	0	0	3
SE	0	0	1	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	6	1	2	0	9
SSW	0	0	3	1	7	4	15
SW	0	0	4	9	3	0	16
WSW	0	0	2	2	2	0	6
W	0	0	0	11	6	0	17
WNW	0	1	4	11	8	1	25
NW	0	0	3	3	0	0	6
NNW	0	0	3	2	2	0	7
Variable	0	0	0	0	0	0	0
Total	0	6	26	46	32	5	115

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	1	0	0	2
NNE	0	0	0	0	3	0	3
NE	0	1	1	7	1	0	10
ENE	0	1	0	0	0	0	1
E	0	0	1	0	0	0	1
ESE	0	2	4	0	0	0	6
SE	0	0	2	0	0	0	2
SSE	0	1	1	0	1	0	3
S	0	0	1	2	2	0	5
SSW	0	0	0	0	2	0	2
SW	0	1	2	9	1	0	13
WSW	0	0	0	3	0	0	3
W	0	0	1	9	1	2	13
WNW	0	1	3	7	3	0	14
NW	0	0	0	2	0	0	2
NNW	0	0	4	5	0	0	9
Variable	0	0	0	0	0	0	0
Total	0	7	21	45	14	2	89

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	1	5	1	0	8
NNE	0	0	1	2	0	0	3
NE	0	0	2	2	1	0	5
ENE	0	1	0	1	0	0	2
E	0	0	3	0	0	0	3
ESE	0	2	1	0	0	0	3
SE	0	0	5	2	0	0	7
SSE	0	1	1	0	0	0	2
S	0	0	4	3	2	0	9
SSW	0	0	2	1	1	4	8
SW	0	0	1	5	3	3	12
WSW	0	1	2	2	0	0	5
W	0	2	1	3	3	0	9
WNW	0	1	0	11	2	0	14
NW	0	1	4	1	2	0	8
NNW	0	0	4	0	1	0	5
Variable	0	0	0	0	0	0	0
Total	0	10	32	38	16	7	103

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	8	7	2	1	0	19
NNE	0	5	22	8	3	0	38
NE	1	8	8	22	12	0	51
ENE	3	11	7	6	1	0	28
E	2	16	12	1	1	0	32
ESE	2	7	9	7	0	0	25
SE	0	12	11	6	0	0	29
SSE	3	8	9	5	1	0	26
S	1	4	6	3	6	4	24
SSW	1	4	2	5	7	16	35
SW	0	4	5	12	10	8	39
WSW	1	5	7	5	7	0	25
W	0	4	16	24	11	0	55
WNW	1	5	14	20	19	1	60
NW	0	12	11	10	1	1	35
NNW	0	6	3	8	6	0	23
Variable	0	0	0	0	0	0	0
Total	16	119	149	144	86	30	544

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	5	9	3	3	3	26
NNE	0	8	23	18	8	0	57
NE	1	14	37	30	12	5	99
ENE	0	22	32	28	3	0	85
E	2	21	48	15	1	0	87
ESE	0	4	11	11	0	0	26
SE	0	5	14	18	2	0	39
SSE	2	5	15	18	3	0	43
S	1	2	18	33	21	8	83
SSW	0	1	9	54	40	22	126
SW	1	1	27	43	13	4	89
WSW	0	1	29	11	5	1	47
W	0	4	16	15	8	1	44
WNW	1	9	16	25	3	1	55
NW	0	4	6	19	7	1	37
NNW	0	10	6	9	3	0	28
Variable	0	0	0	0	0	0	0
Total	11	116	316	350	132	46	971

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	6	6	0	0	0	13
NNE	0	0	3	0	0	0	3
NE	0	2	6	2	0	0	10
ENE	3	3	10	0	0	0	16
E	2	3	11	0	0	0	16
ESE	0	0	17	9	0	0	26
SE	0	2	7	3	0	0	12
SSE	1	2	2	2	0	0	7
S	1	8	5	4	0	0	18
SSW	0	1	2	1	0	0	4
SW	1	3	2	5	0	0	11
WSW	1	1	12	4	0	0	18
W	1	0	31	12	0	0	44
WNW	0	2	9	5	0	0	16
NW	0	2	5	1	0	0	8
NNW	1	2	6	1	0	0	10
Variable	0	0	0	0	0	0	0
Total	12	37	134	49	0	0	232

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: April - June 2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	1	5	0	0	0	7
NNE	5	2	2	0	0	0	9
NE	0	7	1	1	0	0	9
ENE	2	3	0	0	0	0	5
E	0	2	3	5	0	0	10
ESE	1	1	1	2	0	0	5
SE	0	2	4	1	0	0	7
SSE	0	4	0	0	0	0	4
S	0	0	2	0	0	0	2
SSW	2	1	0	0	0	0	3
SW	1	5	1	0	0	0	7
WSW	2	2	1	3	0	0	8
W	1	1	5	6	0	0	13
WNW	0	2	6	0	0	0	8
NW	0	2	10	0	0	0	12
NNW	0	2	3	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	15	37	44	18	0	0	114

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 16

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	3	6	0	0	0	10
NNE	0	3	2	0	0	0	5
NE	1	12	14	0	0	0	27
ENE	2	12	1	0	0	0	15
E	3	19	0	0	0	0	22
ESE	2	10	0	0	0	0	12
SE	1	19	1	0	0	0	21
SSE	3	25	3	0	0	0	31
S	0	15	9	0	0	0	24
SSW	0	11	14	0	0	0	25
SW	0	4	10	2	0	0	16
WSW	1	10	12	4	0	0	27
W	1	26	22	0	0	0	49
WNW	5	18	8	0	0	0	31
NW	0	20	8	0	0	0	28
NNW	0	16	6	0	0	0	22
Variable	0	0	0	0	0	0	0
Total	20	223	116	6	0	0	365

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	2	1	0	0	0	4
NNE	0	2	9	0	0	0	11
NE	1	1	6	0	0	0	8
ENE	1	2	0	0	0	0	3
E	2	4	0	0	0	0	6
ESE	2	6	0	0	0	0	8
SE	0	2	1	0	0	0	3
SSE	1	12	0	0	0	0	13
S	2	3	1	0	0	0	6
SSW	1	3	1	0	0	0	5
SW	0	2	0	1	0	0	3
WSW	1	6	2	0	0	0	9
W	0	9	4	0	0	0	13
WNW	2	6	2	0	0	0	10
NW	0	12	0	0	0	0	12
NNW	1	3	0	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	15	75	27	1	0	0	118

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

Period of Record: July - September 2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	4	2	0	0	0	8
NNE	2	7	5	0	0	0	14
NE	2	8	0	0	0	0	10
ENE	1	1	0	0	0	0	2
E	5	4	0	0	0	0	9
ESE	3	2	0	0	0	0	5
SE	2	6	0	0	0	0	8
SSE	0	8	0	0	0	0	8
S	2	2	0	0	0	0	4
SSW	1	2	1	0	0	0	4
SW	1	3	1	0	0	0	5
WSW	0	3	4	0	0	0	7
W	3	7	7	0	0	0	17
WNW	2	1	0	0	0	0	3
NW	1	4	1	0	0	0	6
NNW	2	7	1	0	0	0	10
Variable	0	0	0	0	0	0	0
Total	29	69	22	0	0	0	120

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	4	8	3	0	0	0	15
NNE	12	10	12	0	0	0	34
NE	11	26	8	0	0	0	45
ENE	17	10	0	0	0	0	27
E	10	8	0	0	0	0	18
ESE	10	10	0	0	0	0	20
SE	9	18	1	0	0	0	28
SSE	2	17	3	0	0	0	22
S	2	8	8	0	0	0	18
SSW	1	5	8	3	0	0	17
SW	3	7	10	0	0	0	20
WSW	2	25	8	0	0	0	35
W	6	20	10	0	0	0	36
WNW	4	10	0	0	0	0	14
NW	3	18	4	0	0	0	25
NNW	4	18	4	0	0	0	26
Variable	0	0	0	0	0	0	0
Total	100	218	79	3	0	0	400

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	15	17	0	0	0	0	32
NNE	12	30	4	0	0	0	46
NE	28	29	0	0	0	0	57
ENE	40	16	0	0	0	0	56
E	39	7	0	0	0	0	46
ESE	20	29	0	0	0	0	49
SE	13	40	1	0	0	0	54
SSE	16	43	0	0	0	0	59
S	3	21	11	0	0	0	35
SSW	1	18	18	1	0	0	38
SW	4	24	11	1	0	0	40
WSW	13	32	5	0	0	0	50
W	16	21	5	0	0	0	42
WNW	22	10	0	0	0	0	32
NW	14	7	0	0	0	0	21
NNW	13	16	0	0	0	0	29
Variable	0	0	0	0	0	0	0
Total	269	360	55	2	0	0	686

Hours of calm in this stability class: 9
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	20	2	0	0	0	0	22
NNE	13	2	0	0	0	0	15
NE	20	0	0	0	0	0	20
ENE	32	0	0	0	0	0	32
E	42	1	0	0	0	0	43
ESE	27	6	0	0	0	0	33
SE	18	18	0	0	0	0	36
SSE	5	7	0	0	0	0	12
S	9	6	0	0	0	0	15
SSW	5	6	0	0	0	0	11
SW	7	9	0	0	0	0	16
WSW	15	16	0	0	0	0	31
W	34	4	0	0	0	0	38
WNW	18	0	0	0	0	0	18
NW	10	0	0	0	0	0	10
NNW	4	0	0	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	279	77	0	0	0	0	356

Hours of calm in this stability class: 11
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	5	0	0	0	0	0	5
NNE	7	0	0	0	0	0	7
NE	9	0	0	0	0	0	9
ENE	11	0	0	0	0	0	11
E	10	0	0	0	0	0	10
ESE	5	1	0	0	0	0	6
SE	1	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	1	0	0	0	0	0	1
SW	5	1	0	0	0	0	6
WSW	10	3	0	0	0	0	13
W	25	0	0	0	0	0	25
WNW	13	0	0	0	0	0	13
NW	6	0	0	0	0	0	6
NNW	5	1	0	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	114	6	0	0	0	0	120

Hours of calm in this stability class: 20
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	6	5	0	0	12
NNE	1	1	2	0	0	0	4
NE	1	6	8	6	0	0	21
ENE	2	8	5	3	0	0	18
E	1	15	10	0	0	0	26
ESE	2	8	3	1	0	0	14
SE	0	14	6	2	0	0	22
SSE	2	18	11	1	0	0	32
S	0	8	8	3	0	0	19
SSW	1	2	21	5	0	0	29
SW	0	4	4	9	0	0	17
WSW	0	5	6	0	3	0	14
W	0	12	13	11	2	0	38
WNW	0	16	20	10	0	0	46
NW	0	6	14	2	1	0	23
NNW	0	6	20	4	0	0	30
Variable	0	0	0	0	0	0	0
Total	10	130	157	62	6	0	365

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	1	2	0	0	0	4
NNE	0	0	0	3	0	0	3
NE	1	3	4	6	0	0	14
ENE	1	0	2	1	0	0	4
E	2	6	0	0	0	0	8
ESE	0	3	1	0	0	0	4
SE	1	5	0	1	0	0	7
SSE	2	9	2	0	0	0	13
S	0	3	0	0	0	0	3
SSW	1	3	3	1	0	0	8
SW	0	2	0	1	0	0	3
WSW	0	4	4	0	0	0	8
W	0	5	5	2	0	0	12
WNW	0	3	2	1	0	0	6
NW	0	7	4	2	0	0	13
NNW	0	5	3	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	9	59	32	18	0	0	118

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	4	4	0	0	0	8
NNE	0	3	6	2	0	0	11
NE	6	3	3	2	0	0	14
ENE	2	2	0	0	0	0	4
E	2	4	0	0	0	0	6
ESE	3	5	1	0	0	0	9
SE	2	4	1	0	0	0	7
SSE	1	5	2	0	0	0	8
S	1	2	2	0	0	0	5
SSW	0	2	0	1	0	0	3
SW	0	2	1	1	0	0	4
WSW	1	0	3	0	0	0	4
W	0	5	2	5	0	0	12
WNW	0	2	4	2	0	0	8
NW	0	2	0	3	0	0	5
NNW	2	6	4	0	0	0	12
Variable	0	0	0	0	0	0	0
Total	20	51	33	16	0	0	120

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	6	8	0	0	0	16
NNE	5	7	7	4	0	0	23
NE	5	12	12	15	0	0	44
ENE	5	16	10	1	0	0	32
E	6	10	6	0	0	0	22
ESE	5	10	8	0	0	0	23
SE	1	11	12	1	0	0	25
SSE	1	6	17	3	0	0	27
S	2	3	7	8	0	0	20
SSW	0	5	4	5	2	0	16
SW	1	3	6	9	1	0	20
WSW	1	10	12	2	0	0	25
W	0	14	9	4	1	0	28
WNW	3	4	8	5	3	0	23
NW	2	4	11	12	0	0	29
NNW	1	10	12	4	0	0	27
Variable	0	0	0	0	0	0	0
Total	40	131	149	73	7	0	400

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	11	20	1	0	0	34
NNE	1	7	21	8	0	0	37
NE	0	11	28	10	0	0	49
ENE	1	25	34	1	0	0	61
E	0	17	30	0	0	0	47
ESE	1	6	19	4	0	0	30
SE	3	8	39	14	0	0	64
SSE	0	8	33	10	0	0	51
S	1	6	30	8	1	0	46
SSW	1	6	24	20	4	0	55
SW	1	7	15	13	2	1	39
WSW	5	12	26	4	2	0	49
W	1	4	26	12	0	0	43
WNW	1	6	16	7	0	0	30
NW	0	11	15	3	0	0	29
NNW	2	5	22	2	0	0	31
Variable	0	0	0	0	0	0	0
Total	20	150	398	117	9	1	695

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	3	5	0	0	0	9
NNE	0	7	9	2	0	0	18
NE	1	1	19	0	0	0	21
ENE	3	12	6	2	0	0	23
E	0	7	21	0	0	0	28
ESE	3	0	15	13	0	0	31
SE	1	11	31	3	0	0	46
SSE	2	8	19	4	0	0	33
S	0	1	17	1	0	0	19
SSW	0	4	11	2	0	0	17
SW	0	6	9	2	0	0	17
WSW	1	3	9	5	0	0	18
W	0	5	8	4	0	0	17
WNW	1	5	15	6	0	0	27
NW	0	3	19	4	0	0	26
NNW	0	8	9	0	0	0	17
Variable	0	0	0	0	0	0	0
Total	13	84	222	48	0	0	367

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: July - September 2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	7	7	0	0	0	14
NNE	0	1	6	0	0	0	7
NE	0	2	5	1	0	0	8
ENE	0	4	0	0	0	0	4
E	1	5	6	1	0	0	13
ESE	1	3	5	3	0	0	12
SE	0	1	4	1	0	0	6
SSE	0	2	2	0	0	0	4
S	0	1	1	0	0	0	2
SSW	2	2	0	0	0	0	4
SW	3	1	2	0	0	0	6
WSW	1	4	4	1	0	0	10
W	1	6	5	1	0	0	13
WNW	3	3	13	0	0	0	19
NW	1	3	7	0	0	0	11
NNW	0	5	1	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	13	50	68	8	0	0	139

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 3

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	2	0	0	0	0	2
E	0	2	0	0	0	0	2
ESE	0	4	0	0	0	0	4
SE	0	1	2	0	0	0	3
SSE	0	5	9	0	0	0	14
S	0	2	6	4	0	0	12
SSW	0	11	5	5	0	0	21
SW	0	5	4	2	0	0	11
WSW	0	4	6	0	0	0	10
W	0	5	7	5	2	0	19
WNW	0	5	12	2	0	0	19
NW	0	5	18	0	0	0	23
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	51	69	18	2	0	140

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	2	0	0	0	2
NE	2	3	1	0	0	0	6
ENE	0	0	1	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	1	0	0	0	2
SSE	0	1	2	0	0	0	3
S	0	3	4	1	1	0	9
SSW	0	2	2	1	0	0	5
SW	0	2	0	7	0	0	9
WSW	0	1	3	1	1	0	6
W	0	4	3	0	1	0	8
WNW	0	3	1	0	0	0	4
NW	0	3	2	0	0	0	5
NNW	0	0	1	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	2	23	23	10	3	0	61

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	3	0	0	0	0	3
NE	0	1	4	0	0	0	5
ENE	3	0	0	0	0	0	3
E	0	1	0	0	0	0	1
ESE	0	2	0	0	0	0	2
SE	0	2	0	0	0	0	2
SSE	0	1	1	0	0	0	2
S	1	2	2	2	2	0	9
SSW	0	0	0	0	1	0	1
SW	0	2	2	2	0	0	6
WSW	0	1	1	3	0	0	5
W	0	6	3	3	3	0	15
WNW	0	1	6	1	0	0	8
NW	0	1	1	0	0	0	2
NNW	0	0	1	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	4	23	21	11	6	0	65

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

Period of Record: October - December2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	3	21	9	4	0	0	37
NNE	2	28	11	0	0	0	41
NE	6	15	11	0	0	0	32
ENE	16	14	1	0	0	0	31
E	9	8	0	0	0	0	17
ESE	0	10	4	0	0	0	14
SE	6	15	8	0	0	0	29
SSE	2	39	25	1	0	0	67
S	0	10	23	22	5	0	60
SSW	1	3	13	29	10	0	56
SW	1	13	36	6	2	0	58
WSW	3	21	30	9	0	0	63
W	10	20	45	20	3	0	98
WNW	5	28	29	2	0	0	64
NW	3	18	25	1	0	0	47
NNW	3	18	8	8	0	0	37
Variable	0	0	0	0	0	0	0
Total	70	281	278	102	20	0	751

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 3
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	5	18	3	0	0	0	26
NNE	8	18	3	0	0	0	29
NE	8	8	1	0	0	0	17
ENE	11	21	1	0	0	0	33
E	13	11	0	0	0	0	24
ESE	4	19	1	0	0	0	24
SE	8	35	6	0	0	0	49
SSE	4	49	27	1	0	0	81
S	3	32	21	3	0	0	59
SSW	0	13	23	1	0	0	37
SW	1	25	37	8	0	0	71
WSW	6	20	10	2	0	0	38
W	11	29	14	2	0	0	56
WNW	17	34	3	0	0	0	54
NW	12	23	7	0	0	0	42
NNW	5	37	5	1	0	0	48
Variable	0	0	0	0	0	0	0
Total	116	392	162	18	0	0	688

Hours of calm in this stability class: 1
Hours of missing wind measurements in this stability class: 12
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	5	2	0	0	0	0	7
NNE	3	0	0	0	0	0	3
NE	1	0	0	0	0	0	1
ENE	0	1	0	0	0	0	1
E	11	2	0	0	0	0	13
ESE	6	4	0	0	0	0	10
SE	3	3	1	0	0	0	7
SSE	0	4	2	0	0	0	6
S	0	0	3	0	0	0	3
SSW	0	3	7	0	0	0	10
SW	3	5	7	0	0	0	15
WSW	7	4	0	0	0	0	11
W	22	14	0	0	0	0	36
WNW	17	10	0	0	0	0	27
NW	4	1	0	0	0	0	5
NNW	4	0	1	1	0	0	6
Variable	0	0	0	0	0	0	0
Total	86	53	21	1	0	0	161

Hours of calm in this stability class: 4
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	0	0	0	0	1
NNE	1	1	0	0	0	0	2
NE	2	1	0	0	0	0	3
ENE	2	0	0	0	0	0	2
E	4	0	0	0	0	0	4
ESE	1	1	0	0	0	0	2
SE	1	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	0	0	0	0	0	1
SW	3	1	2	0	0	0	6
WSW	3	1	0	0	0	0	4
W	15	0	0	0	0	0	15
WNW	4	0	0	0	0	0	4
NW	3	0	3	0	0	0	6
NNW	3	0	3	3	1	0	10
Variable	0	0	0	0	0	0	0
Total	43	6	8	3	1	0	61

Hours of calm in this stability class: 11
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	0	1	0	0	0	1
E	0	0	3	0	0	0	3
ESE	0	2	0	0	0	0	2
SE	0	1	2	3	0	0	6
SSE	0	0	7	5	0	0	12
S	0	3	4	4	2	1	14
SSW	0	5	5	5	5	1	21
SW	0	1	8	1	0	0	10
WSW	0	4	3	1	0	2	10
W	0	0	5	6	6	1	18
WNW	0	1	10	19	4	0	34
NW	0	0	0	6	2	0	8
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	18	48	50	19	5	140

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	1	3	0	0	5
ENE	0	2	1	0	0	0	3
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	1	2	0	0	3
SSE	0	2	0	0	0	0	2
S	0	2	2	4	0	2	10
SSW	0	1	1	1	1	3	7
SW	0	1	2	0	1	0	4
WSW	0	0	3	2	2	2	9
W	0	3	3	3	0	0	9
WNW	0	2	1	1	0	0	4
NW	0	2	0	2	1	0	5
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	16	15	18	5	7	61

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	1	0	0	0	1
NNE	0	0	1	0	0	0	1
NE	0	1	3	2	0	0	6
ENE	1	0	0	0	0	0	1
E	2	0	0	0	0	0	2
ESE	0	1	2	0	0	0	3
SE	0	1	2	1	0	0	4
SSE	0	0	0	0	0	0	0
S	0	1	1	1	0	4	7
SSW	0	1	0	1	2	1	5
SW	1	1	0	0	0	0	2
WSW	0	1	2	4	3	3	13
W	0	1	3	7	2	1	14
WNW	0	1	1	1	0	0	3
NW	0	0	2	1	0	0	3
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	4	9	18	18	7	9	65

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	2	4	21	6	3	0	36
NNE	0	7	23	8	0	0	38
NE	0	3	24	9	1	0	37
ENE	0	20	4	0	0	0	24
E	2	13	7	2	0	0	24
ESE	1	4	6	7	1	0	19
SE	0	5	23	14	10	0	52
SSE	0	6	18	6	10	6	46
S	0	2	8	23	18	30	81
SSW	0	2	13	12	17	8	52
SW	1	5	27	30	1	0	64
WSW	1	12	10	15	6	10	54
W	1	5	13	38	15	2	74
WNW	0	9	15	31	15	1	71
NW	4	8	11	12	14	2	51
NNW	0	6	10	9	6	1	32
Variable	0	0	0	0	0	0	0
Total	12	111	233	222	117	60	755

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

Period of Record: October - December2017
Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	1	6	10	6	0	0	23
NNE	2	8	5	2	0	0	17
NE	1	8	14	2	0	0	25
ENE	0	7	15	1	0	0	23
E	1	5	8	8	0	0	22
ESE	0	5	6	10	1	0	22
SE	1	2	18	17	1	0	39
SSE	1	4	30	29	4	0	68
S	0	4	21	23	12	3	63
SSW	0	5	16	46	24	0	91
SW	0	7	22	33	3	0	65
WSW	1	5	13	11	3	0	33
W	1	6	14	32	4	0	57
WNW	2	10	14	27	0	1	54
NW	2	9	31	13	2	0	57
NNW	0	6	30	6	0	0	42
Variable	0	0	0	0	0	0	0
Total	13	97	267	266	54	4	701

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2017
UNIT 1, 2 and ISFSI (Docket Numbers 50-456, 50-457 and 72-73)

Period of Record: October - December2017
Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	1	5	1	0	0	7
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	1	4	8	0	0	13
SE	0	2	6	5	0	0	13
SSE	0	2	1	5	0	0	8
S	0	0	6	1	0	0	7
SSW	1	0	3	4	0	0	8
SW	2	1	3	7	2	0	15
WSW	1	5	1	3	1	0	11
W	1	6	11	3	0	0	21
WNW	0	8	12	14	0	0	34
NW	1	5	11	3	0	0	20
NNW	0	5	1	1	1	0	8
Variable	0	0	0	0	0	0	0
Total	6	36	64	55	4	0	165

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

Period of Record: October - December2017
Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph) 1-3	4-7	8-12	13-18	19-24	> 24	Total
N	0	0	4	1	0	0	5
NNE	1	0	1	0	0	0	2
NE	0	0	1	0	0	0	1
ENE	1	0	0	0	0	0	1
E	2	0	0	0	0	0	2
ESE	1	1	2	0	0	0	4
SE	0	3	0	0	0	0	3
SSE	0	1	1	0	0	0	2
S	1	1	0	0	0	0	2
SSW	1	2	0	0	0	0	3
SW	1	4	3	1	0	0	9
WSW	0	3	1	1	0	0	5
W	0	3	7	0	0	0	10
WNW	0	1	2	0	0	0	3
NW	0	2	3	5	4	0	14
NNW	2	0	2	1	0	1	6
Variable	0	0	0	0	0	0	0
Total	10	21	27	9	4	1	72

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 249

WIND STABILITY CLASSES

Table C-4

Atmospheric Stability Classes

Description	Pasquill Stability Class	[a]σ_θ(degrees)	Temperature Change with Height(°C/100 m)
Extremely Unstable	A	>22.5	< -1.9
Moderately Unstable	B	17.5 to 22.5	-1.9 to -1.7
Slightly Unstable	C	12.5 to 17.5	-1.7 to -1.5
Neutral	D	7.5 to 12.5	-1.5 to -0.5
Slightly Stable	E	3.8 to 7.5	-0.5 to 1.5
Moderately Stable	F	2.1 to 3.8	1.5 to 4.0
Extremely Stable	G	0 to 2.1	>4.0

[a]σ_θ is the standard deviation of horizontal wind direction fluctuation over a period of 15 minutes to 1 hour.

From Regulatory Guide 1.21, Table 4B.

Atmospheric Stability Classes, Table C-4 from Braidwood ODCM.

APPENDIX D: ERRATA

There were no errors to previous reports identified in 2017.