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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. STN 50-456 and STN 50-457

Subject: 2016 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 2016 through December 2016.

This letter supersedes the previous letter dated April 28, 2016 as it had an incorrect date. The date should have been April 28, 2017. If you have any questions regarding this information, please contact Steven Reynolds, Regulatory Assurance Manager, at (815) 417-2800.

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

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)

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**BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)**

General Overview/Discussion

This report quantifies the radioactive gaseous, liquid, solid radwaste releases, and summarizes the local meteorological data for the period from January 01, 2016 through December 31, 2016. 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 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 on-line sampling media and batch sample media from all ODCM specified effluent pathways. These pathways include the Unit 1 and 2 Station Vent Stacks, Exelon Pond remediation, Turbine Building Remediation, Vacuum Breaker number one remediation, Condensate Polisher Sump, Waste Water Treatment facility, and Circulating Water Blowdown.

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.

Gaseous Effluents

Gaseous radioactive releases for the 2016 timeframe are captured in the tables titled, "Summation of All Releases" for Unit 1 and 2, respectively. Radioactive noble gases released for the timeframe totaled 1.50E-01 Curies. Releases of radioiodines and particulates totaled 7.11E-04 Curies. Gaseous tritium releases totaled 2.13E+02 Curies. Gaseous C-14 was calculated to total 8.84E+00 Curies. No gross alpha was detected in gaseous effluents.

Noble gases released in gaseous effluents resulted in a maximum total body dose of 1.15E-06 mrem, with a corresponding skin dose of 3.45E-06 mrem. The release of radioactive particulates, C-14, tritium, and radioiodines in gaseous effluents during the reporting period resulted in a total body dose to the maximally exposed hypothetical individual of 4.03E-01 mrem. The maximum hypothetical dose to any organ from radioactive particulates, C-14, tritium, and radioiodines was 1.86E+00 mrem.

Liquid Effluents

Liquid radioactive releases for the 2016 timeframe are captured in the table titled, "Liquid Effluents Supplemental Release Information" and in Appendix C, "Unit Specific Annual Effluent Summaries." One hundred eighteen (118) liquid batch releases occurred during the reporting period. Additionally, radioactive liquid effluents were continually being released through Circulating Water Blowdown. These discharges contained 3.39E+03 Curies of tritium and 2.13E-02 Curies of fission and activation products. The resultant maximum total body dose was 7.37E-02 mrem, with a corresponding organ dose of 7.38E-02 mrem.

40CFR190 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.

Exposures measured on the Independent Spent Fuel Storage Installation (ISFSI) and Onsite Steam Generator Storage Facility (OSGSF) dosimeters are statistically indiscernible from natural background. N-16 skyshine is not applicable to Pressurized Water Reactors. The resultant 40CFR190 dose calculated for a member of the public is 1.93E+00 mrem for 2016.

Meteorological Data

The Braidwood Station meteorological monitoring program produced 52,584 hours of valid data out of a possible 52,704 parameter hours during 2016 (366 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-Northwest (10.74%) and fell into the 3.6 - 7.5 mph wind speed class (40.34%). 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 0.12% of the time. Stability based on the 199 - 30 ft. differential temperature most frequently fell into the slightly stable classification (35.77%).

The following are the maximum annual calculated cumulative offsite doses resulting from Braidwood Station airborne releases in 2016 based on concurrent meteorological data:

Unit 1:

<u>Dose</u>	<u>Maximum Value</u>	<u>Sector Affected</u>
gamma air ⁽¹⁾	1.140 x10 ⁻⁶ mrad	North
beta air ⁽²⁾	3.110 x10 ⁻⁶ mrad	North
whole body ⁽³⁾	2.630 x10 ⁻¹ mrem	North
skin ⁽⁴⁾	1.890 x 10 ⁻⁶ mrem	North
organ ⁽⁵⁾ (child-bone)	1.200 x10 ⁺⁰ mrem	North

Unit 1 Compliance Status

10 CFR 50 Appendix I	Yearly Objective	% of Appendix I
gamma air	10.0 mrad	0.00E+00
beta air	20.0 mrad	0.00E+00
whole body	5.0 mrem	5.26E+00
skin	15.0 mrem	0.00E+00
organ	15.0 mrem	8.00E+00

Unit 2:

<u>Dose</u>	<u>Maximum Value</u>	<u>Sector Affected</u>
gamma air ⁽¹⁾	1.140 x10 ⁻⁶ mrad	North
beta air ⁽²⁾	3.110 x10 ⁻⁶ mrad	North
whole body ⁽³⁾	2.740 x10 ⁻¹ mrem	North
skin ⁽⁴⁾	1.890 x10 ⁻⁶ mrem	North
organ ⁽⁵⁾ (child-bone)	1.250 x10 ⁺⁰ mrem	North

Unit 2 Compliance Status

10 CFR 50 Appendix I	Yearly Objective	% of Appendix I
gamma air	10.0 mrad	0.00E+00
beta air	20.0 mrad	0.00E+00
whole body	5.0 mrem	5.48E+00
skin	15.0 mrem	0.00E+00
organ	15.0 mrem	8.33E+00

-
- (1) Gamma Air Dose – GASPAR II, NUREG-0597
(2) Beta Air Dose – GASPAR II, NUREG-0597
(3) Whole Body Dose – GASPAR II, NUREG-0597
(4) Skin Dose – GASPAR II, NUREG-0597
(5) Inhalation and Food Pathways Dose – GASPAR II, NUREG-0597

Offsite Ambient Radiation Measurements

It is estimated that the average radiation dose received by an individual in the United States is about 360 mrem/yr from the sources listed below. These figures are based on data in Table 8.1 of NCRP 93. The table includes the following data:

<u>Source</u>	<u>Average Individual Dose (mrem/yr)</u>
Natural sources (average in U.S.)	300
Medical (whole-body equivalent)	53
Nuclear fuel cycle	0.05
Other	<u>~7</u>
Total	About 360

The radiological effects of nuclear power station operation on the environment are characterized as "usually so small that they are masked by normal fluctuations in natural background sources and by the normal uncertainties of the measurement process." Review of the Braidwood Optically Stimulated Luminescent Dosimetry (OSLD) data yielded no measurable increase above the normal fluctuation in natural background levels.

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 3.87E+02 cubic meters of solid waste was shipped offsite containing approximately 2.73E+01 Curies during the 2016 reporting period.

RADIOACTIVE EFFLUENT RELEASE REPORT

January - December 2016

Facility: BRAIDWOOD NUCLEAR POWER STATION

Licensee: EXELON GENERATION COMPANY, LLC

1. Regulatory Limits

a. For 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 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 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 are 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, and gross alpha analysis by an offsite vendor. The vendor supplied data are utilized in conjunction with the volume of air released through the Auxiliary Building ventilation to quantify Sr-89/90, Fe-55, 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 times 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. Very small 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 very large leaks (1000 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 is assessed for continuous gaseous effluents through the use of 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 and Fe-55. 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

Estimated total error is calculated periodically and communicated as part of the Effluent and Waste Disposal Summaries.

i. Less than the 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.

5. Batch Releases

a. Liquid

LIQUID EFFLUENTS
SUPPLEMENTAL RELEASE INFORMATION

UNIT COMMON

A. Batch Release	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr.	Total
1. Total Number of Batch Releases	12	20	44	42	118
2. Total Time Period for Batch Releases (minutes)	3.58E+04	5.34E+04	4.03E+04	4.95E+04	1.79E+05
3. Maximum Time Period for a Batch Release (minutes)	7.25E+03	8.79E+03	5.74E+03	1.98E+03	8.79E+03
4. Average Time Period for a Batch Release (minutes)	2.98E+03	2.67E+03	9.15E+02	1.18E+03	1.52E+03
5. Minimum Time Period for a Batch Release (minutes)	1.32E+03	2.01E+02	7.60E+01	1.53E+02	7.60E+01
6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream (liters/min)	1.33E+07	7.96E+06	1.29E+07	1.07E+07	1.12E+07

b. Gaseous

**GASEOUS EFFLUENTS
SUPPLEMENTAL RELEASE INFORMATION**

UNIT COMMON

A. Batch Release	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr.	Total
1. Total Number of Batch Releases	3	2	6	9	20
2. Total Time Period for Batch Releases (minutes)	1.15E+02	9.59E+02	8.05E+02	1.78E+03	3.66E+03
3. Maximum Time Period for a Batch Release (minutes)	5.30E+01	4.97E+02	1.60E+02	8.80E+02	8.80E+02
4. Average Time Period for a Batch Release (minutes)	3.83E+01	4.80E+02	1.34E+02	1.98E+02	2.12E+02
5. Minimum Time Period for a Batch Release (minutes)	3.00E+01	4.62E+02	1.02E+02	9.00E+01	3.00E+01

UNIT ONE

A. Batch Release	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr.	Total
1. Total Number of Batch Releases	30	31	36	20	117
2. Total Time Period for Batch Releases (minutes)	4.18E+03	2.25E+03	1.38E+04	1.52E+03	2.18E+04
3. Maximum Time Period for a Batch Release (minutes)	2.77E+03	5.39E+02	4.00E+03	4.21E+02	4.00E+03
4. Average Time Period for a Batch Release (minutes)	1.39E+02	7.27E+01	3.84E+02	7.60E+01	1.68E+02
5. Minimum Time Period for a Batch Release (minutes)	2.50E+01	2.90E+01	1.40E+01	2.90E+01	1.40E+01

UNIT TWO

A. Batch Release	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr.	Total
1. Total Number of Batch Releases	15	15	18	18	66
2. Total Time Period for Batch Releases (minutes)	5.74E+02	6.88E+02	7.94E+03	1.23E+03	1.04E+04
3. Maximum Time Period for a Batch Release (minutes)	4.70E+01	1.98E+02	1.48E+03	6.02E+02	1.48E+03
4. Average Time Period for a Batch Release (minutes)	3.83E+01	4.59E+01	4.41E+02	6.82E+01	1.48E+02
5. Minimum Time Period for a Batch Release (minutes)	1.80E+01	2.10E+01	2.00E+01	2.60E+01	1.80E+01

6. Abnormal Releases

a. Liquid

Number of abnormal releases	0
Total Activity (Ci) released	0

b. Gaseous

Number of abnormal releases	1
Total Activity (Ci) released	8.02E-04

On 9/26/2016 during the shutdown and cool-down of Unit 1, the Gland Steam system rupture disc ruptured. This abnormal gaseous release has been documented in the station's offsite dose calculation software, OpenEMS. The activity released and the resulting calculated dose are included in the applicable totals in this report and were well within regulatory limits. IR 2719924

7. ODCM Revisions

There were no changes to the Braidwood Station ODCM in 2016.

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
GAS RELEASES
UNIT 1 (Docket Number 50-456)
SUMMATION OF ALL RELEASES

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error%
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A. Fission and Activation Gas Releases

1. Total Release Activity	Ci	<LLD	2.28E-03	4.78E-02	2.49E-02	7.59E+00
2. Average Release Rate	μCi/sec	N/A	2.90E-04	6.01E-03	3.13E-03	
3. Percent of ODCM Limit – gamma	%	N/A	3.63E-07	8.96E-06	4.22E-06	
4. Percent of ODCM Limit - beta	%	N/A	8.80E-07	1.95E-05	9.81E-06	

B. Iodine Releases

1. Total Iodine	Ci	<LLD	2.38E-08	2.30E-04	<LLD	3.32E+01
2. Average Release Rate	μCi/sec	N/A	3.02E-09	2.89E-05	N/A	
3. Percent of ODCM Limit	%	N/A	2.47E-09	8.04E-02	N/A	

C. Particulate (> 8 day half-life) Releases

1. Particulates with half-lives > 8 days	Ci	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	N/A	
3. Percent of ODCM Limit	%	N/A	N/A	N/A	N/A	
4. Gross Alpha Radioactivity	Ci	N/A	N/A	N/A	N/A	

D. Tritium Releases

1. Total Release Activity	Ci	1.91E+01	1.35E+01	3.26E+01	3.62E+01	8.07E+00
2. Average Release Rate	μCi/sec	2.43E+00	1.72E+00	4.10E+00	4.55E+00	
3. Percent of ODCM Limit	%	3.72E-02	2.63E-02	6.33E-02	7.03E-02	

E. Gross Alpha Releases

1. Total Release Activity	Ci	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	N/A	
3. Percent of ODCM limit	%	N/A	N/A	N/A	N/A	

F. Carbon-14 Releases

1. Total Release Activity	Ci	1.11E+00	1.26E+00	1.02E+00	9.39E-01	
2. Average Release Rate	μCi/sec	1.42E-01	1.61E-01	1.29E-01	1.18E-01	

Note: LLD Values are included in Appendix A of this report.

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
GAS RELEASES
UNIT 1 (Docket Number 50-456)
CONTINUOUS MODE AND BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
A. Fission Gases									
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	2.28E-03	4.59E-02	2.45E-02
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.90E-03	3.67E-04
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	2.28E-03	4.78E-02	2.49E-02
B. Iodines									
I-131	Ci	<LLD	<LLD	1.08E-05	<LLD	<LLD	<LLD	2.17E-07	<LLD
I-132	Ci	<LLD	<LLD	2.14E-04	<LLD	<LLD	2.38E-08	4.15E-06	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.43E-07	<LLD
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	2.25E-04	<LLD	<LLD	2.38E-08	4.51E-06	<LLD
C. Particulates									
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
GAS RELEASES
UNIT 1 (Docket Number 50-456)
CONTINUOUS MODE AND BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Nd-147	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
D. Tritium	Ci	1.81E+01	1.32E+01	3.22E+01	3.60E+01	9.99E-01	2.87E-01	3.31E-01	1.08E-01
E. Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
F. Carbon-14	Ci	1.11+00	1.26E+00	1.02E+00	9.39E-01	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
GAS RELEASES
UNIT 2 (Docket Number 50-457)
SUMMATION OF ALL RELEASES

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error%
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A. Fission and Activation Gas Releases

1. Total Activity Released	Ci	<LLD	2.28E-03	4.78E-02	2.49E-02	7.59E+00
2. Average Release Rate	μCi/sec	N/A	2.90E-04	6.01E-03	3.13E-03	
3. Percent of ODCM Limit - gamma	%	N/A	3.63E-07	8.96E-06	4.22E-06	
4. Percent of ODCM Limit - beta	%	N/A	8.80E-07	1.95E-05	9.81E-06	

B. Iodine Releases

1. Total Iodine	Ci	<LLD	<LLD	4.81E-04	<LLD	3.32E+01
2. Average Release Rate	μCi/sec	N/A	N/A	6.05E-05	N/A	
3. Percent of ODCM Limit	%	N/A	N/A	5.01E-05	N/A	

C. Particulate (> 8 day half-life) Releases

1. Particulates with half-lives > 8 days	Ci	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	N/A	
3. Percent of ODCM Limit	%	N/A	N/A	N/A	N/A	
4. Gross Alpha Radioactivity	Ci	N/A	N/A	N/A	N/A	

D. Tritium Releases

1. Total Release Activity	Ci	1.52E+01	1.67E+01	4.76E+01	3.21E+01	8.07E+00
2. Average Release Rate	μCi/sec	1.93E+00	2.13E+00	5.98E+00	4.04E+00	
3. Percent of ODCM Limit	%	2.95E-02	3.25E-02	9.25E-02	6.25E-02	

E. Gross Alpha Releases

1. Total Release Activity	Ci	<LLD	<LLD	<LLD	<LLD	1.98E+01
2. Average Release Rate	μCi/sec	N/A	N/A	N/A	N/A	
3. Percent of ODCM Limit	%	N/A	N/A	N/A	N/A	

F. Carbon-14 Releases

1. Total Release Activity	Ci	1.17E+00	1.12E+00	1.11E+00	1.11E+00	
2. Average Release Rate	μCi/sec	1.49E-01	1.42E-01	1.39E-01	1.40E-01	

Note: LLD Values are included in Appendix A of this report.

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
GAS RELEASES
UNIT 2 (Docket Number 50-457)
CONTINUOUS MODE AND BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
1. Fission Gases									
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	2.28E-03	4.59E-02	2.45E-02
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.90E-03	3.67E-04
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	2.28E-03	4.78E-02	2.49E-02
2. Iodines									
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-132	Ci	<LLD	<LLD	4.81E-04	<LLD	<LLD	<LLD	6.75E-09	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	8.11E-10	<LLD
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	4.81E-04	<LLD	<LLD	<LLD	7.56E-09	<LLD
3. Particulates									
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 2016
 GAS RELEASES
 UNIT 2 (Docket Number 50-457)
 CONTINUOUS MODE AND BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Nd-147	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for Period	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
4. Tritium	Ci	1.51E+01	1.66E+01	4.70E+01	3.21E+01	8.44E-02	7.98E-02	5.31E-01	5.05E-02
5. Gross Alpha	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
6. Carbon-14	Ci	1.17E+00	1.12E+00	1.11E+00	1.11E+00	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
LIQUID RELEASES
UNIT 1 (Docket Number 50-456)
SUMMATION OF ALL RELEASES

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error %
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A. Fission and Activation Products

1. Total Release	Ci	3.05E-04	3.89E-05	9.07E-03	5.46E-03	2.64E+00
2. Average Diluted Concentration	μCi/ml	4.18E-11	7.20E-12	1.13E-09	6.58E-10	
3. Percent of applicable limit	%	*	*	*	*	

B. Tritium

1. Total Release	Ci	1.45E+02	2.84E+02	8.16E+02	4.50E+02	5.85E+00
2. Average Diluted Concentration	μCi/ml	1.99E-05	5.26E-05	1.01E-04	5.43E-05	
3. % of Limit (1E-2 μCi/ml)	%	1.99E-01	5.26E-01	1.01E+00	5.43E-01	

C. Dissolved Noble Gases

1. Total Release	Ci	<LLD	<LLD	7.72E-07	3.80E-05	2.64E+00
2. Average Diluted Concentration	μCi/ml	N/A	N/A	9.58E-14	4.59E-12	
3. % of Limit (2E-4 μCi/ml)	%	N/A	N/A	4.79E-08	2.30E-06	

D. Gross Alpha

A. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	1.47E+01
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E. Volume of Waste Released (prior to dilution)	liters	6.11E+09	3.87E+09	6.13E+09	6.10E+09	
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F. Volume of Dilution Water	liters	7.29E+09	5.40E+09	8.06E+09	8.29E+09	
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Note: LLD Values are included in Appendix A of this report.

Note: % Limit Values are included in Appendix C 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.

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
LIQUID RELEASES
UNIT 1 (Docket Numbers 50-456)
CONTINUOUS MODE & BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Be-7	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.68E-04	9.94E-04
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.92E-04	5.64E-05
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.51E-03	1.70E-03
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.55E-05	5.88E-06
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	1.61E-04	6.71E-06	7.29E-04	7.32E-04
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.63E-05	1.13E-05
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	1.06E-04	3.02E-05	4.54E-03	1.43E-03
Ni-63	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.08E-04	8.64E-05
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.39E-05	1.15E-05
Nb-97	Ci	<LLD	<LLD	<LLD	<LLD	8.06E-06	<LLD	1.85E-04	1.19E-04
Zr-97	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	5.55E-06	<LLD	1.45E-04	1.09E-04
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.53E-05	1.40E-05
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	2.43E-05	<LLD	3.04E-04	1.58E-04
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	2.05E-06	1.39E-05	<LLD
H-3	Ci	2.10E+01	2.10E+01	1.29E+02	5.45E+01	1.24E+02	2.63E+02	6.87E+02	3.96E+02
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.46E-05
Ba-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
LIQUID RELEASES
UNIT 1 (Docket Numbers 50-456)
CONTINUOUS MODE & BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	7.72E-07	3.80E-05
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-139	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-125m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	4.14E-06	<LLD
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
W-187	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-129m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	2.10E+01	2.10E+01	1.29E+02	5.45E+01	1.24E+02	2.63E+02	6.87E+02	3.96E+02

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
LIQUID RELEASES
UNIT 2 (Docket Number 50-457)
SUMMATION OF ALL RELEASES

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Est. Total Error %
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A. Fission and Activation Products

1. Total Release	Ci	3.05E-04	3.89E-05	9.07E-03	5.46E-03	2.64E+00
2. Average Diluted Concentration	μCi/ml	4.18E-11	7.20E-12	1.13E-09	6.58E-10	
3. Percent of applicable limit	%	*	*	*	*	

B. Tritium

1. Total Release	Ci	1.45E+02	2.84E+02	8.16E+02	4.50E+02	5.85E+00
2. Average Diluted Concentration	μCi/ml	1.99E-05	5.26E-05	1.01E-04	5.43E-05	
3. % of Limit (1E-2 μCi/ml)	%	1.99E-01	5.26E-01	1.01E+00	5.43E-01	

C. Dissolved Noble Gases

1. Total Activity Released	Ci	<LLD	<LLD	7.72E-07	3.80E-05	2.64E+00
2. Average Diluted Concentration	μCi/ml	N/A	N/A	9.58E-14	4.59E-12	
3. % of Limit (2E-4 μCi/ml)	%	N/A	N/A	4.79E-08	2.30E-08	

D. Gross Alpha

1. Total Release	Ci	<LLD	<LLD	<LLD	<LLD	1.47E+01
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E. Volume of Waste Released (prior to dilution)	liters	6.11E+09	3.87E+09	6.13E+09	6.10E+09	
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F. Volume of Dilution Water	liters	7.29E+09	5.40E+09	8.06E+09	8.29E+09	
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Note: LLD Values are included in Appendix A of this report.

Note: % Limit Values are included in Appendix C of this report.

*This limit is equal to 10 times the concentration values in Appendix B, Table 2, Column 2 to 10CFR20.1001-2402, 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.

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
LIQUID RELEASES
UNIT 2 (Docket Numbers 50-457)
CONTINUOUS MODE & BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Be-7	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.68E-04	9.94E-04
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.92E-04	5.64E-05
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.51E-03	1.70E-03
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.55E-05	5.88E-06
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	1.61E-04	6.71E-06	7.29E-04	7.32E-04
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.63E-05	1.13E-05
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	1.06E-04	3.02E-05	4.54E-03	1.43E-03
Ni-63	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.08E-04	8.64E-05
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.39E-05	1.15E-05
Nb-97	Ci	<LLD	<LLD	<LLD	<LLD	8.06E-06	<LLD	1.85E-04	1.19E-04
Zr-97	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	5.55E-06	<LLD	1.45E-04	1.09E-04
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.53E-05	1.40E-05
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	2.43E-05	<LLD	3.04E-04	1.58E-04
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-141	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-123m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	2.05E-06	1.39E-05	<LLD
H-3	Ci	2.10E+01	2.10E+01	1.29E+02	5.45E+01	1.24E+02	2.63E+02	6.87E+02	3.96E+02
Ba-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.46E-05
Ba-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 2016
LIQUID RELEASES
UNIT 2 (Docket Numbers 50-456)
CONTINUOUS MODE & BATCH MODE

Nuclides Released	Unit	Continuous Mode				Batch Mode			
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	7.72E-07	3.80E-05
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ba-139	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-125m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	4.14E-06	<LLD
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
W-187	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Te-129m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	2.10E+01	2.10E+01	1.29E+02	5.45E+01	1.24E+02	2.63E+02	6.87E+02	3.96E+02

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
SOLID RADIOACTIVE WASTE
UNIT 1 AND 2 COMBINED (Docket Numbers 50-456 and 50-457)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

BRAIDWOOD NUCLEAR POWER STATION
 RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
 SOLID RADIOACTIVE WASTE
 UNIT 1 AND 2 COMBINED (Docket Numbers 50-456 and 50-457)

A. Solid Waste Shipped Offsite for Burial or Disposal (Not irradiated fuel)

1. Types of Waste

Types of Waste	Total Quantity (m ³)	Total Activity (Ci)	Period	Est. Total Error %
a. Spent resins, filter sludges, evaporator bottoms, etc	1.08E+02	2.71E+01	Jan - Dec 2016	25
b. Dry compressible waste, contaminated equip, etc	2.58E+02	2.08E-01	Jan - Dec 2016	25
c. Irradiated components, control rods, etc	0.00E+00	0.00E+00	Jan - Dec 2016	25
d. Other (oil, reverse osmosis reject water, soil, Lagoon sediment)	2.08E+01	1.63E-02	Jan - Dec 2016	25

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

Major Nuclide Composition		%
a.	H-3	4.56E+01
	Ni-63	2.62E+01
	Co-60	1.02E+01
	Fe-55	9.65E+00
	Cs-137	1.99E+00
	Co-58	1.72E+00
	C-14	1.30E+00
b.	H-3	2.93E+01
	Fe-55	2.15E+01
	Ni-63	1.47E+01
	Co-60	1.37E+01
	Co-58	1.33E+01
	Nb-95	2.37E+00
	Zr-95	1.32E+00
	Cr-51	1.05E+00
c.	N/A	N/A

BRAIDWOOD NUCLEAR POWER STATION
 RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
 SOLID RADIOACTIVE WASTE
 UNIT 1 AND 2 COMBINED (Docket Numbers 50-456 and 50-457)

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

Major Nuclide Composition		%
d.	Fe-55	3.02E+01
	Ni-63	2.06E+01
	Co-60	1.93E+01
	Co-58	1.90E+01
	Nb-95	3.45E+00
	Zr-95	1.90E+00
	Cr-51	1.55E+00
	Mn-54	1.29E+00

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
7	Hittman Transportation	Energy Solutions-Bear Creek Facility 1560 Bear Creek Rd., Oak Ridge TN
6	Hittman Transportation	Energy Solutions Services – Gallaher Rd, 628 Gallaher Rd., Kingston, TX
5	Hittman Transportation	EnergySolutions LLC. Clive Disposal Site-Containerized Waste Facility Clive Utah

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
SOLID RADIOACTIVE WASTE
UNIT 1 AND 2 COMBINED (Docket Numbers 50-456 and 50-457)

B. Irradiated Fuel Shipments

1. None

C. Irradiated Fuel Shipments (disposition)

No irradiated fuel shipments were dispositioned at Braidwood during the time period from January through December 2016.

D. Changes to the Process Control Program (PCP)

The Braidwood Station PCP was not revised in 2016.

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)

WIND DIRECTION AND STABILITY CLASSES

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
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	1	1	0	0	0	2
E	0	2	0	0	0	0	2
ESE	0	1	3	2	0	0	6
SE	0	3	3	0	0	0	6
SSE	0	1	0	0	0	0	1
S	0	0	0	2	0	0	2
SSW	0	0	0	4	1	0	5
SW	0	0	2	2	0	0	4
WSW	0	1	2	3	0	1	7
W	0	1	2	8	1	4	16
WNW	0	2	14	3	0	0	19
NW	0	6	12	2	0	0	20
NNW	0	1	3	1	0	0	5
Variable	0	0	0	0	0	0	0
Total	0	19	43	27	2	5	96

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	1	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	1
ENE	0	5	2	0	0	0	7
E	0	3	0	0	0	0	3
ESE	0	0	0	0	0	0	0
SE	0	2	0	0	0	0	2
SSE	0	3	1	0	0	0	4
S	0	1	1	3	0	0	5
SSW	0	3	3	1	0	0	7
SW	0	2	3	0	2	0	7
WSW	0	2	4	0	1	3	10
W	0	3	3	0	1	0	7
WNW	0	2	4	1	0	0	7
NW	0	5	3	0	0	0	8
NNW	0	0	3	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	0	31	29	5	4	3	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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	1	0	0	0	2
NNE	0	0	1	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	4	0	0	0	0	4
E	0	2	0	0	0	0	2
ESE	0	2	1	0	0	0	3
SE	0	3	1	3	0	0	7
SSE	0	1	0	0	0	0	1
S	0	1	2	2	0	0	5
SSW	0	0	2	1	3	0	6
SW	0	1	5	3	2	0	11
WSW	0	5	9	1	1	0	16
W	0	2	2	2	1	0	7
WNW	0	6	11	4	0	0	21
NW	0	3	2	1	0	0	6
NNW	1	1	5	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	1	32	42	17	7	0	99

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	5	21	14	6	1	0	47
NNE	3	22	7	7	1	0	40
NE	6	22	14	1	0	0	43
ENE	8	16	18	0	0	0	42
E	13	19	0	2	0	0	34
ESE	2	12	12	2	0	0	28
SE	4	15	21	5	0	0	45
SSE	1	21	16	0	0	0	38
S	0	10	31	13	0	0	54
SSW	0	3	12	26	13	0	54
SW	1	8	25	15	2	0	51
WSW	4	15	17	14	1	0	51
W	6	22	24	28	5	1	86
WNW	7	42	96	3	0	0	148
NW	9	44	45	6	0	0	104
NNW	5	22	48	19	2	0	96
Variable	0	0	0	0	0	0	0
Total	74	314	400	147	25	1	961

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	13	15	1	0	0	0	29
NNE	11	14	2	0	0	0	27
NE	3	2	1	0	0	0	6
ENE	20	18	1	0	0	0	39
E	21	13	3	1	0	0	38
ESE	4	31	3	1	0	0	39
SE	3	32	14	3	0	0	52
SSE	0	35	21	4	0	0	60
S	2	17	65	19	0	0	103
SSW	1	10	40	41	5	0	97
SW	5	26	52	5	0	0	88
WSW	5	14	20	4	0	0	43
W	6	28	8	5	1	0	48
WNW	11	39	18	1	1	0	70
NW	13	20	3	2	0	0	38
NNW	9	30	1	0	0	0	40
Variable	0	0	0	0	0	0	0
Total	127	344	253	86	7	0	817

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	5	0	0	0	0	0	5
NNE	3	1	0	0	0	0	4
NE	7	1	0	0	0	0	8
ENE	13	0	0	0	0	0	13
E	14	0	0	0	0	0	14
ESE	7	1	0	0	0	0	8
SE	0	3	0	0	0	0	3
SSE	2	0	0	0	0	0	2
S	1	0	0	0	0	0	1
SSW	1	0	5	1	0	0	7
SW	0	0	1	1	0	0	2
WSW	2	4	0	0	0	0	6
W	5	12	0	0	0	0	17
WNW	3	5	0	0	0	0	8
NW	5	1	0	0	0	0	6
NNW	3	0	0	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	71	28	6	2	0	0	107

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

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

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	0	1	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	1	2	0	0	0	3
E	0	2	0	0	0	0	2
ESE	0	0	0	2	3	0	5
SE	0	1	5	0	0	0	6
SSE	0	1	0	0	0	0	1
S	0	0	0	0	2	0	2
SSW	0	0	0	1	1	4	6
SW	0	0	0	2	1	0	3
WSW	0	0	4	1	2	1	8
W	0	2	1	4	6	5	18
WNW	0	0	7	7	8	1	23
NW	0	0	8	6	2	0	16
NNW	0	0	0	1	1	0	2
Variable	0	0	0	0	0	0	0
Total	0	7	27	25	26	11	96

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	0	1	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	1
ENE	0	4	3	0	0	0	7
E	0	1	2	0	0	0	3
ESE	0	1	0	0	0	0	1
SE	0	1	2	0	0	0	3
SSE	0	4	0	0	0	0	4
S	0	0	1	0	3	0	4
SSW	0	1	4	1	1	2	9
SW	0	0	4	1	0	0	5
WSW	0	1	4	0	0	4	9
W	0	0	4	3	0	1	8
WNW	0	3	3	1	2	0	9
NW	0	1	2	4	1	0	8
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	0	17	30	11	7	7	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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	1	0	0	0	1
NNE	0	0	0	1	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	3	2	0	0	0	5
E	0	2	0	0	0	0	2
ESE	0	1	0	1	0	0	2
SE	0	0	3	0	3	0	6
SSE	0	0	1	1	0	0	2
S	0	2	0	2	1	1	6
SSW	0	2	0	1	1	5	9
SW	0	2	2	7	0	0	11
WSW	0	2	8	3	0	1	14
W	0	0	2	5	1	1	9
WNW	0	3	4	7	5	0	19
NW	0	2	2	5	1	1	11
NNW	0	1	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	0	20	25	33	12	9	99

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4	8	27	4	4	2	49
NNE	2	7	13	10	4	4	40
NE	5	8	19	14	2	0	48
ENE	5	10	9	7	0	0	31
E	2	7	17	3	0	2	31
ESE	1	3	8	12	9	2	35
SE	0	6	16	10	4	3	39
SSE	3	3	15	16	2	0	39
S	1	3	8	23	15	5	55
SSW	0	2	5	16	14	25	62
SW	0	1	17	13	7	1	39
WSW	2	9	13	16	8	5	53
W	3	12	15	26	16	12	84
WNW	4	25	21	72	38	1	161
NW	2	16	20	58	22	1	119
NNW	3	7	20	29	11	6	76
Variable	0	0	0	0	0	0	0
Total	37	127	243	329	156	69	961

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	13	12	3	0	0	28
NNE	2	3	13	3	0	0	21
NE	0	6	4	1	0	0	11
ENE	2	19	15	1	0	0	37
E	1	10	16	5	2	1	35
ESE	0	5	15	10	3	1	34
SE	0	5	22	21	4	2	54
SSE	0	3	25	29	3	4	64
S	1	3	9	50	37	7	107
SSW	0	2	13	48	35	16	114
SW	1	10	16	32	6	0	65
WSW	0	8	9	24	4	3	48
W	1	6	18	18	3	4	50
WNW	1	6	22	30	1	2	62
NW	1	7	29	5	1	3	46
NNW	1	13	23	4	0	0	41
Variable	0	0	0	0	0	0	0
Total	11	119	261	284	99	43	817

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	2	1	4	1	0	0	8
NNE	1	3	2	1	0	0	7
NE	1	3	3	0	0	0	7
ENE	1	6	4	0	0	0	11
E	1	2	6	1	0	0	10
ESE	0	3	7	2	0	0	12
SE	0	0	3	1	0	0	4
SSE	1	2	2	0	0	0	5
S	0	0	0	0	0	0	0
SSW	0	0	1	0	2	2	5
SW	0	0	0	2	2	0	4
WSW	1	1	1	1	0	0	4
W	0	1	6	2	0	0	9
WNW	0	0	7	8	0	0	15
NW	1	0	2	3	0	0	6
NNW	0	0	0	0	0	0	0
Variable	0	0	0	0	0	0	0
Total	9	22	48	22	4	2	107

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: 14

Braidwood Generating Station

Period of Record: January - March 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

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

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: 14

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	2	7	0	0	0	9
NNE	0	0	7	0	0	0	7
NE	1	1	11	1	0	0	14
ENE	1	7	1	0	0	0	9
E	1	13	1	0	0	0	15
ESE	1	15	7	0	0	0	23
SE	2	16	11	0	0	0	29
SSE	1	14	2	0	0	0	17
S	1	13	8	3	0	0	25
SSW	0	1	7	3	2	0	13
SW	0	3	8	5	1	0	17
WSW	0	7	12	3	0	0	22
W	0	3	17	2	0	0	22
WNW	0	15	28	3	0	0	46
NW	1	11	8	0	0	0	20
NNW	0	6	17	2	0	0	25
Variable	0	0	0	0	0	0	0
Total	9	127	152	22	3	0	313

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	1	0	0	0	4
NNE	0	2	6	0	0	0	8
NE	0	4	8	0	0	0	12
ENE	0	1	0	0	0	0	1
E	1	7	0	0	0	0	8
ESE	0	7	0	0	0	0	7
SE	0	7	1	0	0	0	8
SSE	0	0	0	0	0	0	0
S	1	7	1	0	0	0	9
SSW	1	4	3	0	0	0	8
SW	0	5	1	2	1	0	9
WSW	1	2	1	0	0	0	4
W	0	4	2	0	0	0	6
WNW	0	6	13	2	0	0	21
NW	0	2	3	0	0	0	5
NNW	0	0	1	2	0	0	3
Variable	0	0	0	0	0	0	0
Total	4	61	41	6	1	0	113

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	8	3	0	0	0	11
NNE	0	7	4	0	0	0	11
NE	0	5	8	0	0	0	13
ENE	1	1	2	0	0	0	4
E	2	5	0	0	0	0	7
ESE	0	4	1	0	0	0	5
SE	1	10	3	0	0	0	14
SSE	0	2	3	0	0	0	5
S	0	2	5	1	0	0	8
SSW	0	4	2	3	0	0	9
SW	0	1	2	4	1	0	8
WSW	0	1	3	0	0	0	4
W	1	4	4	0	0	0	9
WNW	0	5	5	2	0	0	12
NW	1	2	1	2	1	0	7
NNW	0	4	3	1	0	0	8
Variable	0	0	0	0	0	0	0
Total	6	65	49	13	2	0	135

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4	21	26	1	0	0	52
NNE	2	24	23	0	0	0	49
NE	2	54	41	3	0	0	100
ENE	8	35	24	0	0	0	67
E	5	15	7	0	0	0	27
ESE	1	13	9	0	0	0	23
SE	2	20	10	2	0	0	34
SSE	4	25	9	5	0	0	43
S	1	22	23	9	0	0	55
SSW	0	12	19	17	1	0	49
SW	0	7	28	9	3	0	47
WSW	1	15	9	0	0	0	25
W	1	7	10	1	1	0	20
WNW	5	13	18	3	3	0	42
NW	4	15	15	5	0	0	39
NNW	2	16	9	4	0	0	31
Variable	0	0	0	0	0	0	0
Total	42	314	280	59	8	0	703

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	10	5	2	0	0	0	17
NNE	6	8	0	0	0	0	14
NE	6	14	0	0	0	0	20
ENE	23	30	0	0	0	0	53
E	29	18	1	0	0	0	48
ESE	12	43	6	0	0	0	61
SE	11	20	6	0	0	0	37
SSE	4	26	9	0	0	0	39
S	1	28	31	1	0	0	61
SSW	1	9	15	2	0	0	27
SW	3	24	27	4	0	0	58
WSW	3	23	5	1	0	0	32
W	8	20	5	1	0	0	34
WNW	18	26	11	0	0	1	56
NW	13	9	6	0	0	0	28
NNW	6	13	5	1	0	0	25
Variable	0	0	0	0	0	0	0
Total	154	316	129	10	0	1	610

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4	1	0	0	0	0	5
NNE	6	0	0	0	0	0	6
NE	3	0	0	0	0	0	3
ENE	9	1	0	0	0	0	10
E	29	5	0	0	0	0	34
ESE	21	11	0	0	0	0	32
SE	4	2	0	0	0	0	6
SSE	8	3	0	0	0	0	11
S	3	0	0	0	0	0	3
SSW	3	4	0	0	0	0	7
SW	1	2	1	0	0	0	4
WSW	7	12	0	0	0	0	19
W	16	6	0	0	0	0	22
WNW	18	0	0	0	0	0	18
NW	13	1	0	0	0	0	14
NNW	2	0	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	147	48	1	0	0	0	196

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

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	3	0	0	0	0	0	3
NNE	2	0	0	0	0	0	2
NE	8	0	0	0	0	0	8
ENE	4	0	0	0	0	0	4
E	14	3	0	0	0	0	17
ESE	6	0	0	0	0	0	6
SE	3	0	0	0	0	0	3
SSE	0	0	0	0	0	0	0
S	2	0	0	0	0	0	2
SSW	1	0	0	0	0	0	1
SW	1	1	0	0	0	0	2
WSW	7	5	0	0	0	0	12
W	15	2	0	0	0	0	17
WNW	13	1	0	0	0	0	14
NW	7	0	0	0	0	0	7
NNW	1	0	0	0	0	0	1
Variable	0	0	0	0	0	0	0
Total	87	12	0	0	0	0	99

Hours of calm in this stability class: 13
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	7	1	0	0	9
NNE	0	0	5	4	1	0	10
NE	0	1	2	6	0	0	9
ENE	1	4	4	0	0	0	9
E	0	10	4	2	0	0	16
ESE	1	4	15	5	0	0	25
SE	1	14	13	4	0	0	32
SSE	0	5	3	2	0	0	10
S	1	4	13	5	4	1	28
SSW	0	1	1	8	2	2	14
SW	0	1	5	6	1	1	14
WSW	0	2	7	9	2	0	20
W	0	2	11	13	2	0	28
WNW	0	2	18	20	9	0	49
NW	0	4	12	9	1	0	26
NNW	0	1	4	8	1	0	14
Variable	0	0	0	0	0	0	0
Total	4	56	124	102	23	4	313

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	3	1	0	0	4
NNE	0	1	6	4	0	0	11
NE	0	0	4	2	0	0	6
ENE	0	0	1	0	0	0	1
E	0	5	2	0	0	0	7
ESE	0	6	5	0	0	0	11
SE	0	3	4	1	0	0	8
SSE	0	0	0	0	0	0	0
S	0	1	4	0	1	0	6
SSW	0	4	3	2	1	0	10
SW	0	2	2	2	0	1	7
WSW	0	4	2	1	0	0	7
W	0	2	1	1	0	0	4
WNW	0	2	5	8	4	2	21
NW	0	0	1	2	1	0	4
NNW	0	0	3	1	2	0	6
Variable	0	0	0	0	0	0	0
Total	0	30	46	25	9	3	113

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	5	6	4	0	0	15
NNE	0	2	6	4	0	0	12
NE	0	2	4	1	0	0	7
ENE	0	2	3	0	0	0	5
E	1	2	2	1	0	0	6
ESE	0	3	2	2	0	0	7
SE	0	5	4	3	0	0	12
SSE	0	3	2	1	0	0	6
S	0	0	1	4	2	1	8
SSW	0	1	3	1	3	1	9
SW	0	1	1	2	1	1	6
WSW	0	1	3	2	0	0	6
W	0	1	3	3	0	0	7
WNW	0	4	1	2	5	1	13
NW	0	1	1	1	2	1	6
NNW	0	4	4	2	0	0	10
Variable	0	0	0	0	0	0	0
Total	1	37	46	33	13	5	135

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	1	9	20	22	0	0	52
NNE	1	7	37	20	0	0	65
NE	1	15	43	30	3	0	92
ENE	4	14	21	10	0	0	49
E	2	6	8	9	6	0	31
ESE	0	6	10	5	6	0	27
SE	1	7	13	9	8	0	38
SSE	0	4	18	8	4	1	35
S	1	3	14	19	18	3	58
SSW	0	3	15	16	15	6	55
SW	0	1	11	20	2	3	37
WSW	0	5	11	8	1	0	25
W	1	2	5	8	3	1	20
WNW	1	8	7	18	12	4	50
NW	0	10	9	9	8	3	39
NNW	1	10	9	7	3	0	30
Variable	0	0	0	0	0	0	0
Total	14	110	251	218	89	21	703

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	9	3	0	0	15
NNE	0	4	14	0	0	0	18
NE	1	10	21	1	0	0	33
ENE	0	14	26	0	0	0	40
E	0	5	25	15	4	0	49
ESE	0	5	15	23	5	0	48
SE	0	6	32	7	0	0	45
SSE	0	4	12	15	4	0	35
S	0	4	15	39	5	0	63
SSW	0	2	12	27	3	0	44
SW	0	3	19	16	3	1	42
WSW	0	2	19	6	1	0	28
W	0	4	20	8	1	1	34
WNW	0	4	13	30	3	1	51
NW	1	4	18	10	3	0	36
NNW	0	5	18	6	0	0	29
Variable	0	0	0	0	0	0	0
Total	2	79	288	206	32	3	610

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	1	3	5	0	0	0	9
NNE	0	0	3	0	0	0	3
NE	0	1	1	0	0	0	2
ENE	0	7	1	0	0	0	8
E	1	3	15	8	0	0	27
ESE	0	1	11	16	0	0	28
SE	0	2	12	0	0	0	14
SSE	1	1	6	1	0	0	9
S	0	1	4	0	0	0	5
SSW	2	2	4	1	0	0	9
SW	0	4	5	2	0	0	11
WSW	1	3	5	7	0	0	16
W	0	4	8	4	0	0	16
WNW	0	6	8	2	0	0	16
NW	0	5	12	1	0	0	18
NNW	0	2	4	1	0	0	7
Variable	0	0	0	0	0	0	0
Total	6	45	104	43	0	0	198

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: 0

Braidwood Generating Station

Period of Record: April - June 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	4	0	0	0	4
NNE	1	1	0	0	0	0	2
NE	2	2	1	0	0	0	5
ENE	1	2	2	0	0	0	5
E	1	0	2	4	0	0	7
ESE	1	0	5	2	0	0	8
SE	0	1	4	1	0	0	6
SSE	1	4	0	0	0	0	5
S	1	2	0	0	0	0	3
SSW	2	2	3	0	0	0	7
SW	2	1	0	1	0	0	4
WSW	1	6	0	0	0	0	7
W	1	4	8	9	0	0	22
WNW	1	3	7	4	0	0	15
NW	0	2	3	0	0	0	5
NNW	0	2	5	0	0	0	7
Variable	0	0	0	0	0	0	0
Total	15	32	44	21	0	0	112

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: 0

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	2	0	0	0	0	2
NNE	0	1	0	0	0	0	1
NE	2	5	0	0	0	0	7
ENE	3	7	0	0	0	0	10
E	5	13	0	0	0	0	18
ESE	5	17	0	0	0	0	22
SE	6	16	1	0	0	0	23
SSE	5	15	0	0	0	0	20
S	3	20	22	0	0	0	45
SSW	0	11	19	9	0	0	39
SW	1	5	19	5	0	0	30
WSW	1	9	7	0	0	0	17
W	0	16	10	10	0	0	36
WNW	1	13	13	0	0	0	27
NW	0	6	1	0	0	0	7
NNW	1	14	0	0	0	0	15
Variable	0	0	0	0	0	0	0
Total	33	170	92	24	0	0	319

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	2	3	0	0	0	5
NNE	0	0	1	0	0	0	1
NE	1	6	2	0	0	0	9
ENE	1	5	0	0	0	0	6
E	4	7	0	0	0	0	11
ESE	0	3	0	0	0	0	3
SE	2	9	0	0	0	0	11
SSE	1	4	0	0	0	0	5
S	2	5	5	0	0	0	12
SSW	0	5	11	1	0	0	17
SW	1	2	6	2	0	0	11
WSW	1	3	1	0	0	0	5
W	1	7	10	0	0	0	18
WNW	0	8	1	0	0	0	9
NW	2	1	0	0	0	0	3
NNW	0	2	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	16	69	40	3	0	0	128

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	3	4	4	0	0	0	11
NNE	0	3	3	0	0	0	6
NE	3	10	4	0	0	0	17
ENE	6	1	1	0	0	0	8
E	5	5	0	0	0	0	10
ESE	7	7	0	0	0	0	14
SE	5	1	0	0	0	0	6
SSE	3	6	0	0	0	0	9
S	4	4	3	0	0	0	11
SSW	0	2	4	4	0	0	10
SW	0	4	3	1	0	0	8
WSW	0	8	5	0	0	0	13
W	1	7	3	1	0	0	12
WNW	0	4	3	0	0	0	7
NW	1	2	1	0	0	0	4
NNW	2	2	1	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	40	70	35	6	0	0	151

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4	7	8	1	0	0	20
NNE	9	33	15	0	0	0	57
NE	6	49	13	0	0	0	68
ENE	16	23	1	0	0	0	40
E	25	22	0	0	0	0	47
ESE	13	2	1	0	0	0	16
SE	7	7	1	0	0	0	15
SSE	6	30	2	0	0	0	38
S	4	25	14	0	0	0	43
SSW	3	4	28	2	0	0	37
SW	6	20	29	1	0	0	56
WSW	6	29	5	0	0	0	40
W	8	18	10	1	0	0	37
WNW	7	14	6	0	0	0	27
NW	7	6	0	0	0	0	13
NNW	5	8	5	0	0	0	18
Variable	0	0	0	0	0	0	0
Total	132	297	138	5	0	0	572

Hours of calm in this stability class: 2
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	6	7	8	0	0	0	21
NNE	13	14	2	0	0	0	29
NE	26	20	2	0	0	0	48
ENE	27	19	0	0	0	0	46
E	49	4	0	0	0	0	53
ESE	22	16	0	0	0	0	38
SE	14	33	0	0	0	0	47
SSE	23	44	2	0	0	0	69
S	12	71	13	0	0	0	96
SSW	2	24	12	0	0	0	38
SW	8	22	6	1	0	0	37
WSW	15	33	2	1	0	0	51
W	15	17	2	0	0	0	34
WNW	26	9	2	0	0	0	37
NW	14	3	0	0	0	0	17
NNW	18	6	0	0	0	0	24
Variable	0	0	0	0	0	0	0
Total	290	342	51	2	0	0	685

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	7	1	0	0	0	0	8
NNE	2	0	0	0	0	0	2
NE	8	0	0	0	0	0	8
ENE	15	1	0	0	0	0	16
E	31	0	0	0	0	0	31
ESE	20	4	0	0	0	0	24
SE	7	2	0	0	0	0	9
SSE	3	6	0	0	0	0	9
S	3	2	0	0	0	0	5
SSW	4	5	0	0	0	0	9
SW	11	3	1	0	0	0	15
WSW	13	8	0	0	0	0	21
W	27	8	0	0	0	0	35
WNW	19	1	0	0	0	0	20
NW	6	0	0	0	0	0	6
NNW	12	0	0	0	0	0	12
Variable	0	0	0	0	0	0	0
Total	188	41	1	0	0	0	230

Hours of calm in this stability class: 13
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4	0	0	0	0	0	4
NNE	5	0	0	0	0	0	5
NE	7	0	0	0	0	0	7
ENE	16	0	0	0	0	0	16
E	13	0	0	0	0	0	13
ESE	5	0	0	0	0	0	5
SE	1	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	3	0	0	0	0	0	3
SSW	2	1	0	0	0	0	3
SW	1	0	0	0	0	0	1
WSW	1	0	0	0	0	0	1
W	5	0	0	0	0	0	5
WNW	7	0	0	0	0	0	7
NW	2	0	0	0	0	0	2
NNW	5	0	0	0	0	0	5
Variable	0	0	0	0	0	0	0
Total	77	1	0	0	0	0	78

Hours of calm in this stability class: 21
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	2	0	0	0	3
NNE	0	1	0	0	0	0	1
NE	0	6	2	0	0	0	8
ENE	1	3	3	0	0	0	7
E	0	12	9	0	0	0	21
ESE	3	14	6	0	0	0	23
SE	1	15	3	1	0	0	20
SSE	0	15	7	2	0	0	24
S	0	12	14	17	0	0	43
SSW	1	3	14	19	11	0	48
SW	0	2	11	6	0	0	19
WSW	2	2	11	4	0	0	19
W	0	7	11	9	11	0	38
WNW	0	6	11	7	4	0	28
NW	0	6	7	0	0	0	13
NNW	0	0	4	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	8	105	115	65	26	0	319

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	1	3	0	0	4
NNE	0	0	1	0	0	0	1
NE	0	2	6	1	0	0	9
ENE	0	4	2	0	0	0	6
E	2	4	5	0	0	0	11
ESE	1	1	3	0	0	0	5
SE	0	4	5	0	0	0	9
SSE	1	3	2	0	0	0	6
S	1	3	3	4	1	0	12
SSW	0	2	7	10	0	0	19
SW	0	0	3	3	1	0	7
WSW	0	2	0	1	0	0	3
W	1	5	5	8	0	0	19
WNW	1	4	4	0	0	0	9
NW	1	5	0	0	0	0	6
NNW	0	0	1	1	0	0	2
Variable	0	0	0	0	0	0	0
Total	8	39	48	31	2	0	128

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	2	0	4	2	0	0	8
NNE	0	6	3	2	0	0	11
NE	5	3	5	3	0	0	16
ENE	2	5	0	0	0	0	7
E	5	6	1	0	0	0	12
ESE	1	6	2	0	0	0	9
SE	2	4	3	0	0	0	9
SSE	1	2	4	2	0	0	9
S	1	1	3	3	1	0	9
SSW	0	3	2	3	3	0	11
SW	0	1	5	0	0	0	6
WSW	0	6	8	2	0	0	16
W	0	4	3	2	1	0	10
WNW	0	2	1	4	0	0	7
NW	0	3	2	0	0	0	5
NNW	0	2	2	2	0	0	6
Variable	0	0	0	0	0	0	0
Total	19	54	48	25	5	0	151

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	7	8	8	1	0	24
NNE	0	17	29	18	0	0	64
NE	1	7	36	8	0	0	52
ENE	3	23	14	0	0	0	40
E	2	20	22	0	0	0	44
ESE	5	11	4	2	0	0	22
SE	4	5	3	2	0	0	14
SSE	0	12	12	14	0	0	38
S	0	5	19	16	2	0	42
SSW	0	3	7	41	2	0	53
SW	3	5	25	8	1	0	42
WSW	1	17	22	4	1	0	45
W	2	13	11	7	1	0	34
WNW	5	4	12	5	5	0	31
NW	1	7	5	2	0	0	15
NNW	3	3	3	5	0	0	14
Variable	0	0	0	0	0	0	0
Total	30	159	232	140	13	0	574

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	1	9	10	6	1	0	27
NNE	1	8	16	3	0	0	28
NE	2	14	36	6	0	0	58
ENE	0	25	17	0	0	0	42
E	0	10	28	3	0	0	41
ESE	0	10	17	11	0	0	38
SE	1	8	17	11	0	0	37
SSE	3	10	23	17	1	0	54
S	0	6	53	43	1	0	103
SSW	2	6	26	24	0	0	58
SW	1	10	25	8	1	0	45
WSW	1	12	24	5	1	1	44
W	1	7	16	5	1	0	30
WNW	2	14	16	6	0	0	38
NW	0	8	8	3	0	0	19
NNW	0	6	15	6	0	0	27
Variable	0	0	0	0	0	0	0
Total	15	163	347	157	6	1	689

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	1	4	11	1	0	0	17
NNE	1	2	3	0	0	0	6
NE	3	3	0	0	0	0	6
ENE	2	1	0	0	0	0	3
E	3	2	13	3	0	0	21
ESE	1	6	9	5	0	0	21
SE	1	5	9	2	0	0	17
SSE	1	7	3	0	0	0	11
S	1	5	5	1	0	0	12
SSW	2	2	8	0	0	0	12
SW	1	15	7	1	0	0	24
WSW	2	8	9	2	0	0	21
W	1	3	8	11	0	0	23
WNW	0	7	16	6	0	0	29
NW	0	3	8	0	0	0	11
NNW	0	5	4	0	0	0	9
Variable	0	0	0	0	0	0	0
Total	20	78	113	32	0	0	243

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: 5

Braidwood Generating Station

Period of Record: July - September 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	1	3	0	0	0	0	4
NNE	4	2	0	0	0	0	6
NE	1	1	0	0	0	0	2
ENE	3	5	0	0	0	0	8
E	4	5	1	0	0	0	10
ESE	3	3	0	0	0	0	6
SE	5	7	3	0	0	0	15
SSE	6	4	1	0	0	0	11
S	2	2	0	0	0	0	4
SSW	1	4	3	0	0	0	8
SW	1	2	1	0	0	0	4
WSW	1	4	0	0	0	0	5
W	0	0	1	0	0	0	1
WNW	1	7	4	0	0	0	12
NW	0	1	0	0	0	0	1
NNW	1	1	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	34	51	14	0	0	0	99

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: 5

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
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	0	0	0	0	0	0
E	0	3	0	0	0	0	3
ESE	0	2	0	0	0	0	2
SE	1	1	1	0	0	0	3
SSE	0	2	0	0	0	0	2
S	0	1	7	2	0	0	10
SSW	0	2	5	0	0	0	7
SW	0	2	8	0	0	0	10
WSW	0	0	1	1	0	0	2
W	0	0	4	1	0	0	5
WNW	0	3	10	0	0	0	13
NW	0	6	1	0	0	0	7
NNW	0	4	4	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	1	26	43	4	0	0	74

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: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	1	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	0	0	0	0	0
ESE	0	2	0	0	0	0	2
SE	1	1	1	0	0	0	3
SSE	0	3	0	0	0	0	3
S	1	3	5	0	0	0	9
SSW	0	3	1	3	0	0	7
SW	0	6	3	3	0	0	12
WSW	0	0	3	1	0	0	4
W	0	0	5	1	0	0	6
WNW	0	4	6	1	0	0	11
NW	1	1	1	0	0	0	3
NNW	0	4	2	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	3	29	28	9	0	0	69

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: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	1	5	0	0	0	0	6
NNE	0	3	1	0	0	0	4
NE	2	1	1	0	0	0	4
ENE	2	0	0	0	0	0	2
E	1	1	0	0	0	0	2
ESE	0	0	1	0	0	0	1
SE	0	5	1	0	0	0	6
SSE	0	2	2	0	0	0	4
S	0	1	4	2	0	0	7
SSW	0	1	4	3	0	0	8
SW	0	1	5	2	0	0	8
WSW	0	3	3	1	0	0	7
W	2	0	5	2	0	0	9
WNW	1	8	7	1	0	0	17
NW	2	4	0	0	0	0	6
NNW	1	4	1	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	12	39	35	11	0	0	97

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 1
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	6	11	6	0	0	0	23
NNE	8	10	17	0	0	0	35
NE	8	8	1	0	0	0	17
ENE	7	11	0	0	0	0	18
E	12	21	4	0	0	0	37
ESE	2	12	8	0	0	0	22
SE	5	16	39	0	0	0	60
SSE	1	19	24	8	0	0	52
S	2	7	54	26	0	0	89
SSW	3	2	16	23	4	0	48
SW	3	14	27	14	0	0	58
WSW	3	18	36	4	0	0	61
W	6	38	32	17	0	0	93
WNW	11	41	57	43	1	0	153
NW	10	22	15	0	0	0	47
NNW	3	26	19	0	0	0	48
Variable	0	0	0	0	0	0	0
Total	90	276	355	135	5	0	861

Hours of calm in this stability class: 1
 Hours of missing wind measurements in this stability class: 2
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	10	14	1	0	0	0	25
NNE	6	13	1	0	0	0	20
NE	6	8	0	0	0	0	14
ENE	10	8	0	0	0	0	18
E	27	5	0	0	0	0	32
ESE	14	17	7	0	0	0	38
SE	6	27	7	2	0	0	42
SSE	11	31	10	4	0	0	56
S	1	48	56	14	0	0	119
SSW	1	17	34	16	7	0	75
SW	3	33	33	8	1	0	78
WSW	5	17	10	3	0	0	35
W	12	30	28	4	0	0	74
WNW	28	43	23	2	0	0	96
NW	18	13	4	0	0	0	35
NNW	16	15	1	0	0	0	32
Variable	0	0	0	0	0	0	0
Total	174	339	215	53	8	0	789

Hours of calm in this stability class: 8
 Hours of missing wind measurements in this stability class: 7
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	2	0	0	0	0	0	2
NNE	4	1	0	0	0	0	5
NE	3	0	0	0	0	0	3
ENE	5	0	0	0	0	0	5
E	20	0	0	0	0	0	20
ESE	21	1	0	0	0	0	22
SE	7	5	0	0	0	0	12
SSE	2	2	0	0	0	0	4
S	2	2	0	0	0	0	4
SSW	6	16	10	0	0	0	32
SW	5	17	1	0	0	0	23
WSW	10	13	0	0	0	0	23
W	15	10	0	0	0	0	25
WNW	10	4	0	0	0	0	14
NW	7	0	0	0	0	0	7
NNW	6	0	0	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	125	71	11	0	0	0	207

Hours of calm in this stability class: 7
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 34 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4	0	0	0	0	0	4
NNE	2	0	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	2	0	0	0	0	0	2
E	8	0	0	0	0	0	8
ESE	6	2	0	0	0	0	8
SE	3	0	0	0	0	0	3
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	1	0	1	0	0	0	2
SW	1	0	0	0	0	0	1
WSW	0	9	0	0	0	0	9
W	3	1	0	0	0	0	4
WNW	9	0	0	0	0	0	9
NW	5	0	0	0	0	0	5
NNW	2	0	0	0	0	0	2
Variable	0	0	0	0	0	0	0
Total	47	12	1	0	0	0	60

Hours of calm in this stability class: 21
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Extremely Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	0	1	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	3	0	0	0	4
ESE	0	1	0	0	0	0	1
SE	1	2	1	0	0	0	4
SSE	0	0	2	1	0	0	3
S	0	1	1	5	1	1	9
SSW	0	0	3	1	0	0	4
SW	0	1	2	5	0	0	8
WSW	0	1	0	1	1	0	3
W	0	0	1	1	1	0	3
WNW	0	2	7	6	1	0	16
NW	0	2	4	5	0	0	11
NNW	0	1	2	0	0	0	3
Variable	0	0	0	0	0	0	0
Total	1	12	26	26	4	1	70

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

Braidwood Generating Station

Period of Record: October - December 2016

Stability Class - Moderately Unstable - 199Ft-30Ft Delta-T (F)
Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	0	1	0	0	2
NNE	0	1	0	0	0	0	1
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	1	1	0	0	0	2
SE	0	1	1	1	0	0	3
SSE	0	2	1	0	0	0	3
S	0	2	0	4	0	1	7
SSW	0	3	1	1	0	2	7
SW	0	1	4	5	0	0	10
WSW	0	0	0	2	1	0	3
W	0	0	4	1	3	0	8
WNW	0	1	4	3	0	0	8
NW	0	1	2	2	0	0	5
NNW	0	1	5	0	0	0	6
Variable	0	0	0	0	0	0	0
Total	0	16	23	20	4	3	66

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 3
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Slightly Unstable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	3	0	0	0	6
NNE	0	4	0	1	1	0	6
NE	0	1	0	0	0	0	1
ENE	0	1	0	0	0	0	1
E	0	0	1	0	0	0	1
ESE	0	1	1	1	0	0	3
SE	0	1	4	2	0	0	7
SSE	0	2	0	1	0	0	3
S	0	0	0	4	1	2	7
SSW	0	1	2	4	0	1	8
SW	1	1	3	5	1	0	11
WSW	1	0	2	3	0	0	6
W	0	0	3	3	0	0	6
WNW	1	5	7	5	1	1	20
NW	1	3	2	1	0	0	7
NNW	1	1	2	0	0	0	4
Variable	0	0	0	0	0	0	0
Total	5	24	30	30	4	4	97

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 1
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Neutral - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4	9	9	7	0	0	29
NNE	2	4	10	13	1	0	30
NE	1	9	5	0	0	0	15
ENE	4	4	6	0	0	0	14
E	3	10	18	9	3	0	43
ESE	2	0	6	7	4	1	20
SE	2	4	16	29	10	0	61
SSE	0	9	13	25	16	2	65
S	1	1	12	40	18	8	80
SSW	5	1	3	13	20	8	50
SW	0	5	13	23	11	0	52
WSW	1	11	14	30	10	0	66
W	0	17	31	20	7	9	84
WNW	1	17	30	45	31	22	146
NW	1	10	18	15	13	2	59
NNW	3	7	21	15	1	0	47
Variable	0	0	0	0	0	0	0
Total	30	118	225	291	145	52	861

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 3
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Slightly Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	3	4	13	5	0	0	25
NNE	0	1	13	1	0	0	15
NE	1	4	15	2	0	0	22
ENE	0	7	4	0	0	0	11
E	1	5	16	3	0	0	25
ESE	0	8	18	8	4	0	38
SE	1	7	5	21	2	2	38
SSE	1	10	15	27	6	4	63
S	0	1	21	55	28	13	118
SSW	1	1	9	44	25	9	89
SW	1	4	29	28	5	0	67
WSW	2	4	19	12	1	1	39
W	2	7	24	20	2	1	56
WNW	2	10	28	30	20	1	91
NW	4	13	13	20	3	0	53
NNW	3	15	20	9	0	0	47
Variable	0	0	0	0	0	0	0
Total	22	101	262	285	96	31	797

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 7
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Moderately Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	5	0	0	0	8
NNE	0	4	2	0	0	0	6
NE	1	0	3	0	0	0	4
ENE	1	0	1	0	0	0	2
E	0	0	11	3	0	0	14
ESE	0	2	9	4	0	0	15
SE	0	4	12	1	0	0	17
SSE	1	1	6	2	0	0	10
S	0	1	3	0	0	0	4
SSW	0	3	7	3	0	0	13
SW	1	8	12	16	0	0	37
WSW	1	7	9	2	0	0	19
W	0	3	14	5	0	0	22
WNW	0	1	9	5	0	0	15
NW	0	2	8	3	0	0	13
NNW	0	1	5	1	0	0	7
Variable	0	0	0	0	0	0	0
Total	5	40	116	45	0	0	206

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 8
 Hours of missing stability measurements in all stability classes: 4

Braidwood Generating Station

Period of Record: October - December 2016
 Stability Class - Extremely Stable - 199Ft-30Ft Delta-T (F)
 Winds Measured at 203 Feet

Wind Direction	Wind Speed (in mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	2	7	3	0	0	0	12
NNE	0	2	1	0	0	0	3
NE	2	1	0	0	0	0	3
ENE	0	1	0	0	0	0	1
E	1	1	3	1	0	0	6
ESE	0	1	1	2	0	0	4
SE	0	1	1	1	0	0	3
SSE	1	1	1	0	0	0	3
S	1	3	1	0	0	0	5
SSW	2	4	1	0	0	0	7
SW	2	1	0	0	0	0	3
WSW	0	3	2	4	0	0	9
W	1	0	2	0	0	0	3
WNW	0	0	5	1	0	0	6
NW	2	1	1	0	0	0	4
NNW	0	4	4	0	0	0	8
Variable	0	0	0	0	0	0	0
Total	14	31	26	9	0	0	80

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 1
 Hours of missing stability measurements in all stability classes: 4

BRAIDWOOD NUCLEAR POWER STATION
 RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
 UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)
 WIND STABILITY CLASSES

Table C-4

Atmospheric Stability Classes

<u>Description</u>	<u>Pasquill Stability Class</u>	<u>σ_{θ}(degrees)</u>	<u>Temperature Change with Height($^{\circ}$C/100 m)</u>
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

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.

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
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APPENDIX A

LLD TABLES

BRAIDWOOD NUCLEAR POWER STATION
 RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
 UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)
 LLD VALUES FOR GASEOUS RELEASES

<u>Isotope</u>	<u>LLD</u> <u>(uCi/mL)</u>
Gross Alpha	7.23E-07
H-3	1.10E-06
Mn-54	1.72E-12
Co-58	1.85E-12
Fe-59	1.36E-12
Co-60	3.30E-12
Zn-65	4.12E-12
Kr-87	5.12E-06
Kr-88	9.94E-06
Sr-89	1.27E-14
Sr-90	3.83E-15
Mo-99	1.15E-12
I-131	9.24E-13
I-133	1.68E-12
Xe-133	1.06E-05
Xe-133m	3.29E-05
Cs-134	2.01E-12
Xe-135	3.42E-06
Cs-137	1.92E-12
Xe-138	5.66E-05
Ce-144	2.04E-12
Ce-141	7.76E-12

NOTE: LLD Value for total activity released is based on LLD values for individual isotopes used in the calculation.

BRAIDWOOD NUCLEAR POWER STATION
 RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
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 LLD VALUES FOR LIQUID RELEASES

<u>Isotope</u>	<u>LLD (uCi/mL)</u>
Gross Alpha	3.80E-08
H-3	1.10E-06
Mn-54	7.13E-08
Fe-55	6.83E-07
Co-58	5.21E-08
Fe-59	1.47E-07
Co-60	1.11E-07
Ni-63	4.52E-07
Zn-65	1.47E-07
Kr-87	1.81E-07
Kr-88	2.46E-07
Sr-89	2.70E-08
Sr-90	8.47E-09
Nb-95	9.18E-09
Zr-95	1.82E-08
Mo-99	4.79E-07
I-131	9.80E-08
Xe-133	1.32E-07
Xe-133m	3.98E-07
Cs-134	5.90E-08
Xe-135	5.70E-08
Cs-137	6.84E-08
Xe-138	5.33E-06
Ce-141	8.80E-08
Ce-144	3.72E-07
Ba-140	3.39E-08
La-140	1.46E-08

NOTE: LLD Value for Total Activity Released is based on LLD Values for individual isotopes used in the calculation.

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
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APPENDIX B
SUPPLEMENTAL INFORMATION

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)

Instrument and Sampling Issues

1. Due to a heat trace equipment issue, on 1/19/16, the sample line to the Circulating Water Blowdown (CWBD) composite sampler was found frozen. An issue report (IR 2614195) was written and compensatory sampling was initiated to obtain required samples. The sample line was thawed and normal sampling resumed on 1/20/16.
2. Due to a faulty solenoid valve on 2/18/16, the CWBD composite sample bottle was found overflowing. An issue report (IR 2628117) was written and compensatory sampling was initiated. Compensatory sampling continued during the troubleshooting and repair of the three-way solenoid valve. Once repaired normal sampling per the CWBD compositor was reinstated.
3. On March 8, 2016, an issue with the Unit 1 and Unit 2 Diesel Drive Auxiliary Feedwater (DDAF) pumps required the site to modify the engine intake path for these two engine driven pumps. The engine intake path was temporarily changed from outside the Auxiliary Building to inside the Auxiliary Building, thus providing a path for potentially contaminated air from inside the Aux Building to the outside environment via the intake and combustion path of the engines. Sampling and analysis of the general area where the combustion air was now supplied to the engines was immediately started and performed weekly to determine if contamination was entering the engines and being exhausted to the outside environment. Eventually, a plant modification was installed (EC 405740, 405741) to make the change to each engine intake path permanent. The weekly air sampling and analysis of the general atmosphere around the DDAF pumps continue and when contamination has been present at the time of a DDAF pump run, a release is entered into the station's offsite dose calculation software, OpenEMS.

An evaluation of the potential offsite dose via this path was performed for the station by an industry expert. This evaluation determined that the expected dose via this path is less than 1% of the normal gaseous effluents which is classified as a less-significant release per Regulatory Guide 1.21 rev. 2. Activity that is detected above the LLD by the portable air monitoring instrumentation on the intake must be accounted for in the total activity reported in the ARERR. This ensures that any potentially contaminated air leaving the Aux Building via the engine exhausts is accounted for in Annual activity and dose calculations.

4. On 5/26/16, an issue report was written (IR 2674843) because the composite sampler at Waste Water Treatment (TR) was found with no sample in the sample bottle. This indicated that the sampler had not been properly collecting sample aliquots for the previous three days, since the composite sample had last been processed for lab analysis. The ODCM requires continuous sample collection of the TR effluent and this condition was not met. At the time of discovery, the composite sampler was checked for proper setup and operation and the cause of the lack of sample volume could not be determined. After the sampler was restarted, it was checked for multiple shifts after and the problem did not recur. The composite sample for the following week contained less volume than normal due to no sample being collected for three days.
5. On 10/8/16, an issue report was written (IR 2725845) because a gap during the sample week, starting 9/14/16, had been identified in the required continuous Main Vent Stack particulate and iodine sampling at radiation monitors 1/2PR28J and 1/2PR29J. The primary (1/2PR28J) and backup (1/2PR29J) vent stack radiation monitors normally are shutdown, sampled, and restarted in series to reduce any potential sampling gaps if the backup samples (1/2PR29J) have to be utilized. On 9/14/16, there was a delay in this evolution for 1/2PR29J. The sample collection and monitor restart for 1/2PR28J occurred at 0924. Sample collection and restart for 1/2PR29J occurred at 1450. This delay in the sampling evolution for the 1/2PR29J now left the weekly 1/2PR28J and 1/2PR29J samples apart in time rather than in series

(close time proximity). This delay was not an issue until later in the sample week when the 1/2PR28J was shut down and its sample became invalid for the week. The sample for 1/2PR29J then became the required sample for the sample period, and its late start time created a gap in the continuous sample coverage. Sample results and radiation monitor trends gave no indication of any elevated effluent activity at the time of the gap in continuous sampling.

**BRAIDWOOD NUCLEAR POWER STATION
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KANKAKEE RIVER FLOW**

DATE	CFS	DATE	CFS	DATE	CFS
1/1/16	33,900	2/1/16	3,960	3/1/16	6,590
1/2/16	29,900	2/2/16	3,880	3/2/16	6,880
1/3/16	25,100	2/3/16	8,750	3/3/16	6,630
1/4/16	20,400	2/4/16	8,590	3/4/16	6,540
1/5/16	16,300	2/5/16	8,270	3/5/16	6,400
1/6/16	13,400	2/6/16	7,690	3/6/16	6,440
1/7/16	11,400	2/7/16	6,780	3/7/16	6,440
1/8/16	10,200	2/8/16	2,080	3/8/16	6,400
1/9/16	10,100	2/9/16	1,820	3/9/16	6,070
1/10/16	11,700	2/10/16	1,520	3/10/16	5,790
1/11/16	11,300	2/11/16	1,330	3/11/16	5,560
1/12/16	10,400	2/12/16	1,150	3/12/16	6,430
1/13/16	9,620	2/13/16	3,331	3/13/16	5,790
1/14/16	8,480	2/14/16	3,331	3/14/16	12,000
1/15/16	8,480	2/15/16	3,331	3/15/16	13,800
1/16/16	8,540	2/16/16	3,331	3/16/16	14,700
1/17/16	8,430	2/17/16	3,331	3/17/16	14,600
1/18/16	8,084	2/18/16	3,331	3/18/16	12,300
1/19/16	8,084	2/19/16	3,331	3/19/16	10,600
1/20/16	8,084	2/20/16	3,331	3/20/16	9,300
1/21/16	8,084	2/21/16	3,331	3/21/16	8,210
1/22/16	8,084	2/22/16	3,290	3/22/16	7,330
1/23/16	8,084	2/23/16	3,330	3/23/16	6,540
1/24/16	8,084	2/24/16	3,400	3/24/16	6,300
1/25/16	8,084	2/25/16	3,520	3/25/16	7,530
1/26/16	8,084	2/26/16	3,480	3/26/16	6,930
1/27/16	8,084	2/27/16	3,520	3/27/16	6,590
1/28/16	8,084	2/28/16	3,720	3/28/16	6,440
1/29/16	8,084	2/29/16	5,340	3/29/16	6,350
1/30/16	8,084			3/30/16	6,300
1/31/16	8,084			3/31/16	6,830
TOTAL	360,826	TOTAL	115,399	TOTAL	244,610
AVG	11,640	AVG	3,931	AVG	7,891
Historical Avg 1941-1976 4586 cfs		Historical Avg 1941-1976 5579 cfs		Historical Avg 1941-1976 6625 cfs	

Note-Kankakee River Flows obtained from US Geological Survey website at noon local time.

**BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
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KANKAKEE RIVER FLOW**

DATE	CFS	DATE	CFS	DATE	CFS
4/1/16	9,300	5/1/16	5,970	6/1/16	3,520
4/2/16	9,950	5/2/16	7,030	6/2/16	3,400
4/3/16	10,500	5/3/16	7,580	6/3/16	3,330
4/4/16	9,570	5/4/16	7,230	6/4/16	3,370
4/5/16	8,370	5/5/16	6,780	6/5/16	3,330
4/6/16	7,580	5/6/16	6,300	6/6/16	3,220
4/7/16	8,640	5/7/16	5,930	6/7/16	3,030
4/8/16	11,100	5/8/16	5,610	6/8/16	2,820
4/9/16	11,900	5/9/16	5,430	6/9/16	2,650
4/10/16	11,500	5/10/16	5,930	6/10/16	2,450
4/11/16	12,300	5/11/16	11,500	6/11/16	2,350
4/12/16	12,100	5/12/16	11,000	6/12/16	2,260
4/13/16	11,200	5/13/16	9,620	6/13/16	2,290
4/14/16	10,400	5/14/16	9,090	6/14/16	2,320
4/15/16	9,620	5/15/16	8,640	6/15/16	2,610
4/16/16	8,860	5/16/16	7,740	6/16/16	2,450
4/17/16	8,270	5/17/16	7,130	6/17/16	2,290
4/18/16	7,740	5/18/16	6,590	6/18/16	2,100
4/19/16	7,180	5/19/16	6,160	6/19/16	1,840
4/20/16	6,630	5/20/16	5,740	6/20/16	1,760
4/21/16	6,350	5/21/16	5,300	6/21/16	1,650
4/22/16	6,020	5/22/16	4,870	6/22/16	1,620
4/23/16	5,930	5/23/16	4,620	6/23/16	4,210
4/24/16	5,880	5/24/16	4,300	6/24/16	5,970
4/25/16	5,740	5/25/16	4,090	6/25/16	7,230
4/26/16	5,480	5/26/16	3,880	6/26/16	5,390
4/27/16	5,210	5/27/16	3,760	6/27/16	4,130
4/28/16	5,170	5/28/16	3,720	6/28/16	3,480
4/29/16	4,960	5/29/16	3,680	6/29/16	3,070
4/30/16	4,830	5/30/16	3,560	6/30/16	2,960
		5/31/16	3,480		
TOTAL	138,380	TOTAL	196,570	TOTAL	93,100
AVG	4,613	AVG	6,341	AVG	3,103
Historical Avg 1941-1976 7463 cfs		Historical Avg 1941-1976 6608 cfs		Historical Avg 1941-1976 4847 cfs	

Note-Kankakee River Flows obtained from US Geological Survey website at noon local time.

**BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
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KANKAKEE RIVER FLOW**

DATE	CFS	DATE	CFS	DATE	CFS
7/1/16	2,890	8/1/16	3,000	9/1/16	10,200
7/2/16	2,610	8/2/16	2,610	9/2/16	8,540
7/3/16	2,230	8/3/16	2,230	9/3/16	7,280
7/4/16	1,960	8/4/16	1,870	9/4/16	6,350
7/5/16	1,790	8/5/16	1,600	9/5/16	5,700
7/6/16	1,990	8/6/16	1,370	9/6/16	5,080
7/7/16	2,260	8/7/16	1,210	9/7/16	4,620
7/8/16	2,920	8/8/16	1,120	9/8/16	6,930
7/9/16	2,890	8/9/16	1,050	9/9/16	9,620
7/10/16	2,610	8/10/16	968	9/10/16	18,200
7/11/16	2,230	8/11/16	948	9/11/16	15,800
7/12/16	1,840	8/12/16	1,030	9/12/16	14,400
7/13/16	1,550	8/13/16	1,320	9/13/16	13,200
7/14/16	1,900	8/14/16	1,650	9/14/16	11,700
7/15/16	3,480	8/15/16	1,990	9/15/16	10,000
7/16/16	4,540	8/16/16	14,300	9/16/16	8,980
7/17/16	3,560	8/17/16	16,700	9/17/16	8,920
7/18/16	4,870	8/18/16	15,000	9/18/16	8,540
7/19/16	13,800	8/19/16	16,500	9/19/16	7,430
7/20/16	15,200	8/20/16	18,500	9/20/16	6,440
7/21/16	13,700	8/21/16	22,200	9/21/16	5,740
7/22/16	13,100	8/22/16	20,000	9/22/16	5,210
7/23/16	10,100	8/23/16	17,500	9/23/16	4,790
7/24/16	9,350	8/24/16	15,200	9/24/16	4,380
7/25/16	8,980	8/25/16	17,200	9/25/16	4,090
7/26/16	7,480	8/26/16	17,800	9/26/16	3,840
7/27/16	6,110	8/27/16	20,800	9/27/16	3,600
7/28/16	5,130	8/28/16	22,000	9/28/16	3,520
7/29/16	4,260	8/29/16	19,200	9/29/16	3,600
7/30/16	3,880	8/30/16	15,000	9/30/16	3,760
7/31/16	3,680	8/31/16	12,700		
TOTAL	162,890	TOTAL	304,566	TOTAL	230,460
AVG	5,255	AVG	9,825	AVG	7,682
Historical Avg 1941-1976 3094 cfs		Historical Avg 1941-1976 1613 cfs		Historical Avg 1941-1976 1353 cfs	

Note-Kankakee River Flows obtained from US Geological Survey website at noon local time.

**BRAIDWOOD NUCLEAR POWER STATION
 RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
 UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)
 KANKAKEE RIVER FLOW**

DATE	CFS	DATE	CFS	DATE	CFS
10/1/16	4,870	11/1/16	4,910	12/1/16	11,000
10/2/16	7,530	11/2/16	4,960	12/2/16	10,100
10/3/16	7,080	11/3/16	7,790	12/3/16	8,980
10/4/16	6,160	11/4/16	8,110	12/4/16	8,110
10/5/16	5,740	11/5/16	6,830	12/5/16	7,630
10/6/16	6,110	11/6/16	6,210	12/6/16	7,230
10/7/16	12,600	11/7/16	5,880	12/7/16	7,080
10/8/16	9,030	11/8/16	5,740	12/8/16	6,930
10/9/16	6,930	11/9/16	5,650	12/9/16	6,590
10/10/16	5,880	11/10/16	5,610	12/10/16	6,210
10/11/16	5,080	11/11/16	5,560	12/11/16	5,880
10/12/16	4,620	11/12/16	5,340	12/12/16	5,700
10/13/16	4,580	11/13/16	5,080	12/13/16	5,340
10/14/16	4,460	11/14/16	4,830	12/14/16	5,170
10/15/16	4,300	11/15/16	4,540	12/15/16	4,130
10/16/16	4,500	11/16/16	4,260	12/16/16	5,650
10/17/16	6,590	11/17/16	4,090	12/17/16	6,590
10/18/16	6,110	11/18/16	3,960	12/18/16	6,780
10/19/16	5,610	11/19/16	3,960	12/19/16	8,920
10/20/16	5,430	11/20/16	4,050	12/20/16	9,140
10/21/16	5,260	11/21/16	3,760	12/21/16	6,300
10/22/16	5,000	11/22/16	3,440	12/22/16	4,660
10/23/16	4,790	11/23/16	3,800	12/23/16	4,170
10/24/16	4,710	11/24/16	7,280	12/24/16	3,720
10/25/16	4,580	11/25/16	8,750	12/25/16	3,960
10/26/16	4,580	11/26/16	8,480	12/26/16	6,210
10/27/16	5,260	11/27/16	8,000	12/27/16	11,800
10/28/16	5,740	11/28/16	7,740	12/28/16	10,000
10/29/16	5,210	11/29/16	11,700	12/29/16	9,190
10/30/16	5,080	11/30/16	11,800	12/30/16	8,430
10/31/16	4,960			12/31/16	7,690
TOTAL	178,380	TOTAL	182,110	TOTAL	219,290
AVG	5,754	AVG	6,070	AVG	7,074
Historical Avg 1941-1976 1836 cfs		Historical Avg 1941-1976 2547 cfs		Historical Avg 1941-1976 3379 cfs	

Note-Kankakee River Flows obtained from US Geological Survey website at noon local time.

BRAIDWOOD NUCLEAR POWER STATION
RADIOACTIVE EFFLUENT RELEASE REPORT FOR 2016
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)

APPENDIX C

UNIT SPECIFIC ANNUAL EFFLUENT SUMMARIES

=====

RELEASE AND DOSE SUMMARY REPORT PARAMETERS

=====

Date.....: 3/22/2017 10:49:40 AM

Database.....: BWDOpenEMS_PROD

Username.....: Admin

Permit Type.....: Gas

Start Date.....: 01/01/2016

End Date.....: 12/31/2016

Unit.....: Unit 1 Braidwood

Scaling Factor.....: 1.000

Dose Projection Option: No Dose Projection

Prorate Option.....: Doses Not Prorated for period

 Only Permits which have a release start date in the start/end period are

included with no pro-rating.

Sum By.....: Receptor, Pathway, and Nuclide

Include Open Permits...: No

Release Sources.....: U1/U2 Gas Abnormal Batch Rel

 U1/U2 Gas Abnormal Cont Rel

 Unit 1 Containment Purge

 Unit 1 DDAF Batch Rel

 Unit 1 Stack

 Waste Gas Decay Tank - A

 Waste Gas Decay Tank - B

 Waste Gas Decay Tank - C

 Waste Gas Decay Tank - D

 Waste Gas Decay Tank - E

 Waste Gas Decay Tank - F

Pathways.....: Cow Milk

 Ground Plane

 Inhalation

 Meat

 Vegetation

Receptors.....: Critical Receptor / Adult

 Critical Receptor / Child

 Critical Receptor / Infant

 Critical Receptor / Teenager

 Site Boundary / Adult

 Site Boundary / Child

 Site Boundary / Infant

 Site Boundary / Teenager

Nuclides.....: H-3,C-14,Br-82,Cd-109,I-131,I-132,I-133,Xe-133,Xe-135

=====

RELEASE TOTALS BY RELEASE MODE

=====

Release Mode.....: Mixed

Release Duration.....: 5.559e+05 minutes

Release Volume.....: 7.871e+10 cf

Average Flowrate.....: 1.416e+05 cfm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ECL MPC
H-3	1.014e+08	4.549e-08	6.147e-06
C-14	4.342e+06	1.948e-09	5.265e-07
I-131	1.101e+01	4.939e-15	1.335e-09
I-132	2.187e+02	9.811e-14	8.838e-10
I-133	1.430e-01	6.414e-17	4.334e-12
Xe-133	7.264e+04	3.259e-11	2.936e-09
Xe-135	2.270e+03	1.018e-12	2.752e-10

TOTAL : 1.058e+08 6.679e-06

=====
NOBLE GAS DOSES BY RECEPTOR (Total Body, Skin Dose = mRem Gamma, Beta Dose = mRad)
=====

Receptor Name: Critical Receptor / Adult
Receptor Name: Critical Receptor / Child
Receptor Name: Critical Receptor / Infant
Receptor Name: Critical Receptor / Teenager
Nuclide Total Bod Skin Gamma Beta
Xe-133 4.821e-07 1.461e-06 5.789e-07 2.808e-06
Xe-135 9.275e-08 2.646e-07 9.839e-08 2.056e-07
TOTAL: 5.749e-07 1.726e-06 6.773e-07 3.013e-06

Receptor Name: Site Boundary / Adult
Receptor Name: Site Boundary / Child
Receptor Name: Site Boundary / Infant
Receptor Name: Site Boundary / Teenager
Nuclide Total Bod Skin Gamma Beta
Xe-133 4.821e-07 3.350e-06 5.789e-07 9.289e-06
Xe-135 9.275e-08 6.234e-07 9.839e-08 6.801e-07
TOTAL: 5.749e-07 3.973e-06 6.773e-07 9.969e-06

=====
ORGAN DOSES BY RECEPTOR (Dose = mRem)
=====

Receptor Name: Critical Receptor / Adult
Pathway Nuclide Bone Liver Total Bod Thyroid Kidney Lung GI-Lli Skin
Cow Milk
H-3 0.000e+00 1.624e-03 1.624e-03 1.624e-03 1.624e-03 1.624e-03 1.624e-03 1.624e-03 0.000e+00
C-14 5.802e-02 1.160e-02 1.160e-02 1.160e-02 1.160e-02 1.160e-02 1.160e-02 1.160e-02 0.000e+00
I-131 1.697e-06 2.428e-06 1.392e-06 7.959e-04 4.162e-06 0.000e+00 6.405e-07 0.000e+00
I-132 1.876e-14 5.017e-14 1.755e-14 1.755e-12 7.992e-14 0.000e+00 9.424e-15 0.000e+00
I-133 2.888e-10 5.022e-10 1.531e-10 7.381e-08 8.767e-10 0.000e+00 4.514e-10 0.000e+00
Xe-133 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
Xe-135 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00

Ground Plane
I-131 9.863e-08 9.863e-08 9.863e-08 9.863e-08 9.863e-08 9.863e-08 9.863e-08 9.863e-08 0.000e+00
I-132 1.424e-07 1.424e-07 1.424e-07 1.424e-07 1.424e-07 1.424e-07 1.424e-07 1.424e-07 0.000e+00
I-133 1.825e-10 1.825e-10 1.825e-10 1.825e-10 1.825e-10 1.825e-10 1.825e-10 1.825e-10 0.000e+00
Xe-133 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
Xe-135 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00

Inhalation
H-3 0.000e+00 2.680e-03 2.680e-03 2.680e-03 2.680e-03 2.680e-03 2.680e-03 2.680e-03 0.000e+00
C-14 2.909e-03 5.450e-04 5.450e-04 5.450e-04 5.450e-04 5.450e-04 5.450e-04 5.450e-04 0.000e+00
I-131 1.021e-08 1.451e-08 8.307e-09 4.822e-06 2.484e-08 0.000e+00 2.545e-09 0.000e+00
I-132 9.338e-09 2.624e-08 9.338e-09 9.177e-07 4.170e-08 0.000e+00 3.268e-09 0.000e+00
I-133 4.547e-11 7.790e-11 2.379e-11 1.132e-08 1.358e-10 0.000e+00 4.674e-11 0.000e+00
Xe-133 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
Xe-135 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00

Meat
H-3 0.000e+00 6.905e-04 6.905e-04 6.905e-04 6.905e-04 6.905e-04 6.905e-04 6.905e-04 0.000e+00
C-14 5.323e-02 1.065e-02 1.065e-02 1.065e-02 1.065e-02 1.065e-02 1.065e-02 1.065e-02 0.000e+00
I-131 6.136e-08 8.831e-08 5.046e-08 2.884e-05 1.508e-07 0.000e+00 2.322e-08 0.000e+00
I-132 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
I-133 2.756e-17 4.789e-17 1.460e-17 7.039e-15 8.342e-17 0.000e+00 4.305e-17 0.000e+00
Xe-133 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
Xe-135 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00

 Vegetation

H-3	0.000e+00	4.815e-03	4.815e-03	4.815e-03	4.815e-03	4.815e-03	4.815e-03	4.815e-03	0.000e+00
C-14	1.434e-01	2.861e-02	2.861e-02	2.861e-02	2.861e-02	2.861e-02	2.861e-02	2.861e-02	0.000e+00
I-131	4.628e-07	6.595e-07	3.796e-07	2.168e-04	1.135e-06	0.000e+00	1.749e-07	0.000e+00	0.000e+00
I-132	6.357e-12	1.697e-11	5.946e-12	5.946e-10	2.711e-11	0.000e+00	3.190e-12	0.000e+00	0.000e+00
I-133	1.549e-10	2.696e-10	8.193e-11	3.962e-08	4.700e-10	0.000e+00	2.421e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

 ALL PATHWAYS/NUCLIDES TOTAL:

2.575e-01 6.122e-02 6.122e-02 6.226e-02 6.122e-02 6.121e-02 6.122e-02 0.000e+00

Receptor Name: Critical Receptor / Child

 Pathway Nuclide Bone Liver Total Bod Thyroid Kidney Lung GI-Lli Skin

Cow Milk

H-3	0.000e+00	3.348e-03	3.348e-03	3.348e-03	3.348e-03	3.348e-03	3.348e-03	3.348e-03	0.000e+00
C-14	2.637e-01	5.259e-02	5.259e-02	5.259e-02	5.259e-02	5.259e-02	5.259e-02	5.259e-02	0.000e+00
I-131	7.455e-06	7.512e-06	4.272e-06	2.483e-03	1.233e-05	0.000e+00	6.709e-07	0.000e+00	0.000e+00
I-132	7.872e-14	1.447e-13	6.653e-14	6.710e-12	2.210e-13	0.000e+00	1.697e-13	0.000e+00	0.000e+00
I-133	1.281e-09	1.586e-09	5.996e-10	2.942e-07	2.644e-09	0.000e+00	6.383e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

 Ground Plane

I-131	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	0.000e+00
I-132	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	0.000e+00
I-133	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

 Inhalation

H-3	0.000e+00	2.389e-03	2.389e-03	2.389e-03	2.389e-03	2.389e-03	2.389e-03	2.389e-03	0.000e+00
C-14	5.738e-03	1.076e-03	1.076e-03	1.076e-03	1.076e-03	1.076e-03	1.076e-03	1.076e-03	0.000e+00
I-131	1.949e-08	1.949e-08	1.106e-08	6.564e-06	3.193e-08	0.000e+00	1.151e-09	0.000e+00	0.000e+00
I-132	1.707e-08	3.276e-08	1.513e-08	1.562e-06	5.031e-08	0.000e+00	2.576e-08	0.000e+00	0.000e+00
I-133	8.737e-11	1.068e-10	4.053e-11	2.026e-08	1.779e-10	0.000e+00	2.884e-11	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

 Meat

H-3	0.000e+00	5.001e-04	5.001e-04	5.001e-04	5.001e-04	5.001e-04	5.001e-04	5.001e-04	0.000e+00
C-14	8.455e-02	1.694e-02	1.694e-02	1.694e-02	1.694e-02	1.694e-02	1.694e-02	1.694e-02	0.000e+00
I-131	9.462e-08	9.519e-08	5.419e-08	3.154e-05	1.565e-07	0.000e+00	8.487e-09	0.000e+00	0.000e+00
I-132	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
I-133	4.283e-17	5.288e-17	2.004e-17	9.832e-15	8.789e-17	0.000e+00	2.130e-17	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

 Vegetation

H-3	0.000e+00	8.547e-03	8.547e-03	8.547e-03	8.547e-03	8.547e-03	8.547e-03	8.547e-03	0.000e+00
C-14	5.594e-01	1.120e-01	1.120e-01	1.120e-01	1.120e-01	1.120e-01	1.120e-01	1.120e-01	0.000e+00
I-131	8.200e-07	8.258e-07	4.685e-07	2.724e-04	1.353e-06	0.000e+00	7.340e-08	0.000e+00	0.000e+00
I-132	1.017e-11	1.868e-11	8.589e-12	8.669e-10	2.859e-11	0.000e+00	2.199e-11	0.000e+00	0.000e+00
I-133	2.622e-10	3.247e-10	1.229e-10	6.026e-08	5.407e-10	0.000e+00	1.311e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

 ALL PATHWAYS/NUCLIDES TOTAL:

9.135e-01 1.974e-01 1.974e-01 2.002e-01 1.974e-01 1.974e-01 1.974e-01 0.000e+00

Receptor Name: Critical Receptor / Infant

 Pathway Nuclide Bone Liver Total Bod Thyroid Kidney Lung GI-Lli Skin

Cow Milk

H-3	0.000e+00	5.076e-03	5.076e-03	5.076e-03	5.076e-03	5.076e-03	5.076e-03	5.076e-03	0.000e+00
C-14	5.163e-01	1.101e-01	1.101e-01	1.101e-01	1.101e-01	1.101e-01	1.101e-01	1.101e-01	0.000e+00
I-131	1.560e-05	1.835e-05	8.085e-06	6.021e-03	2.145e-05	0.000e+00	6.537e-07	0.000e+00	0.000e+00
I-132	1.629e-13	3.315e-13	1.185e-13	1.549e-11	3.702e-13	0.000e+00	2.688e-13	0.000e+00	0.000e+00

I-133	2.704e-09	3.940e-09	1.154e-09	7.165e-07	4.633e-09	0.000e+00	6.666e-10	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Ground Plane

I-131	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	0.000e+00
I-132	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	0.000e+00
I-133	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Inhalation

H-3	0.000e+00	1.373e-03	1.373e-03	1.373e-03	1.373e-03	1.373e-03	1.373e-03	0.000e+00
C-14	4.236e-03	8.487e-04	8.487e-04	8.487e-04	8.487e-04	8.487e-04	8.487e-04	0.000e+00
I-131	1.536e-08	1.799e-08	7.942e-09	5.997e-06	2.099e-08	0.000e+00	4.295e-10	0.000e+00
I-132	1.360e-08	2.850e-08	1.014e-08	1.360e-06	3.180e-08	0.000e+00	1.529e-08	0.000e+00
I-133	6.947e-11	1.011e-10	2.947e-11	1.874e-08	1.179e-10	0.000e+00	1.137e-11	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

5.205e-01	1.174e-01	1.174e-01	1.235e-01	1.174e-01	1.174e-01	1.174e-01	1.174e-01	0.000e+00
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Receptor Name: Critical Receptor / Teenager

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin

Cow Milk									
H-3	0.000e+00	2.112e-03	2.112e-03	2.112e-03	2.112e-03	2.112e-03	2.112e-03	2.112e-03	0.000e+00
C-14	1.071e-01	2.142e-02	2.142e-02	2.142e-02	2.142e-02	2.142e-02	2.142e-02	2.142e-02	0.000e+00
I-131	3.079e-06	4.312e-06	2.317e-06	1.256e-03	7.397e-06	0.000e+00	8.544e-07	0.000e+00	0.000e+00
I-132	3.326e-14	8.703e-14	3.121e-14	2.928e-12	1.367e-13	0.000e+00	3.793e-14	0.000e+00	0.000e+00
I-133	5.273e-10	8.938e-10	2.726e-10	1.251e-07	1.572e-09	0.000e+00	6.770e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Ground Plane

I-131	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	9.863e-08	0.000e+00
I-132	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	1.424e-07	0.000e+00
I-133	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	1.825e-10	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Inhalation

H-3	0.000e+00	2.706e-03	2.706e-03	2.706e-03	2.706e-03	2.706e-03	2.706e-03	0.000e+00
C-14	4.156e-03	7.784e-04	7.784e-04	7.784e-04	7.784e-04	7.784e-04	7.784e-04	0.000e+00
I-131	1.434e-08	1.990e-08	1.070e-08	5.916e-06	3.404e-08	0.000e+00	2.630e-09	0.000e+00
I-132	1.280e-08	3.526e-08	1.272e-08	1.216e-06	5.570e-08	0.000e+00	1.022e-08	0.000e+00
I-133	6.421e-11	1.079e-10	3.274e-11	1.537e-08	1.889e-10	0.000e+00	5.421e-11	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Meat

H-3	0.000e+00	4.106e-04	4.106e-04	4.106e-04	4.106e-04	4.106e-04	4.106e-04	0.000e+00
C-14	4.491e-02	8.983e-03	8.983e-03	8.983e-03	8.983e-03	8.983e-03	8.983e-03	0.000e+00
I-131	5.115e-08	7.168e-08	3.848e-08	2.087e-05	1.233e-07	0.000e+00	1.416e-08	0.000e+00
I-132	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
I-133	2.302e-17	3.910e-17	1.192e-17	5.452e-15	6.852e-17	0.000e+00	2.957e-17	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Vegetation

H-3	0.000e+00	5.486e-03	5.486e-03	5.486e-03	5.486e-03	5.486e-03	5.486e-03	0.000e+00
C-14	2.318e-01	4.651e-02	4.651e-02	4.651e-02	4.651e-02	4.651e-02	4.651e-02	0.000e+00
I-131	4.404e-07	6.193e-07	3.314e-07	1.801e-04	1.061e-06	0.000e+00	1.221e-07	0.000e+00
I-132	5.730e-12	1.504e-11	5.377e-12	5.046e-10	2.358e-11	0.000e+00	6.527e-12	0.000e+00
I-133	1.438e-10	2.443e-10	7.448e-11	3.411e-08	4.283e-10	0.000e+00	1.847e-10	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

3.879e-01 8.841e-02 8.841e-02 8.987e-02 8.842e-02 8.841e-02 8.841e-02 0.000e+00

Receptor Name: Site Boundary / Adult

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin

Inhalation									
	H-3	0.000e+00	8.866e-03	8.866e-03	8.866e-03	8.866e-03	8.866e-03	8.866e-03	0.000e+00
	C-14	9.624e-03	1.803e-03	1.803e-03	1.803e-03	1.803e-03	1.803e-03	1.803e-03	0.000e+00
	I-131	3.378e-08	4.799e-08	2.748e-08	1.595e-05	8.218e-08	0.000e+00	8.419e-09	0.000e+00
	I-132	3.089e-08	8.682e-08	3.089e-08	3.036e-06	1.379e-07	0.000e+00	1.081e-08	0.000e+00
	I-133	1.504e-10	2.577e-10	7.870e-11	3.744e-08	4.492e-10	0.000e+00	1.546e-10	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

9.624e-03 1.067e-02 1.067e-02 1.069e-02 1.067e-02 1.067e-02 1.067e-02 1.067e-02 0.000e+00

Receptor Name: Site Boundary / Child

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin

Inhalation									
	H-3	0.000e+00	7.903e-03	7.903e-03	7.903e-03	7.903e-03	7.903e-03	7.903e-03	0.000e+00
	C-14	1.898e-02	3.559e-03	3.559e-03	3.559e-03	3.559e-03	3.559e-03	3.559e-03	0.000e+00
	I-131	6.448e-08	6.448e-08	3.660e-08	2.172e-05	1.056e-07	0.000e+00	3.807e-09	0.000e+00
	I-132	5.646e-08	1.084e-07	5.007e-08	5.166e-06	1.664e-07	0.000e+00	8.522e-08	0.000e+00
	I-133	2.890e-10	3.535e-10	1.341e-10	6.704e-08	5.885e-10	0.000e+00	9.542e-11	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

1.898e-02 1.146e-02 1.146e-02 1.149e-02 1.146e-02 1.146e-02 1.146e-02 1.146e-02 0.000e+00

Receptor Name: Site Boundary / Infant

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin

Inhalation									
	H-3	0.000e+00	4.544e-03	4.544e-03	4.544e-03	4.544e-03	4.544e-03	4.544e-03	0.000e+00
	C-14	1.401e-02	2.808e-03	2.808e-03	2.808e-03	2.808e-03	2.808e-03	2.808e-03	0.000e+00
	I-131	5.081e-08	5.952e-08	2.628e-08	1.984e-05	6.944e-08	0.000e+00	1.421e-09	0.000e+00
	I-132	4.501e-08	9.427e-08	3.356e-08	4.501e-06	1.052e-07	0.000e+00	5.060e-08	0.000e+00
	I-133	2.298e-10	3.343e-10	9.751e-11	6.199e-08	3.900e-10	0.000e+00	3.761e-11	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

1.401e-02 7.352e-03 7.352e-03 7.376e-03 7.352e-03 7.352e-03 7.352e-03 7.352e-03 0.000e+00

Receptor Name: Site Boundary / Teenager

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin

Inhalation									
	H-3	0.000e+00	8.952e-03	8.952e-03	8.952e-03	8.952e-03	8.952e-03	8.952e-03	0.000e+00
	C-14	1.375e-02	2.575e-03	2.575e-03	2.575e-03	2.575e-03	2.575e-03	2.575e-03	0.000e+00
	I-131	4.746e-08	6.582e-08	3.539e-08	1.957e-05	1.126e-07	0.000e+00	8.700e-09	0.000e+00
	I-132	4.234e-08	1.166e-07	4.208e-08	4.021e-06	1.843e-07	0.000e+00	3.382e-08	0.000e+00
	I-133	2.124e-10	3.570e-10	1.083e-10	5.084e-08	6.251e-10	0.000e+00	1.793e-10	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

1.375e-02 1.153e-02 1.153e-02 1.155e-02 1.153e-02 1.153e-02 1.153e-02 1.153e-02 0.000e+00

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RELEASE AND DOSE SUMMARY REPORT PARAMETERS

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Date.....: 3/22/2017 11:47:27 AM

Database.....: BWOpenEMS_PROD

Username.....: Admin

Permit Type.....: Gas

Start Date.....: 01/01/2016

End Date.....: 12/31/2016

Unit.....: Unit 2 Braidwood

Scaling Factor.....: 1.000

Dose Projection Option: No Dose Projection

Prorate Option.....: Doses Not Prorated for period

 Only Permits which have a release start date in the start/end period are

included with no pro-rating.

Sum By.....: Receptor, Pathway, and Nuclide

Include Open Permits...: No

Release Sources.....: U1/U2 Gas Abnormal Batch Rel

 U1/U2 Gas Abnormal Cont Rel

 Unit 2 Containment Purge

 Unit 2 DDAF Batch Rel

 Unit 2 Stack

 Waste Gas Decay Tank - A

 Waste Gas Decay Tank - B

 Waste Gas Decay Tank - C

 Waste Gas Decay Tank - D

 Waste Gas Decay Tank - E

 Waste Gas Decay Tank - F

Pathways.....: Cow Milk

 Ground Plane

 Inhalation

 Meat

 Vegetation

Receptors.....: Critical Receptor / Adult

 Critical Receptor / Child

 Critical Receptor / Infant

 Critical Receptor / Teenager

 Site Boundary / Adult

 Site Boundary / Child

 Site Boundary / Infant

 Site Boundary / Teenager

Nuclides.....: H-3,C-14,Br-82,Cd-109,I-131,I-132,I-133,Xe-133,Xe-135

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RELEASE TOTALS BY RELEASE MODE

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Release Mode.....: Mixed

Release Duration.....: 5.438e+05 minutes

Release Volume.....: 7.084e+10 cf

Average Flowrate.....: 1.303e+05 cfm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ECL MPC
H-3	1.116e+08	5.561e-08	7.515e-06
C-14	4.500e+06	2.243e-09	6.063e-07
I-132	4.812e+02	2.399e-13	2.161e-09
I-133	8.111e-04	4.043e-19	2.732e-14
Xe-133	7.264e+04	3.621e-11	3.262e-09
Xe-135	2.270e+03	1.131e-12	3.058e-10
TOTAL :	1.161e+08		8.127e-06

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NOBLE GAS DOSES BY RECEPTOR (Total Body, Skin Dose = mRem Gamma, Beta Dose = mRad)

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Receptor Name: Critical Receptor / Adult
 Receptor Name: Critical Receptor / Child
 Receptor Name: Critical Receptor / Infant
 Receptor Name: Critical Receptor / Teenager

Nuclide	Total Bod	Skin	Gamma	Beta
Xe-133	4.821e-07	1.461e-06	5.789e-07	2.808e-06
Xe-135	9.275e-08	2.646e-07	9.839e-08	2.056e-07
TOTAL:	5.749e-07	1.726e-06	6.773e-07	3.013e-06

Receptor Name: Site Boundary / Adult
 Receptor Name: Site Boundary / Child
 Receptor Name: Site Boundary / Infant
 Receptor Name: Site Boundary / Teenager

Nuclide	Total Bod	Skin	Gamma	Beta
Xe-133	4.821e-07	3.350e-06	5.789e-07	9.289e-06
Xe-135	9.275e-08	6.234e-07	9.839e-08	6.801e-07
TOTAL:	5.749e-07	3.973e-06	6.773e-07	9.969e-06

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ORGAN DOSES BY RECEPTOR (Dose = mRem)

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Receptor Name: Critical Receptor / Adult

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Cow Milk									
	H-3	0.000e+00	1.787e-03	1.787e-03	1.787e-03	1.787e-03	1.787e-03	1.787e-03	0.000e+00
	C-14	6.013e-02	1.203e-02	1.203e-02	1.203e-02	1.203e-02	1.203e-02	1.203e-02	0.000e+00
	I-132	4.129e-14	1.104e-13	3.863e-14	3.863e-12	1.759e-13	0.000e+00	2.074e-14	0.000e+00
	I-133	1.638e-12	2.849e-12	8.688e-13	4.188e-10	4.974e-12	0.000e+00	2.561e-12	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Ground Plane									
	I-132	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	0.000e+00
	I-133	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Inhalation									
	H-3	0.000e+00	2.949e-03	2.949e-03	2.949e-03	2.949e-03	2.949e-03	2.949e-03	0.000e+00
	C-14	3.015e-03	5.649e-04	5.649e-04	5.649e-04	5.649e-04	5.649e-04	5.649e-04	0.000e+00
	I-132	2.055e-08	5.775e-08	2.055e-08	2.019e-06	9.176e-08	0.000e+00	7.192e-09	0.000e+00
	I-133	2.580e-13	4.419e-13	1.350e-13	6.420e-11	7.704e-13	0.000e+00	2.652e-13	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Meat									
	H-3	0.000e+00	7.598e-04	7.598e-04	7.598e-04	7.598e-04	7.598e-04	7.598e-04	0.000e+00
	C-14	5.516e-02	1.103e-02	1.103e-02	1.103e-02	1.103e-02	1.103e-02	1.103e-02	0.000e+00
	I-132	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	I-133	1.563e-19	2.717e-19	8.282e-20	3.993e-17	4.733e-19	0.000e+00	2.442e-19	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Vegetation									
	H-3	0.000e+00	5.298e-03	5.298e-03	5.298e-03	5.298e-03	5.298e-03	5.298e-03	0.000e+00
	C-14	1.486e-01	2.965e-02	2.965e-02	2.965e-02	2.965e-02	2.965e-02	2.965e-02	0.000e+00
	I-132	1.399e-11	3.735e-11	1.309e-11	1.309e-09	5.966e-11	0.000e+00	7.019e-12	0.000e+00
	I-133	8.789e-13	1.530e-12	4.648e-13	2.248e-10	2.666e-12	0.000e+00	1.373e-12	0.000e+00

Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

2.669e-01 6.407e-02 6.407e-02 6.407e-02 6.407e-02 6.407e-02 6.407e-02 0.000e+00

Receptor Name: Critical Receptor / Child

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Cow Milk									
	H-3	0.000e+00	3.684e-03	3.684e-03	3.684e-03	3.684e-03	3.684e-03	3.684e-03	0.000e+00
	C-14	2.733e-01	5.450e-02	5.450e-02	5.450e-02	5.450e-02	5.450e-02	5.450e-02	0.000e+00
	I-132	1.732e-13	3.184e-13	1.464e-13	1.477e-11	4.863e-13	0.000e+00	3.735e-13	0.000e+00
	I-133	7.268e-12	9.000e-12	3.402e-12	1.669e-09	1.500e-11	0.000e+00	3.621e-12	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Ground Plane

	I-132	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	0.000e+00
	I-133	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Inhalation

	H-3	0.000e+00	2.629e-03	2.629e-03	2.629e-03	2.629e-03	2.629e-03	2.629e-03	0.000e+00
	C-14	5.947e-03	1.115e-03	1.115e-03	1.115e-03	1.115e-03	1.115e-03	1.115e-03	0.000e+00
	I-132	3.755e-08	7.210e-08	3.330e-08	3.437e-06	1.107e-07	0.000e+00	5.669e-08	0.000e+00
	I-133	4.957e-13	6.061e-13	2.299e-13	1.150e-10	1.009e-12	0.000e+00	1.636e-13	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Meat

	H-3	0.000e+00	5.504e-04	5.504e-04	5.504e-04	5.504e-04	5.504e-04	5.504e-04	0.000e+00
	C-14	8.763e-02	1.756e-02	1.756e-02	1.756e-02	1.756e-02	1.756e-02	1.756e-02	0.000e+00
	I-132	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	I-133	2.430e-19	3.000e-19	1.137e-19	5.578e-17	4.986e-19	0.000e+00	1.209e-19	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Vegetation

	H-3	0.000e+00	9.405e-03	9.405e-03	9.405e-03	9.405e-03	9.405e-03	9.405e-03	0.000e+00
	C-14	5.798e-01	1.161e-01	1.161e-01	1.161e-01	1.161e-01	1.161e-01	1.161e-01	0.000e+00
	I-132	2.239e-11	4.111e-11	1.890e-11	1.908e-09	6.292e-11	0.000e+00	4.838e-11	0.000e+00
	I-133	1.487e-12	1.842e-12	6.972e-13	3.418e-10	3.068e-12	0.000e+00	7.437e-13	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

9.467e-01 2.056e-01 2.056e-01 2.056e-01 2.056e-01 2.056e-01 2.056e-01 2.056e-01 0.000e+00

Receptor Name: Critical Receptor / Infant

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Cow Milk									
	H-3	0.000e+00	5.586e-03	5.586e-03	5.586e-03	5.586e-03	5.586e-03	5.586e-03	0.000e+00
	C-14	5.351e-01	1.141e-01	1.141e-01	1.141e-01	1.141e-01	1.141e-01	1.141e-01	0.000e+00
	I-132	3.585e-13	7.295e-13	2.607e-13	3.409e-11	8.147e-13	0.000e+00	5.916e-13	0.000e+00
	I-133	1.534e-11	2.235e-11	6.550e-12	4.065e-09	2.628e-11	0.000e+00	3.782e-12	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Ground Plane

	I-132	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	0.000e+00
	I-133	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	0.000e+00
	Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
	Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Inhalation

	H-3	0.000e+00	1.511e-03	1.511e-03	1.511e-03	1.511e-03	1.511e-03	1.511e-03	0.000e+00
	C-14	4.390e-03	8.796e-04	8.796e-04	8.796e-04	8.796e-04	8.796e-04	8.796e-04	0.000e+00

I-132	2.994e-08	6.271e-08	2.232e-08	2.994e-06	6.997e-08	0.000e+00	3.366e-08	0.000e+00
I-133	3.941e-13	5.733e-13	1.672e-13	1.063e-10	6.689e-13	0.000e+00	6.450e-14	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

5.395e-01	1.221e-01	1.221e-01	1.221e-01	1.221e-01	1.221e-01	1.221e-01	1.221e-01	0.000e+00
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Receptor Name: Critical Receptor / Teenager

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Cow Milk									
H-3	0.000e+00	2.325e-03	2.325e-03	2.325e-03	2.325e-03	2.325e-03	2.325e-03	2.325e-03	0.000e+00
C-14	1.110e-01	2.220e-02	2.220e-02	2.220e-02	2.220e-02	2.220e-02	2.220e-02	2.220e-02	0.000e+00
I-132	7.320e-14	1.915e-13	6.869e-14	6.443e-12	3.008e-13	0.000e+00	8.348e-14	0.000e+00	
I-133	2.992e-12	5.071e-12	1.547e-12	7.099e-10	8.916e-12	0.000e+00	3.841e-12	0.000e+00	
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	

Ground Plane

I-132	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	3.134e-07	0.000e+00
I-133	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	1.035e-12	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Inhalation

H-3	0.000e+00	2.978e-03	2.978e-03	2.978e-03	2.978e-03	2.978e-03	2.978e-03	2.978e-03	0.000e+00
C-14	4.307e-03	8.067e-04	8.067e-04	8.067e-04	8.067e-04	8.067e-04	8.067e-04	8.067e-04	0.000e+00
I-132	2.817e-08	7.759e-08	2.799e-08	2.675e-06	1.226e-07	0.000e+00	2.250e-08	0.000e+00	
I-133	3.643e-13	6.121e-13	1.857e-13	8.719e-11	1.072e-12	0.000e+00	3.076e-13	0.000e+00	
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	

Meat

H-3	0.000e+00	4.518e-04	4.518e-04	4.518e-04	4.518e-04	4.518e-04	4.518e-04	4.518e-04	0.000e+00
C-14	4.655e-02	9.310e-03	9.310e-03	9.310e-03	9.310e-03	9.310e-03	9.310e-03	9.310e-03	0.000e+00
I-132	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	
I-133	1.306e-19	2.218e-19	6.761e-20	3.093e-17	3.888e-19	0.000e+00	1.678e-19	0.000e+00	
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	

Vegetation

H-3	0.000e+00	6.037e-03	6.037e-03	6.037e-03	6.037e-03	6.037e-03	6.037e-03	6.037e-03	0.000e+00
C-14	2.402e-01	4.821e-02	4.821e-02	4.821e-02	4.821e-02	4.821e-02	4.821e-02	4.821e-02	0.000e+00
I-132	1.261e-11	3.309e-11	1.183e-11	1.111e-09	5.189e-11	0.000e+00	1.436e-11	0.000e+00	
I-133	8.155e-13	1.386e-12	4.226e-13	1.935e-10	2.430e-12	0.000e+00	1.048e-12	0.000e+00	
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	

ALL PATHWAYS/NUCLIDES TOTAL:

4.020e-01	9.231e-02	9.231e-02	9.232e-02	9.231e-02	9.231e-02	9.231e-02	9.231e-02	0.000e+00
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Receptor Name: Site Boundary / Adult

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Inhalation									
H-3	0.000e+00	9.756e-03	9.756e-03	9.756e-03	9.756e-03	9.756e-03	9.756e-03	9.756e-03	0.000e+00
C-14	9.974e-03	1.869e-03	1.869e-03	1.869e-03	1.869e-03	1.869e-03	1.869e-03	1.869e-03	0.000e+00
I-132	6.798e-08	1.911e-07	6.798e-08	6.681e-06	3.036e-07	0.000e+00	2.379e-08	0.000e+00	
I-133	8.535e-13	1.462e-12	4.465e-13	2.124e-10	2.549e-12	0.000e+00	8.772e-13	0.000e+00	
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	
Xe-135	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	

ALL PATHWAYS/NUCLIDES TOTAL:

9.975e-03	1.163e-02	1.162e-02	1.163e-02	1.163e-02	1.162e-02	1.162e-02	1.162e-02	0.000e+00
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Receptor Name: Site Boundary / Child

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
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Inhalation
H-3      0.000e+00 8.696e-03 8.696e-03 8.696e-03 8.696e-03 8.696e-03 8.696e-03 8.696e-03 0.000e+00
C-14    1.967e-02 3.688e-03 3.688e-03 3.688e-03 3.688e-03 3.688e-03 3.688e-03 3.688e-03 0.000e+00
I-132   1.242e-07 2.385e-07 1.102e-07 1.137e-05 3.663e-07 0.000e+00 1.875e-07 0.000e+00
I-133   1.640e-12 2.005e-12 7.606e-13 3.803e-10 3.339e-12 0.000e+00 5.413e-13 0.000e+00
Xe-133  0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
Xe-135  0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
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ALL PATHWAYS/NUCLIDES TOTAL:
1.968e-02 1.238e-02 1.238e-02 1.240e-02 1.238e-02 1.238e-02 1.238e-02 1.238e-02 0.000e+00

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Receptor Name: Site Boundary / Infant
Pathway  Nuclide Bone      Liver      Total Bod Thyroid  Kidney  Lung      GI-Lli  Skin
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Inhalation
H-3      0.000e+00 5.000e-03 5.000e-03 5.000e-03 5.000e-03 5.000e-03 5.000e-03 0.000e+00
C-14    1.452e-02 2.910e-03 2.910e-03 2.910e-03 2.910e-03 2.910e-03 2.910e-03 0.000e+00
I-132   9.904e-08 2.075e-07 7.384e-08 9.904e-06 2.315e-07 0.000e+00 1.113e-07 0.000e+00
I-133   1.304e-12 1.897e-12 5.532e-13 3.517e-10 2.213e-12 0.000e+00 2.134e-13 0.000e+00
Xe-133  0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
Xe-135  0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
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ALL PATHWAYS/NUCLIDES TOTAL:
1.452e-02 7.911e-03 7.911e-03 7.920e-03 7.911e-03 7.910e-03 7.911e-03 0.000e+00

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Receptor Name: Site Boundary / Teenager
Pathway  Nuclide Bone      Liver      Total Bod Thyroid  Kidney  Lung      GI-Lli  Skin
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Inhalation
H-3      0.000e+00 9.851e-03 9.851e-03 9.851e-03 9.851e-03 9.851e-03 9.851e-03 0.000e+00
C-14    1.425e-02 2.669e-03 2.669e-03 2.669e-03 2.669e-03 2.669e-03 2.669e-03 0.000e+00
I-132   9.318e-08 2.567e-07 9.260e-08 8.849e-06 4.055e-07 0.000e+00 7.443e-08 0.000e+00
I-133   1.205e-12 2.025e-12 6.144e-13 2.885e-10 3.546e-12 0.000e+00 1.017e-12 0.000e+00
Xe-133  0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
Xe-135  0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00
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ALL PATHWAYS/NUCLIDES TOTAL:
1.425e-02 1.252e-02 1.252e-02 1.253e-02 1.252e-02 1.252e-02 1.252e-02 0.000e+00

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RELEASE AND DOSE SUMMARY REPORT PARAMETERS

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Date.....: 4/12/2017 11:58:20 AM

Database.....: BWDOpenEMS_PROD

Username.....: Admin

Permit Type.....: Liquid

Start Date.....: 01/01/2016

End Date.....: 12/31/2016

Unit.....: Unit 1 Braidwood

Scaling Factor.....: 1.000

Dose Projection Option: No Dose Projection

Prorate Option.....: Doses Not Prorated for period

 Only Permits which have a release start date in the start/end period are included

with no pro-rating.

Sum By.....: Receptor, Pathway, and Nuclide

Include Open Permits...: No

Release Sources.....: Circ Water Blowdown

 Condensate Polisher Sump

 Liquid Release Tank OWX01T

 Liquid Release Tank OWX26T

 Waste Water Treatment

Pathways.....: Potable Water

 Sport Freshwater Fish

Receptors.....: Liquid Receptor / Adult

 Liquid Receptor / Child

 Liquid Receptor / Infant

 Liquid Receptor / Teenager

Nuclides.....: H-3,Cr-51,Mn-54,Fe-55,Fe-59,Co-57,Co-58,Co-60,Zn-65

 Zr-95,Nb-95,Nb-97,Ag-110m,Sn-113,Sb-124,Sb-125,Te-123m

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RELEASE TOTALS BY DISCHARGE POINT

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Discharge Point.....: Kankakee River

Release Duration.....: 8.946e+04 minutes

Release Volume.....: 1.043e+06 gal

Average Flowrate.....: 1.166e+01 gpm

Dilution Volume.....: 1.803e+09 gal

Average Dil Flowrate...: 2.016e+04 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	1.470e+09	3.724e-01	1.007e-02	2.153e-04	5.818e-06
Cr-51	1.263e+03	3.199e-07	1.729e-08	1.849e-10	9.993e-12
Mn-54	2.485e+02	6.295e-08	5.671e-08	3.638e-11	3.278e-11
Fe-55	4.208e+03	1.066e-06	2.881e-07	6.161e-10	1.665e-10
Fe-59	2.758e+01	6.987e-09	1.888e-08	4.038e-12	1.091e-11
Co-57	2.135e+01	5.409e-09	2.437e-09	3.127e-12	1.408e-12
Co-58	1.629e+03	4.126e-07	5.576e-07	2.385e-10	3.223e-10
Co-60	6.107e+03	1.547e-06	1.394e-05	8.942e-10	8.056e-09
Zr-95	2.538e+01	6.429e-09	8.687e-09	3.716e-12	5.021e-12
Nb-95	1.943e+02	4.922e-08	4.434e-08	2.845e-11	2.563e-11
Nb-97	3.120e+02	7.904e-08	7.121e-09	4.568e-11	4.116e-12
Ag-110m	2.594e+02	6.572e-08	2.960e-07	3.799e-11	1.711e-10
Sn-113	3.922e+01	9.936e-09	8.951e-09	5.743e-12	5.174e-12
Sb-124	2.463e+01	6.240e-09	2.409e-08	3.607e-12	1.393e-11
Sb-125	4.866e+02	1.233e-07	1.111e-07	7.125e-11	6.419e-11
Te-123m	1.600e+01	4.054e-09	N/A	2.343e-12	N/A
Te-132	4.139e+00	1.048e-09	3.148e-09	6.060e-13	1.820e-12
Xe-133	3.881e+01	9.831e-09	1.329e-09	5.682e-12	7.679e-13
TOTAL :	1.470e+09		1.008e-02		5.827e-06

Discharge Point.....: KR - Circ Water Blowdown
 Release Duration.....: 2.847e+05 minutes
 Release Volume.....: 5.855e+09 gal
 Average Flowrate.....: 2.056e+04 gpm
 Dilution Volume.....: 0.000e+00 gal
 Average Dil Flowrate..: 0.000e+00 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	2.246e+08	1.013e-05	2.739e-07	1.013e-05	2.739e-07
TOTAL :	2.246e+08		2.739e-07		2.739e-07

Discharge Point.....: Braidwood Lake
 Release Duration.....: 5.693e+05 minutes
 Release Volume.....: 1.307e+07 gal
 Average Flowrate.....: 2.296e+01 gpm
 Dilution Volume.....: 0.000e+00 gal
 Average Dil Flowrate..: 0.000e+00 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	9.192e+05	1.858e-05	5.021e-07	1.858e-05	5.021e-07
TOTAL :	9.192e+05		5.021e-07		5.021e-07

Discharge Point.....: ALL DISCHARGE POINTS
 Release Duration.....: 9.435e+05 minutes
 Release Volume.....: 5.869e+09 gal
 Average Flowrate.....: 6.221e+03 gpm
 Dilution Volume.....: 1.803e+09 gal
 Average Dil Flowrate..: 1.911e+03 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	1.696e+09	7.632e-05	2.063e-06	5.838e-05	1.578e-06
Cr-51	1.263e+03	5.683e-11	3.072e-12	4.347e-11	2.350e-12
Mn-54	2.485e+02	1.118e-11	1.008e-11	8.556e-12	7.708e-12
Fe-55	4.208e+03	1.894e-10	5.118e-11	1.449e-10	3.915e-11
Fe-59	2.758e+01	1.241e-12	3.355e-12	9.496e-13	2.567e-12
Co-57	2.135e+01	9.611e-13	4.329e-13	7.352e-13	3.312e-13
Co-58	1.629e+03	7.331e-11	9.906e-11	5.608e-11	7.578e-11
Co-60	6.107e+03	2.749e-10	2.476e-09	2.103e-10	1.894e-09
Zr-95	2.538e+01	1.142e-12	1.543e-12	8.737e-13	1.181e-12
Nb-95	1.943e+02	8.745e-12	7.878e-12	6.690e-12	6.027e-12
Nb-97	3.120e+02	1.404e-11	1.265e-12	1.074e-11	9.678e-13
Ag-110m	2.594e+02	1.168e-11	5.260e-11	8.932e-12	4.024e-11
Sn-113	3.922e+01	1.765e-12	1.590e-12	1.350e-12	1.217e-12
Sb-124	2.463e+01	1.109e-12	4.281e-12	8.482e-13	3.275e-12
Sb-125	4.866e+02	2.190e-11	1.973e-11	1.675e-11	1.509e-11
Te-123m	1.600e+01	7.202e-13	N/A	5.509e-13	N/A
Te-132	4.139e+00	1.863e-13	5.594e-13	1.425e-13	4.279e-13
Xe-133	3.881e+01	1.747e-12	2.360e-13	1.336e-12	1.806e-13
TOTAL :	1.696e+09		2.065e-06		1.580e-06

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ORGAN DOSES BY RECEPTOR (Dose = mRem)

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Receptor Name:	Liquid Receptor / Adult								
Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Potable Water									
	H-3	0.000e+00	2.597e-02	2.597e-02	2.597e-02	2.597e-02	2.597e-02	2.597e-02	0.000e+00
	Cr-51	0.000e+00	0.000e+00	3.552e-11	2.126e-11	7.837e-12	4.715e-11	8.929e-09	0.000e+00
	Mn-54	0.000e+00	9.306e-09	1.771e-09	0.000e+00	2.769e-09	0.000e+00	2.848e-08	0.000e+00

Fe-55	1.243e-07	8.586e-08	2.004e-08	0.000e+00	0.000e+00	4.804e-08	4.934e-08	0.000e+00
Fe-59	1.200e-09	2.818e-09	1.081e-09	0.000e+00	0.000e+00	7.883e-10	9.399e-09	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	1.383e-08	3.097e-08	0.000e+00	0.000e+00	0.000e+00	2.802e-07	0.000e+00
Co-60	0.000e+00	1.074e-07	2.369e-07	0.000e+00	0.000e+00	0.000e+00	2.017e-06	0.000e+00
Zr-95	1.747e-11	5.613e-12	3.788e-12	0.000e+00	8.793e-12	0.000e+00	1.778e-08	0.000e+00
Nb-95	1.220e-11	6.810e-12	3.660e-12	0.000e+00	6.734e-12	0.000e+00	4.133e-08	0.000e+00
Nb-97	1.539e-13	3.891e-14	1.421e-14	0.000e+00	4.540e-14	0.000e+00	1.436e-10	0.000e+00
Ag-110m	3.604e-10	3.333e-10	1.980e-10	0.000e+00	6.547e-10	0.000e+00	1.364e-07	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.061e-09	2.005e-11	4.206e-10	2.573e-12	0.000e+00	8.261e-10	3.013e-08	0.000e+00
Sb-125	8.244e-09	9.211e-11	1.962e-09	8.382e-12	0.000e+00	6.356e-09	9.073e-08	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	3.587e-11	2.321e-11	2.177e-11	2.560e-11	2.239e-10	0.000e+00	1.095e-09	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Sport Freshwater Fish

H-3	0.000e+00	2.681e-03	2.681e-03	2.681e-03	2.681e-03	2.681e-03	2.681e-03	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.158e-10	4.888e-10	1.805e-10	1.086e-09	2.056e-07	0.000e+00
Mn-54	0.000e+00	4.286e-07	8.171e-08	0.000e+00	1.272e-07	0.000e+00	1.311e-06	0.000e+00
Fe-55	1.430e-06	9.891e-07	2.304e-07	0.000e+00	0.000e+00	5.521e-07	5.674e-07	0.000e+00
Fe-59	1.383e-08	3.244e-08	1.244e-08	0.000e+00	0.000e+00	9.066e-09	1.082e-07	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	7.961e-08	1.785e-07	0.000e+00	0.000e+00	0.000e+00	1.615e-06	0.000e+00
Co-60	0.000e+00	6.177e-07	1.363e-06	0.000e+00	0.000e+00	0.000e+00	1.161e-05	0.000e+00
Zr-95	6.636e-12	2.129e-12	1.441e-12	0.000e+00	3.346e-12	0.000e+00	6.746e-09	0.000e+00
Nb-95	4.228e-08	2.346e-08	1.267e-08	0.000e+00	2.327e-08	0.000e+00	1.428e-04	0.000e+00
Nb-97	5.312e-10	1.343e-10	4.905e-11	0.000e+00	1.567e-10	0.000e+00	4.956e-07	0.000e+00
Ag-110m	9.534e-11	8.820e-11	5.238e-11	0.000e+00	1.732e-10	0.000e+00	3.604e-08	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.221e-10	2.307e-12	4.840e-11	2.961e-13	0.000e+00	9.506e-11	3.466e-09	0.000e+00
Sb-125	9.486e-10	1.060e-11	2.258e-10	9.645e-13	0.000e+00	7.313e-10	1.044e-08	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	1.650e-09	1.068e-09	1.006e-09	1.177e-09	1.027e-08	0.000e+00	5.052e-08	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

1.625e-06	2.866e-02	2.866e-02	2.866e-02	2.866e-02	2.866e-02	2.866e-02	2.882e-02	0.000e+00
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Receptor Name: Liquid Receptor / Child

Pathway	Nuclide	Bone	Liver	Total	Bod	Thyroid	Kidney	Lung	GI-Ili	Skin

Potable Water										
H-3	0.000e+00	3.512e-02	3.512e-02	3.512e-02	3.512e-02	3.512e-02	3.512e-02	3.512e-02	3.512e-02	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.286e-11	4.612e-11	1.259e-11	8.415e-11	4.407e-09	0.000e+00	0.000e+00	0.000e+00
Mn-54	0.000e+00	1.527e-08	4.051e-09	0.000e+00	4.267e-09	0.000e+00	1.282e-08	0.000e+00	0.000e+00	0.000e+00
Fe-55	3.630e-07	1.928e-07	5.978e-08	0.000e+00	0.000e+00	1.089e-07	3.565e-08	0.000e+00	0.000e+00	0.000e+00
Fe-59	3.191e-09	5.158e-09	2.566e-09	0.000e+00	0.000e+00	1.502e-09	5.371e-09	0.000e+00	0.000e+00	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	2.338e-08	7.149e-08	0.000e+00	0.000e+00	0.000e+00	1.365e-07	0.000e+00	0.000e+00	0.000e+00
Co-60	0.000e+00	1.855e-07	5.477e-07	0.000e+00	0.000e+00	0.000e+00	1.028e-06	0.000e+00	0.000e+00	0.000e+00
Zr-95	4.673e-11	1.026e-11	9.124e-12	0.000e+00	1.468e-11	0.000e+00	1.070e-08	0.000e+00	0.000e+00	0.000e+00
Nb-95	3.093e-11	1.201e-11	8.607e-12	0.000e+00	1.135e-11	0.000e+00	2.223e-08	0.000e+00	0.000e+00	0.000e+00
Nb-97	4.469e-13	8.074e-14	3.769e-14	0.000e+00	8.959e-14	0.000e+00	2.492e-08	0.000e+00	0.000e+00	0.000e+00
Ag-110m	8.474e-10	5.725e-10	4.578e-10	0.000e+00	1.066e-09	0.000e+00	6.807e-08	0.000e+00	0.000e+00	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	2.939e-09	3.812e-11	1.030e-09	6.486e-12	0.000e+00	1.631e-09	1.837e-08	0.000e+00	0.000e+00	0.000e+00
Sb-125	2.304e-08	1.776e-10	4.826e-09	2.133e-11	0.000e+00	1.284e-08	5.502e-08	0.000e+00	0.000e+00	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	1.006e-10	4.450e-11	5.374e-11	6.476e-11	4.128e-10	0.000e+00	4.477e-10	0.000e+00	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Sport Freshwater Fish

H-3	0.000e+00	1.706e-03	1.706e-03	1.706e-03	1.706e-03	1.706e-03	1.706e-03	1.706e-03	0.000e+00	
Cr-51	0.000e+00	0.000e+00	8.993e-10	4.991e-10	1.362e-10	9.122e-10	4.773e-08	0.000e+00	0.000e+00	0.000e+00
Mn-54	0.000e+00	3.298e-07	8.778e-08	0.000e+00	9.238e-08	0.000e+00	2.769e-07	0.000e+00	0.000e+00	0.000e+00
Fe-55	1.967e-06	1.043e-06	3.239e-07	0.000e+00	0.000e+00	5.891e-07	1.932e-07	0.000e+00	0.000e+00	0.000e+00
Fe-59	1.728e-08	2.792e-08	1.396e-08	0.000e+00	0.000e+00	8.096e-09	2.911e-08	0.000e+00	0.000e+00	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	6.319e-08	1.937e-07	0.000e+00	0.000e+00	0.000e+00	3.686e-07	0.000e+00	0.000e+00	0.000e+00
Co-60	0.000e+00	5.019e-07	1.481e-06	0.000e+00	0.000e+00	0.000e+00	2.775e-06	0.000e+00	0.000e+00	0.000e+00
Zr-95	8.322e-12	1.830e-12	1.629e-12	0.000e+00	2.618e-12	0.000e+00	1.908e-09	0.000e+00	0.000e+00	0.000e+00
Nb-95	5.022e-08	1.958e-08	1.400e-08	0.000e+00	1.835e-08	0.000e+00	3.613e-05	0.000e+00	0.000e+00	0.000e+00
Nb-97	7.256e-10	1.311e-10	6.119e-11	0.000e+00	1.455e-10	0.000e+00	4.046e-05	0.000e+00	0.000e+00	0.000e+00

Ag-110m	1.055e-10	7.132e-11	5.692e-11	0.000e+00	1.331e-10	0.000e+00	8.474e-09	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.590e-10	2.063e-12	5.573e-11	3.510e-13	0.000e+00	0.000e+00	8.825e-11	9.943e-10
Sb-125	1.247e-09	9.612e-12	2.612e-10	1.154e-12	0.000e+00	6.948e-10	2.978e-09	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	2.177e-09	9.652e-10	1.164e-09	1.403e-09	8.968e-09	0.000e+00	9.721e-09	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

2.432e-06	3.683e-02	3.683e-02	3.682e-02	3.682e-02	3.682e-02	3.682e-02	3.691e-02	0.000e+00
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Receptor Name: Liquid Receptor / Infant

Pathway Nuclide Bone Liver Total Bod Thyroid Kidney Lung GI-Lli Skin

Potable Water

H-3	0.000e+00	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.543e-11	5.556e-11	1.214e-11	1.079e-10	2.486e-09	0.000e+00	0.000e+00
Mn-54	0.000e+00	1.830e-08	4.149e-09	0.000e+00	4.061e-09	0.000e+00	6.733e-09	0.000e+00	0.000e+00
Fe-55	2.848e-07	1.837e-07	4.913e-08	0.000e+00	0.000e+00	8.978e-08	2.326e-08	0.000e+00	0.000e+00
Fe-59	3.855e-09	6.727e-09	2.645e-09	0.000e+00	0.000e+00	1.994e-09	3.217e-09	0.000e+00	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	3.025e-08	7.541e-08	0.000e+00	0.000e+00	0.000e+00	7.532e-08	0.000e+00	0.000e+00
Co-60	0.000e+00	2.461e-07	5.791e-07	0.000e+00	0.000e+00	0.000e+00	5.839e-07	0.000e+00	0.000e+00
Zr-95	5.364e-11	1.305e-11	9.263e-12	0.000e+00	1.407e-11	0.000e+00	6.498e-09	0.000e+00	0.000e+00
Nb-95	3.736e-11	1.542e-11	8.900e-12	0.000e+00	1.107e-11	0.000e+00	1.296e-08	0.000e+00	0.000e+00
Nb-97	6.031e-16	1.286e-16	4.638e-17	0.000e+00	1.005e-16	0.000e+00	4.060e-11	0.000e+00	0.000e+00
Ag-110m	1.014e-09	7.402e-10	4.892e-10	0.000e+00	1.058e-09	0.000e+00	3.842e-08	0.000e+00	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	3.666e-09	5.396e-11	1.136e-09	9.730e-12	0.000e+00	2.295e-09	1.131e-08	0.000e+00	0.000e+00
Sb-125	2.560e-08	2.477e-10	5.265e-09	3.205e-11	0.000e+00	1.402e-08	3.413e-08	0.000e+00	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	1.342e-10	6.633e-11	6.188e-11	9.789e-11	4.148e-10	0.000e+00	2.451e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

3.191e-07	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	0.000e+00
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Receptor Name: Liquid Receptor / Teenager

Pathway Nuclide Bone Liver Total Bod Thyroid Kidney Lung GI-Lli Skin

Potable Water

H-3	0.000e+00	1.824e-02	1.824e-02	1.824e-02	1.824e-02	1.824e-02	1.824e-02	1.824e-02	0.000e+00
Cr-51	0.000e+00	0.000e+00	3.360e-11	1.869e-11	7.387e-12	4.798e-11	5.646e-09	0.000e+00	0.000e+00
Mn-54	0.000e+00	8.396e-09	1.664e-09	0.000e+00	2.505e-09	0.000e+00	1.722e-08	0.000e+00	0.000e+00
Fe-55	1.193e-07	8.478e-08	1.974e-08	0.000e+00	0.000e+00	5.369e-08	3.674e-08	0.000e+00	0.000e+00
Fe-59	1.134e-09	2.645e-09	1.022e-09	0.000e+00	0.000e+00	8.349e-10	6.261e-09	0.000e+00	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	1.258e-08	2.909e-08	0.000e+00	0.000e+00	0.000e+00	1.740e-07	0.000e+00	0.000e+00
Co-60	0.000e+00	9.844e-08	2.220e-07	0.000e+00	0.000e+00	0.000e+00	1.284e-06	0.000e+00	0.000e+00
Zr-95	1.656e-11	5.226e-12	3.594e-12	0.000e+00	7.687e-12	0.000e+00	1.206e-08	0.000e+00	0.000e+00
Nb-95	1.126e-11	6.271e-12	3.452e-12	0.000e+00	6.072e-12	0.000e+00	2.677e-08	0.000e+00	0.000e+00
Nb-97	1.518e-13	3.769e-14	1.376e-14	0.000e+00	4.407e-14	0.000e+00	9.000e-10	0.000e+00	0.000e+00
Ag-110m	3.225e-10	3.052e-10	1.861e-10	0.000e+00	5.822e-10	0.000e+00	8.571e-08	0.000e+00	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.025e-09	1.888e-11	3.997e-10	2.324e-12	0.000e+00	8.948e-10	2.065e-08	0.000e+00	0.000e+00
Sb-125	7.979e-09	8.719e-11	1.866e-09	7.625e-12	0.000e+00	7.014e-09	6.210e-08	0.000e+00	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	3.471e-11	2.197e-11	2.067e-11	2.321e-11	2.108e-10	0.000e+00	6.983e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Sport Freshwater Fish

H-3	0.000e+00	2.061e-03	2.061e-03	2.061e-03	2.061e-03	2.061e-03	2.061e-03	2.061e-03	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.415e-10	4.689e-10	1.850e-10	1.208e-09	1.420e-07	0.000e+00	0.000e+00
Mn-54	0.000e+00	4.208e-07	8.357e-08	0.000e+00	1.253e-07	0.000e+00	8.641e-07	0.000e+00	0.000e+00
Fe-55	1.498e-06	1.063e-06	2.478e-07	0.000e+00	0.000e+00	6.739e-07	4.608e-07	0.000e+00	0.000e+00
Fe-59	1.422e-08	3.323e-08	1.283e-08	0.000e+00	0.000e+00	1.048e-08	7.857e-08	0.000e+00	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	7.907e-08	1.821e-07	0.000e+00	0.000e+00	0.000e+00	1.089e-06	0.000e+00	0.000e+00
Co-60	0.000e+00	6.177e-07	1.392e-06	0.000e+00	0.000e+00	0.000e+00	8.059e-06	0.000e+00	0.000e+00
Zr-95	6.857e-12	2.162e-12	1.488e-12	0.000e+00	3.180e-12	0.000e+00	5.005e-09	0.000e+00	0.000e+00
Nb-95	4.256e-08	2.365e-08	1.296e-08	0.000e+00	2.289e-08	0.000e+00	1.012e-04	0.000e+00	0.000e+00
Nb-97	5.714e-10	1.419e-10	5.179e-11	0.000e+00	1.659e-10	0.000e+00	3.388e-06	0.000e+00	0.000e+00
Ag-110m	9.307e-11	8.809e-11	5.357e-11	0.000e+00	1.677e-10	0.000e+00	2.478e-08	0.000e+00	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Sb-124	1.286e-10	2.369e-12	5.016e-11	2.917e-13	0.000e+00	1.123e-10	2.591e-09	0.000e+00
Sb-125	1.001e-09	1.094e-11	2.342e-10	9.569e-13	0.000e+00	8.802e-10	7.793e-09	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	1.746e-09	1.102e-09	1.041e-09	1.164e-09	1.061e-08	0.000e+00	3.498e-08	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

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 ALL PATHWAYS/NUCLIDES TOTAL:

	1.688e-06	2.031e-02	2.031e-02	2.031e-02	2.031e-02	2.031e-02	2.042e-02	0.000e+00
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RELEASE AND DOSE SUMMARY REPORT PARAMETERS

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Date.....: 4/12/2017 12:40:58 PM

Database.....: BWDOpenEMS_PROD

Username.....: Admin

Permit Type.....: Liquid

Start Date.....: 01/01/2016

End Date.....: 12/31/2016

Unit.....: Unit 2 Braidwood

Scaling Factor.....: 1.000

Dose Projection Option: No Dose Projection

Prorate Option.....: Doses Not Prorated for period

Only Permits which have a release start date in the start/end period are included

with no pro-rating.

Sum By.....: Receptor, Pathway, and Nuclide

Include Open Permits...: No

Release Sources.....: Circ Water Blowdown

 Condensate Polisher Sump

 Liquid Release Tank OWX01T

 Liquid Release Tank OWX26T

 Waste Water Treatment

Pathways.....: Potable Water

 Sport Freshwater Fish

Receptors.....: Liquid Receptor / Adult

 Liquid Receptor / Child

 Liquid Receptor / Infant

 Liquid Receptor / Teenager

Nuclides.....: H-3,Cr-51,Mn-54,Fe-55,Fe-59,Co-57,Co-58,Co-60,Zn-65

 Zr-95,Nb-95,Nb-97,Ag-110m,Sn-113,Sb-124,Sb-125,Te-123m

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RELEASE TOTALS BY DISCHARGE POINT

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Discharge Point.....: Kankakee River

Release Duration.....: 8.946e+04 minutes

Release Volume.....: 1.043e+06 gal

Average Flowrate.....: 1.166e+01 gpm

Dilution Volume.....: 1.803e+09 gal

Average Dil Flowrate...: 2.016e+04 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	1.470e+09	3.724e-01	1.007e-02	2.153e-04	5.818e-06
Cr-51	1.263e+03	3.199e-07	1.729e-08	1.849e-10	9.993e-12
Mn-54	2.485e+02	6.295e-08	5.671e-08	3.638e-11	3.278e-11
Fe-55	4.208e+03	1.066e-06	2.881e-07	6.161e-10	1.665e-10
Fe-59	2.758e+01	6.987e-09	1.888e-08	4.038e-12	1.091e-11
Co-57	2.135e+01	5.409e-09	2.437e-09	3.127e-12	1.408e-12
Co-58	1.629e+03	4.126e-07	5.576e-07	2.385e-10	3.223e-10
Co-60	6.107e+03	1.547e-06	1.394e-05	8.942e-10	8.056e-09
Zr-95	2.538e+01	6.429e-09	8.687e-09	3.716e-12	5.021e-12
Nb-95	1.943e+02	4.922e-08	4.434e-08	2.845e-11	2.563e-11
Nb-97	3.120e+02	7.904e-08	7.121e-09	4.568e-11	4.116e-12
Ag-110m	2.594e+02	6.572e-08	2.960e-07	3.799e-11	1.711e-10
Sn-113	3.922e+01	9.936e-09	8.951e-09	5.743e-12	5.174e-12
Sb-124	2.463e+01	6.240e-09	2.409e-08	3.607e-12	1.393e-11
Sb-125	4.866e+02	1.233e-07	1.111e-07	7.125e-11	6.419e-11
Te-123m	1.600e+01	4.054e-09	N/A	2.343e-12	N/A
Te-132	4.139e+00	1.048e-09	3.148e-09	6.060e-13	1.820e-12
Xe-133	3.881e+01	9.831e-09	1.329e-09	5.682e-12	7.679e-13
TOTAL :	1.470e+09		1.008e-02		5.827e-06

Discharge Point.....: KR - Circ Water Blowdown

Release Duration.....: 2.847e+05 minutes

Release Volume.....: 5.855e+09 gal

Average Flowrate.....: 2.056e+04 gpm
 Dilution Volume.....: 0.000e+00 gal
 Average Dil Flowrate...: 0.000e+00 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	2.246e+08	1.013e-05	2.739e-07	1.013e-05	2.739e-07
TOTAL :	2.246e+08		2.739e-07		2.739e-07

Discharge Point.....: Braidwood Lake
 Release Duration.....: 5.693e+05 minutes
 Release Volume.....: 1.307e+07 gal
 Average Flowrate.....: 2.296e+01 gpm
 Dilution Volume.....: 0.000e+00 gal
 Average Dil Flowrate...: 0.000e+00 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	9.192e+05	1.858e-05	5.021e-07	1.858e-05	5.021e-07
TOTAL :	9.192e+05		5.021e-07		5.021e-07

Discharge Point.....: ALL DISCHARGE POINTS
 Release Duration.....: 9.435e+05 minutes
 Release Volume.....: 5.869e+09 gal
 Average Flowrate.....: 6.221e+03 gpm
 Dilution Volume.....: 1.803e+09 gal
 Average Dil Flowrate...: 1.911e+03 gpm

.....Nuclide Detail.....

Nuclide	Activity (uCi)	Avg Conc (uCi/mL)	Avg Conc/ ECL MPC	Dil Conc (uCi/mL)	Dil Conc/ ECL MPC
H-3	1.696e+09	7.632e-05	2.063e-06	5.838e-05	1.578e-06
Cr-51	1.263e+03	5.683e-11	3.072e-12	4.347e-11	2.350e-12
Mn-54	2.485e+02	1.118e-11	1.008e-11	8.556e-12	7.708e-12
Fe-55	4.208e+03	1.894e-10	5.118e-11	1.449e-10	3.915e-11
Fe-59	2.758e+01	1.241e-12	3.355e-12	9.496e-13	2.567e-12
Co-57	2.135e+01	9.611e-13	4.329e-13	7.352e-13	3.312e-13
Co-58	1.629e+03	7.331e-11	9.906e-11	5.608e-11	7.578e-11
Co-60	6.107e+03	2.749e-10	2.476e-09	2.103e-10	1.894e-09
Zr-95	2.538e+01	1.142e-12	1.543e-12	8.737e-13	1.181e-12
Nb-95	1.943e+02	8.745e-12	7.878e-12	6.690e-12	6.027e-12
Nb-97	3.120e+02	1.404e-11	1.265e-12	1.074e-11	9.678e-13
Ag-110m	2.594e+02	1.168e-11	5.260e-11	8.932e-12	4.024e-11
Sn-113	3.922e+01	1.765e-12	1.590e-12	1.350e-12	1.217e-12
Sb-124	2.463e+01	1.109e-12	4.281e-12	8.482e-13	3.275e-12
Sb-125	4.866e+02	2.190e-11	1.973e-11	1.675e-11	1.509e-11
Te-123m	1.600e+01	7.202e-13	N/A	5.509e-13	N/A
Te-132	4.139e+00	1.863e-13	5.594e-13	1.425e-13	4.279e-13
Xe-133	3.881e+01	1.747e-12	2.360e-13	1.336e-12	1.806e-13
TOTAL :	1.696e+09		2.065e-06		1.580e-06

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ORGAN DOSES BY RECEPTOR (Dose = mRem)

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Receptor Name: Liquid Receptor / Adult

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin

Potable Water									
	H-3	0.000e+00	2.597e-02	2.597e-02	2.597e-02	2.597e-02	2.597e-02	2.597e-02	0.000e+00
	Cr-51	0.000e+00	0.000e+00	3.552e-11	2.126e-11	7.837e-12	4.715e-11	8.929e-09	0.000e+00
	Mn-54	0.000e+00	9.306e-09	1.771e-09	0.000e+00	2.769e-09	0.000e+00	2.848e-08	0.000e+00
	Fe-55	1.243e-07	8.586e-08	2.004e-08	0.000e+00	0.000e+00	4.804e-08	4.934e-08	0.000e+00
	Fe-59	1.200e-09	2.818e-09	1.081e-09	0.000e+00	0.000e+00	7.883e-10	9.399e-09	0.000e+00
	Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Co-58	0.000e+00	1.383e-08	3.097e-08	0.000e+00	0.000e+00	0.000e+00	2.802e-07	0.000e+00
Co-60	0.000e+00	1.074e-07	2.369e-07	0.000e+00	0.000e+00	0.000e+00	2.017e-06	0.000e+00
Zr-95	1.747e-11	5.613e-12	3.788e-12	0.000e+00	8.793e-12	0.000e+00	1.778e-08	0.000e+00
Nb-95	1.220e-11	6.810e-12	3.660e-12	0.000e+00	6.734e-12	0.000e+00	4.133e-08	0.000e+00
Nb-97	1.539e-13	3.891e-14	1.421e-14	0.000e+00	4.540e-14	0.000e+00	1.436e-10	0.000e+00
Ag-110m	3.604e-10	3.333e-10	1.980e-10	0.000e+00	6.547e-10	0.000e+00	1.364e-07	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.061e-09	2.005e-11	4.206e-10	2.573e-12	0.000e+00	8.261e-10	3.013e-08	0.000e+00
Sb-125	8.244e-09	9.211e-11	1.962e-09	8.382e-12	0.000e+00	6.356e-09	9.073e-08	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	3.587e-11	2.321e-11	2.177e-11	2.560e-11	2.239e-10	0.000e+00	1.095e-09	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Sport Freshwater Fish

H-3	0.000e+00	2.681e-03	2.681e-03	2.681e-03	2.681e-03	2.681e-03	2.681e-03	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.158e-10	4.888e-10	1.805e-10	1.086e-09	2.056e-07	0.000e+00
Mn-54	0.000e+00	4.286e-07	8.171e-08	0.000e+00	1.272e-07	0.000e+00	1.311e-06	0.000e+00
Fe-55	1.430e-06	9.891e-07	2.304e-07	0.000e+00	0.000e+00	5.521e-07	5.674e-07	0.000e+00
Fe-59	1.383e-08	3.244e-08	1.244e-08	0.000e+00	0.000e+00	9.066e-09	1.082e-07	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	7.961e-08	1.785e-07	0.000e+00	0.000e+00	0.000e+00	1.615e-06	0.000e+00
Co-60	0.000e+00	6.177e-07	1.363e-06	0.000e+00	0.000e+00	0.000e+00	1.161e-05	0.000e+00
Zr-95	6.636e-12	2.129e-12	1.441e-12	0.000e+00	3.346e-12	0.000e+00	6.746e-09	0.000e+00
Nb-95	4.228e-08	2.346e-08	1.267e-08	0.000e+00	2.327e-08	0.000e+00	1.428e-04	0.000e+00
Nb-97	5.312e-10	1.343e-10	4.905e-11	0.000e+00	1.567e-10	0.000e+00	4.956e-07	0.000e+00
Ag-110m	9.534e-11	8.820e-11	5.238e-11	0.000e+00	1.732e-10	0.000e+00	3.604e-08	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.221e-10	2.307e-12	4.840e-11	2.961e-13	0.000e+00	9.506e-11	3.466e-09	0.000e+00
Sb-125	9.486e-10	1.060e-11	2.258e-10	9.645e-13	0.000e+00	7.313e-10	1.044e-08	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	1.650e-09	1.068e-09	1.006e-09	1.177e-09	1.027e-08	0.000e+00	5.052e-08	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

1.625e-06 2.866e-02 2.866e-02 2.866e-02 2.866e-02 2.866e-02 2.866e-02 2.882e-02 0.000e+00

Receptor Name: Liquid Receptor / Child

Pathway Nuclide Bone Liver Total Bod Thyroid Kidney Lung GI-Lli Skin

Potable Water

H-3	0.000e+00	3.512e-02	3.512e-02	3.512e-02	3.512e-02	3.512e-02	3.512e-02	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.286e-11	4.612e-11	1.259e-11	8.415e-11	4.407e-09	0.000e+00
Mn-54	0.000e+00	1.527e-08	4.051e-09	0.000e+00	4.267e-09	0.000e+00	1.282e-08	0.000e+00
Fe-55	3.630e-07	1.928e-07	5.978e-08	0.000e+00	0.000e+00	1.089e-07	3.565e-08	0.000e+00
Fe-59	3.191e-09	5.158e-09	2.566e-09	0.000e+00	0.000e+00	1.502e-09	5.371e-09	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	2.338e-08	7.149e-08	0.000e+00	0.000e+00	0.000e+00	1.365e-07	0.000e+00
Co-60	0.000e+00	1.855e-07	5.477e-07	0.000e+00	0.000e+00	0.000e+00	1.028e-06	0.000e+00
Zr-95	4.673e-11	1.026e-11	9.124e-12	0.000e+00	1.468e-11	0.000e+00	1.070e-08	0.000e+00
Nb-95	3.093e-11	1.201e-11	8.607e-12	0.000e+00	1.135e-11	0.000e+00	2.223e-08	0.000e+00
Nb-97	4.469e-13	8.074e-14	3.769e-14	0.000e+00	8.959e-14	0.000e+00	2.492e-08	0.000e+00
Ag-110m	8.474e-10	5.725e-10	4.578e-10	0.000e+00	1.066e-09	0.000e+00	6.807e-08	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	2.939e-09	3.812e-11	1.030e-09	6.486e-12	0.000e+00	1.631e-09	1.837e-08	0.000e+00
Sb-125	2.304e-08	1.776e-10	4.826e-09	2.133e-11	0.000e+00	1.284e-08	5.502e-08	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	1.006e-10	4.450e-11	5.374e-11	6.476e-11	4.128e-10	0.000e+00	4.477e-10	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Sport Freshwater Fish

H-3	0.000e+00	1.706e-03	1.706e-03	1.706e-03	1.706e-03	1.706e-03	1.706e-03	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.993e-10	4.991e-10	1.362e-10	9.122e-10	4.773e-08	0.000e+00
Mn-54	0.000e+00	3.298e-07	8.778e-08	0.000e+00	9.238e-08	0.000e+00	2.769e-07	0.000e+00
Fe-55	1.967e-06	1.043e-06	3.239e-07	0.000e+00	0.000e+00	5.891e-07	1.932e-07	0.000e+00
Fe-59	1.728e-08	2.792e-08	1.396e-08	0.000e+00	0.000e+00	8.096e-09	2.911e-08	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	6.319e-08	1.937e-07	0.000e+00	0.000e+00	0.000e+00	3.686e-07	0.000e+00
Co-60	0.000e+00	5.019e-07	1.481e-06	0.000e+00	0.000e+00	0.000e+00	2.775e-06	0.000e+00
Zr-95	8.322e-12	1.830e-12	1.629e-12	0.000e+00	2.618e-12	0.000e+00	1.908e-09	0.000e+00
Nb-95	5.022e-08	1.958e-08	1.400e-08	0.000e+00	1.835e-08	0.000e+00	3.613e-05	0.000e+00
Nb-97	7.256e-10	1.311e-10	6.119e-11	0.000e+00	1.455e-10	0.000e+00	4.046e-05	0.000e+00
Ag-110m	1.055e-10	7.132e-11	5.692e-11	0.000e+00	1.331e-10	0.000e+00	8.474e-09	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.590e-10	2.063e-12	5.573e-11	3.510e-13	0.000e+00	8.825e-11	9.943e-10	0.000e+00

Sb-125	1.247e-09	9.612e-12	2.612e-10	1.154e-12	0.000e+00	6.948e-10	2.978e-09	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	2.177e-09	9.652e-10	1.164e-09	1.403e-09	8.968e-09	0.000e+00	9.721e-09	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

	2.432e-06	3.683e-02	3.683e-02	3.682e-02	3.682e-02	3.682e-02	3.691e-02	0.000e+00
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Receptor Name: Liquid Receptor / Infant

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Potable Water									
H-3	0.000e+00	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.543e-11	5.556e-11	1.214e-11	1.079e-10	2.486e-09	0.000e+00	0.000e+00
Mn-54	0.000e+00	1.830e-08	4.149e-09	0.000e+00	4.061e-09	0.000e+00	6.733e-09	0.000e+00	0.000e+00
Fe-55	2.848e-07	1.837e-07	4.913e-08	0.000e+00	0.000e+00	8.978e-08	5.329e-08	0.000e+00	0.000e+00
Fe-59	3.855e-09	6.727e-09	2.645e-09	0.000e+00	0.000e+00	1.994e-09	3.217e-09	0.000e+00	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	3.025e-08	7.541e-08	0.000e+00	0.000e+00	0.000e+00	7.532e-08	0.000e+00	0.000e+00
Co-60	0.000e+00	2.461e-07	5.791e-07	0.000e+00	0.000e+00	0.000e+00	5.839e-07	0.000e+00	0.000e+00
Zr-95	5.364e-11	1.305e-11	9.263e-12	0.000e+00	1.407e-11	0.000e+00	6.498e-09	0.000e+00	0.000e+00
Nb-95	3.736e-11	1.542e-11	8.900e-12	0.000e+00	1.107e-11	0.000e+00	1.296e-08	0.000e+00	0.000e+00
Nb-97	6.031e-16	1.286e-16	4.638e-17	0.000e+00	1.005e-16	0.000e+00	4.060e-11	0.000e+00	0.000e+00
Ag-110m	1.014e-09	7.402e-10	4.892e-10	0.000e+00	1.058e-09	0.000e+00	3.842e-08	0.000e+00	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	3.666e-09	5.396e-11	1.136e-09	9.730e-12	0.000e+00	2.295e-09	1.131e-08	0.000e+00	0.000e+00
Sb-125	2.560e-08	2.477e-10	5.265e-09	3.205e-11	0.000e+00	1.482e-08	3.413e-08	0.000e+00	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	1.342e-10	6.633e-11	6.188e-11	9.789e-11	4.148e-10	0.000e+00	2.451e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

	3.191e-07	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	3.449e-02	0.000e+00
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Receptor Name: Liquid Receptor / Teenager

Pathway	Nuclide	Bone	Liver	Total Bod	Thyroid	Kidney	Lung	GI-Lli	Skin
Potable Water									
H-3	0.000e+00	1.824e-02	1.824e-02	1.824e-02	1.824e-02	1.824e-02	1.824e-02	1.824e-02	0.000e+00
Cr-51	0.000e+00	0.000e+00	3.360e-11	1.869e-11	7.387e-12	4.798e-11	5.646e-09	0.000e+00	0.000e+00
Mn-54	0.000e+00	8.396e-09	1.664e-09	0.000e+00	2.505e-09	0.000e+00	1.722e-08	0.000e+00	0.000e+00
Fe-55	1.193e-07	8.478e-08	1.974e-08	0.000e+00	0.000e+00	5.369e-08	3.674e-08	0.000e+00	0.000e+00
Fe-59	1.134e-09	2.645e-09	1.022e-09	0.000e+00	0.000e+00	8.349e-10	6.261e-09	0.000e+00	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	1.258e-08	2.909e-08	0.000e+00	0.000e+00	0.000e+00	1.740e-07	0.000e+00	0.000e+00
Co-60	0.000e+00	9.844e-08	2.220e-07	0.000e+00	0.000e+00	0.000e+00	1.284e-06	0.000e+00	0.000e+00
Zr-95	1.656e-11	5.226e-12	3.594e-12	0.000e+00	7.687e-12	0.000e+00	1.206e-08	0.000e+00	0.000e+00
Nb-95	1.126e-11	6.271e-12	3.452e-12	0.000e+00	6.072e-12	0.000e+00	2.677e-08	0.000e+00	0.000e+00
Nb-97	1.518e-13	3.769e-14	1.376e-14	0.000e+00	4.407e-14	0.000e+00	9.000e-10	0.000e+00	0.000e+00
Ag-110m	3.225e-10	3.052e-10	1.861e-10	0.000e+00	5.822e-10	0.000e+00	8.571e-08	0.000e+00	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.025e-09	1.888e-11	3.997e-10	2.324e-12	0.000e+00	8.948e-10	2.065e-08	0.000e+00	0.000e+00
Sb-125	7.979e-09	8.719e-11	1.866e-09	7.625e-12	0.000e+00	7.014e-09	6.210e-08	0.000e+00	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Te-132	3.471e-11	2.197e-11	2.067e-11	2.321e-11	2.108e-10	0.000e+00	6.983e-10	0.000e+00	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Sport Freshwater Fish

H-3	0.000e+00	2.061e-03	2.061e-03	2.061e-03	2.061e-03	2.061e-03	2.061e-03	0.000e+00
Cr-51	0.000e+00	0.000e+00	8.415e-10	4.689e-10	1.850e-10	1.208e-09	1.420e-07	0.000e+00
Mn-54	0.000e+00	4.208e-07	8.357e-08	0.000e+00	1.253e-07	0.000e+00	8.641e-07	0.000e+00
Fe-55	1.498e-06	1.063e-06	2.478e-07	0.000e+00	0.000e+00	6.739e-07	4.608e-07	0.000e+00
Fe-59	1.422e-08	3.323e-08	1.283e-08	0.000e+00	0.000e+00	1.048e-08	7.857e-08	0.000e+00
Co-57	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Co-58	0.000e+00	7.907e-08	1.821e-07	0.000e+00	0.000e+00	0.000e+00	1.089e-06	0.000e+00
Co-60	0.000e+00	6.177e-07	1.392e-06	0.000e+00	0.000e+00	0.000e+00	8.059e-06	0.000e+00
Zr-95	6.857e-12	2.162e-12	1.488e-12	0.000e+00	3.180e-12	0.000e+00	5.005e-09	0.000e+00
Nb-95	4.256e-08	2.365e-08	1.296e-08	0.000e+00	2.289e-08	0.000e+00	1.012e-04	0.000e+00
Nb-97	5.714e-10	1.419e-10	5.179e-11	0.000e+00	1.659e-10	0.000e+00	3.388e-06	0.000e+00
Ag-110m	9.307e-11	8.809e-11	5.357e-11	0.000e+00	1.677e-10	0.000e+00	2.478e-08	0.000e+00
Sn-113	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00
Sb-124	1.286e-10	2.369e-12	5.016e-11	2.917e-13	0.000e+00	1.123e-10	2.591e-09	0.000e+00
Sb-125	1.001e-09	1.094e-11	2.342e-10	9.569e-13	0.000e+00	8.802e-10	7.793e-09	0.000e+00
Te-123m	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

Te-132	1.746e-09	1.102e-09	1.041e-09	1.164e-09	1.061e-08	0.000e+00	3.498e-08	0.000e+00
Xe-133	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00	0.000e+00

ALL PATHWAYS/NUCLIDES TOTAL:

	1.688e-06	2.031e-02	2.031e-02	2.031e-02	2.031e-02	2.031e-02	2.042e-02	0.000e+00
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