

Commonwealth Edison Company
Braidwood Generating Station
Route #1, Box 84
Braceville, IL 60407-9619
Tel 815-458-2801

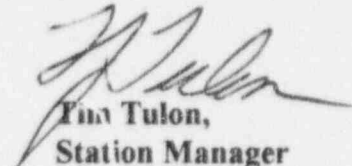
ComEd

BW/96-0023
February 20, 1996

DOCUMENT CONTROL DESK
U.S. NUCLEAR REGULATORY COMMISSION
MAIL STATION P1-137
Washington, D.C. 20555

Enclosed is the Braidwood Station Annual Effluent Report, Docket numbers STN 50-456 for January through December, 1995.

If you have any questions, please contact Jeffry W. Birkmeier at (815)458-2801, extension 2932.


Tina Tulon,
Station Manager
Braidwood Nuclear Station

TJT:JWB/mko

Enclosure

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

Supplemental Information

January - December 1995

Facility: BRAIDWOOD NUCLEAR POWER STATION

Licensee: COMMONWEALTH EDISON COMPANY

1. Regulatory Limits

a. For Noble Gases:

Dose Rate

- 1) Less than 500 mrem/year to the whole body.
- 2) Less than 3000 mrem/year to the skin.

Dose Gamma Radiation

- 1) Less than or equal to 5 mrad/quarter.
- 2) Less than or equal to 10 mrad/year.

Beta Radiation

- 1) Less than or equal to 10 mrad/quarter.
- 2) Less than or equal to 20 mrad/year.

b.,c. For Iodine-131, for Iodine-133, and for all radionuclides in particulate form with half-lives greater than 8 days.

Dose Rate

- 1) Less than 1500 mrem/year.

Dose

- 1) Less than or equal to 7.5 mrem/quarter.
- 2) Less than or equal to 15 mrem/year.

d. For Liquid

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

2. Maximum Permissible Concentration

- a., b., c., For fission and activation gases, iodines, and particulates with half-lives greater than 8 days, allowable release limits are calculated by solving equations 10.1 and 10.2 from the Offsite Dose Calculation Manual.
- d. For liquid effluents, allowable release limits are calculated by solving equations 10.3 and 10.4 from the Offsite Dose Calculation Manual.

3. Average Energy

The average gamma energy for the Braidwood noble gas waste streams were 0.081 MeV for Unit 1 and 0.085 MeV for Unit 2. The average beta energy for Braidwood noble gas waste streams were 0.108 MeV for Unit 1 and 0.108 MeV for Unit 2.

4. Measurements and Approximations of Total Radioactivity

- a. Fission and Activation Gases:
- b. Iodines:
- c. Particulates:

The Auxiliary Building ventilation exhaust system is continually monitored for iodines and particulates. These samples are pulled every 7 days and analyzed by gamma isotopic and gross alpha. Noble gas and tritium grab samples are pulled and analyzed by gamma isotopic weekly.

The average flow at the release points are used to calculate the curies released.

- d. Liquid Effluents

The liquid release tanks are analyzed before discharge by gamma isotopic and tritium. A composite representative portion of this sample saved. This is composited, every 31 days, with other discharges that occurred and is analyzed for tritium and gross alpha. The batch composites are composited quarterly and sent to a vendor for Sr-89/90 and Fe-55. Circulating Water Blowdown, Condensate Polisher Sump and Waste Water Treatment are composited quarterly and sent to a vendor for Sr-89/90 and Fe-55 analysis.

The tank volumes and activities are used to calculate the curies released for the liquid release tanks. The total water released and the activity is used to calculate the diluted activity released at the discharge point from batch discharges.

- e. Less than the lower limit of detection (<LLD).

Samples are analyzed such that the Technical Specification LLD requirements are met. When a nuclide is not detected during the quarter then <LLD is reported.

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 LIQUID RELEASES
 UNIT 1 (Docket Number 50-456)
 SUMMATION OF ALL RELEASES

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

1. Total Activity Released	Ci	5.95E-02	1.64E-02	6.35E-02	2.63E-01	4.02E-01
2. Average Concentration Released	uCi/ml	2.13E-08	1.06E-08	7.45E-08	1.31E-07	5.58E-08

B. Tritium

1. Total Activity Released	Ci	2.98E+02	2.79E+02	2.26E+02	1.37E+02	9.40E+02
2. Average Concentration Released	uCi/ml	1.07E-04	1.81E-04	2.65E-04	6.81E-05	1.31E-04
3. % of Limit (1E-3 uCi/ml)	%	1.07E+01	1.81E+01	2.65E+01	6.81E+00	1.31E+01

C. Dissolved Noble Gases

1. Total Activity Released	Ci	9.05E-03	5.30E-04	2.76E-03	1.08E-04	1.24E-02
2. Average Concentration Released	uCi/ml	3.24E-09	3.43E-10	3.24E-09	5.37E-11	1.72E-09
3. % of Limit (2E-4 uCi/ml)	%	1.62E-03	1.72E-04	1.62E-03	2.69E-05	8.60E-04

D. Gross Alpha

1. Total Activity Released	Ci	<LLD	<LLD	<LLD	<LLD	0.00E+00
2. Average Concentration Released	uCi/ml	<LLD	<LLD	<LLD	<LLD	0.00E+00

E. Volume of Releases

1. Volume of Liquid Waste to Discharge	liters	3.29E+06	3.76E+06	2.47E+06	2.50E+06	1.20E+07
2. Volume of Dilution Water	liters	2.79E+09	1.54E+09	8.50E+08	2.01E+09	7.19E+09

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

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

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
LIQUID RELEASES
UNIT 1 (Docket Number 50-456)
BATCH MODE

Nuclides From Batch Releases	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
H-3	Ci	2.35E+02	2.33E+02	2.03E+02	1.17E+02	7.88E+02
Na-24	Ci	<LLD	<LLD	4.18E-06	6.95E-05	7.37E-05
Ar-41	Ci	<LLD	<LLD	<LLD	3.50E-05	3.50E-05
Cr-51	Ci	3.53E-03	2.69E-04	3.98E-05	2.61E-02	2.99E-02
Mn-54	Ci	7.95E-04	1.43E-04	2.81E-03	1.79E-03	5.54E-03
Fe-55	Ci	7.65E-03	8.85E-04	4.88E-03	9.30E-03	2.27E-02
Co-57	Ci	2.88E-05	<LLD	1.76E-04	1.72E-04	3.77E-04
Co-58	Ci	3.21E-02	6.75E-03	1.28E-02	9.45E-02	1.46E-01
Fe-59	Ci	2.74E-04	<LLD	1.42E-05	2.37E-03	2.66E-03
Co-60	Ci	4.96E-03	1.01E-03	2.72E-02	1.06E-02	4.38E-02
Ni-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	3.96E-05	3.96E-05
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	9.00E-03	<LLD	1.90E-03	<LLD	1.09E-02
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-92	Ci	<LLD	<LLD	3.32E-05	1.96E-05	5.28E-05
Nb-95	Ci	1.12E-03	2.78E-05	4.79E-04	2.89E-03	4.52E-03
Zr-95	Ci	5.90E-04	1.70E-05	9.95E-05	1.66E-03	2.37E-03
Zr-97	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-105	Ci	<LLD	<LLD	<LLD	1.24E-03	1.24E-03
Ag-110m	Ci	<LLD	3.29E-06	1.23E-04	1.31E-04	2.57E-04
Sn-113	Ci	2.27E-05	3.19E-06	6.05E-05	5.50E-05	1.41E-04
Sn-117m	Ci	<LLD	<LLD	<LLD	4.37E-05	4.37E-05
Sb-122	Ci	3.77E-05	<LLD	4.34E-05	4.19E-04	5.00E-04
Sb-124	Ci	1.10E-03	8.45E-04	1.50E-04	5.20E-03	7.30E-03
Sb-125	Ci	6.95E-03	6.20E-03	1.11E-02	2.41E-02	4.84E-02
Sb-126	Ci	<LLD	<LLD	<LLD	1.18E-04	1.18E-04
I-131	Ci	9.25E-05	<LLD	<LLD	1.70E-04	2.63E-04
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-132	Ci	<LLD	<LLD	<LLD	6.30E-05	6.30E-05
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	7.70E-05	5.30E-04	8.35E-04	7.25E-05	1.51E-03
Xe-133m	Ci	<LLD	<LLD	2.00E-05	<LLD	2.00E-05
Cs-134	Ci	1.04E-04	1.52E-04	1.33E-03	6.75E-04	2.26E-03
Xe-135	Ci	<LLD	<LLD	5.05E-06	<LLD	5.05E-06
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	2.94E-04	4.59E-05	2.33E-03	1.56E-03	4.23E-03
Ba\La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
W-187	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
LIQUID RELEASES
UNIT 1 (Docket Number 50-456)
CONTINUOUS MODE

Nuclides From Continuous Releases	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
H-3	Ci	6.35E+01	4.59E+01	2.26E+01	2.03E+01	1.52E+02
Na-24	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	4.84E-02	4.84E-02
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	3.13E-02	3.13E-02
Ni-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-92	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-97	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-105	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-122	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-126	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba/La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
W-187	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 LIQUID RELEASES
 UNIT 2 (Docket Number 50-457)
 SUMMATION OF ALL RELEASES

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

1. Total Activity Released	Ci	5.95E-02	1.64E-02	6.35E-02	2.63E-01	4.02E-01
2. Average Concentration Released	uCi/ml	2.13E-08	1.06E-08	7.45E-08	1.31E-07	5.58E-08

B. Tritium

1. Total Activity Released	Ci	2.98E+02	2.79E+02	2.26E+02	1.37E+02	9.40E+02
2. Average Concentration Released	uCi/ml	1.07E-04	1.81E-04	2.65E-04	6.81E-05	1.31E-04
3. % of Limit (1E-3 uCi/ml)	%	1.07E+01	1.81E+01	2.65E+01	6.81E+00	1.31E+01

C. Dissolved Noble Gases

1. Total Activity Released	Ci	9.05E-03	5.30E-04	2.76E-03	1.08E-04	1.24E-02
2. Average Concentration Released	uCi/ml	3.24E-09	3.43E-10	3.24E-09	5.37E-11	1.72E-09
3. % of Limit (2E-4 uCi/ml)	%	1.62E-03	1.72E-04	1.62E-03	2.69E-05	8.60E-04

D. Gross Alpha

1. Total Activity Released	Ci	<LLD	<LLD	<LLD	<LLD	0.00E+00
2. Average Concentration Released	uCi/ml	<LLD	<LLD	<LLD	<LLD	0.00E+00

E. Volume of Releases

1. Volume of Liquid Waste to Discharge	liters	3.29E+06	3.76E+06	2.47E+06	2.50E+06	1.20E+07
2. Volume of Dilution Water	liters	2.79E+09	1.54E+09	8.50E+08	2.01E+09	7.19E+09

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

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

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
LIQUID RELEASES
UNIT 2 (Docket Number 50-457)
BATCH MODE

Nuclides From Batch Releases	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
H-3	Ci	2.35E+02	2.33E+02	2.03E+02	1.17E+02	7.88E+02
Na-24	Ci	<LLD	<LLD	4.18E-06	6.95E-05	7.37E-05
Ar-41	Ci	<LLD	<LLD	<LLD	3.50E-05	3.50E-05
Cr-51	Ci	3.53E-03	2.69E-04	3.98E-05	2.61E-02	2.99E-02
Mn-54	Ci	7.95E-04	1.43E-04	2.81E-03	1.79E-03	5.54E-03
Fe-55	Ci	7.65E-03	8.85E-04	4.88E-03	9.30E-03	2.27E-02
Cu-57	Ci	2.88E-05	<LLD	1.76E-04	1.72E-04	3.77E-04
Co-58	Ci	3.21E-02	6.75E-03	1.28E-02	9.45E-02	1.46E-01
Fe-59	Ci	2.74E-04	<LLD	1.42E-05	2.37E-03	2.66E-03
Co-60	Ci	4.96E-03	1.01E-03	2.72E-02	1.06E-02	4.38E-02
Ni-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	3.96E-05	3.96E-05
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	9.00E-03	<LLD	1.90E-03	<LLD	1.09E-02
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-92	Ci	<LLD	<LLD	3.32E-05	1.96E-05	5.28E-05
Nb-95	Ci	1.12E-03	2.78E-05	4.79E-04	2.89E-03	4.52E-03
Zr-95	Ci	5.90E-04	1.70E-05	9.95E-05	1.66E-03	2.37E-03
Zr-97	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-105	Ci	<LLD	<LLD	<LLD	1.24E-03	1.24E-03
Ag-110m	Ci	<LLD	3.29E-06	1.23E-04	1.31E-04	2.57E-04
Sn-113	Ci	2.27E-05	3.19E-06	6.05E-05	5.50E-05	1.41E-04
Sn-117m	Ci	<LLD	<LLD	<LLD	4.37E-05	4.37E-05
Sb-122	Ci	3.77E-05	<LLD	4.34E-05	4.19E-04	5.00E-04
Sb-124	Ci	1.10E-03	8.45E-04	1.50E-04	5.20E-03	7.30E-03
Sb-125	Ci	6.95E-03	6.20E-03	1.11E-02	2.41E-02	4.84E-02
Sb-126	Ci	<LLD	<LLD	<LLD	1.18E-04	1.18E-04
I-131	Ci	9.25E-05	<LLD	<LLD	1.70E-04	2.63E-04
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-132	Ci	<LLD	<LLD	<LLD	6.30E-05	6.30E-05
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	7.70E-05	5.30E-04	8.35E-04	7.25E-05	1.51E-03
Xe-133m	Ci	<LLD	<LLD	2.00E-05	<LLD	2.00E-05
Cs-134	Ci	1.04E-04	1.52E-04	1.33E-03	6.75E-04	2.26E-03
Xe-135	Ci	<LLD	<LLD	5.05E-06	<LLD	5.05E-06
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	2.94E-04	4.59E-05	2.33E-03	1.56E-03	4.23E-03
Ba/La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
W-187	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
LIQUID RELEASES
UNIT 2 (Docket Number 50-457)
CONTINUOUS MODE

Nuclides From Continuous Releases	Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
H-3	Ci	6.35E+01	4.59E+01	2.26E+01	2.03E+01	1.52E+02
Na-24	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cr-51	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-57	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	4.84E-02	4.84E-02
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	3.13E-02	3.13E-02
Ni-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Br-82	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-92	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-97	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Mo-99	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Tc-99m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-105	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-113	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sn-117m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-122	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-124	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-125	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sb-126	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Te-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba/La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Hf-181	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
W-187	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 GAS RELEASES
 UNIT 1 (Docket Number 50-456)
 SUMMATION OF ALL RELEASES

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

1. Total Release Activity	Ci	4.43E+00	1.90E+00	4.96E+00	5.99E+00	1.73E+01
2. Average Release Rate	uCi/sec	5.62E-01	2.41E-01	6.29E-01	7.60E-01	5.49E-01

B. Iodine Releases

1. Total I-131 Activity	Ci	1.16E-05	<LLD	<LLD	7.52E-04	7.64E-04
2. Average Release Rate	uCi/sec	1.47E-06	<LLD	<LLD	9.54E-05	2.42E-05

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

1. Gross Activity	Ci	<LLD	<LLD	<LLD	2.36E-07	2.36E-07
2. Average Release Rate	uCi/sec	<LLD	<LLD	<LLD	2.99E-08	7.48E-09
3. Gross Alpha Activity	Ci	<LLD	2.02E-07	5.38E-08	<LLD	2.56E-07

D. Tritium Releases

1. Total Release Activity	Ci	2.69E+00	8.03E-02	8.36E-02	2.32E-01	3.09E+00
2. Average Release Rate	uCi/sec	3.41E-01	1.02E-02	1.06E-02	2.94E-02	9.80E-02

**E. Sum of Iodine, Particulate (> 8 day half-life),
and Tritium Releases.**

1. Total Release Activity	Ci	2.69E+00	8.03E-02	8.36E-02	2.33E-01	3.09E+00
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Note: LLD Values are included in Appendix A of this report.

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

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
GAS RELEASES
UNIT 1 (Docket Number 50-456)
BATCH MODE

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
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A. Particulate (> 8 day half-life) Releases

Mn-54	Ci	0.00	0.00	0.00	0.00	0.00
Co-58	Ci	0.00	0.00	0.00	0.00	0.00
Fe-59	Ci	0.00	0.00	0.00	0.00	0.00
Co-60	Ci	0.00	0.00	0.00	0.00	0.00
Sr-89	Ci	0.00	0.00	0.00	0.00	0.00
Sr-90	Ci	0.00	0.00	0.00	0.00	0.00
Zr-95	Ci	0.00	0.00	0.00	0.00	0.00
Ru-103	Ci	0.00	0.00	0.00	0.00	0.00
Cs-134	Ci	0.00	0.00	0.00	0.00	0.00
Cs-137	Ci	0.00	0.00	0.00	0.00	0.00
Ba/La-140	Ci	0.00	0.00	0.00	0.00	0.00
Ce-144	Ci	0.00	0.00	0.00	0.00	0.00
Others (Specify)	Ci	0.00	0.00	0.00	0.00	0.00

B. Tritium Releases

1. Total Release Activity	Ci	2.79E-01	3.66E-02	8.36E-02	1.20E-01	5.19E-01
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C. Fission and Activation Gas Releases

Ar-41	Ci	6.83E-02	6.73E-02	1.04E-01	1.29E-02	2.53E-01
Kr-85	Ci	8.00E-03	<LLD	<LLL	1.38E-02	2.18E-02
Kr-85m	Ci	<LLD	<LLD	4.96E-04	7.51E-04	1.25E-03
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-131m	Ci	9.06E-03	1.97E-03	1.21E-02	1.85E-02	4.16E-02
Xe-133	Ci	3.99E+00	1.74E+00	3.82E+00	5.53E+00	1.51E+01
Xe-133m	Ci	2.22E-02	6.66E-03	3.11E-02	2.78E-02	8.78E-02
Xe-135	Ci	3.01E-02	1.06E-02	4.24E-02	6.18E-02	1.45E-01
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (specify)	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

D. Iodine Releases

I-131	Ci	0.00	0.00	0.00	0.00	0.00
I-132	Ci	0.00	0.00	0.00	0.00	0.00
I-133	Ci	0.00	0.00	0.00	0.00	0.00
I-134	Ci	0.00	0.00	0.00	0.00	0.00
I-135	Ci	0.00	0.00	0.00	0.00	0.00
Others (specify)	Ci	0.00	0.00	0.00	0.00	0.00

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
GAS RELEASES
UNIT 1 (Docket Number 50-456)
CONTINUOUS MODE

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
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A. Particulate (> 8 day half-life) Releases

Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	2.36E-07	2.36E-07
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-103	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba\La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (Specify)	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

B. Tritium Releases

I. Total Release Activity	Ci	2.41E+00	4.37E-02	<LLD	1.12E-01	2.57E+00
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C. Fission and Activation Gas Releases

Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	3.05E-01	7.11E-02	9.46E-01	3.19E-01	1.64E+00
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (specify)	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

D. Iodine Releases

I-131	Ci	1.16E-05	<LLD	<LLD	7.52E-04	7.64E-04
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (specify)	Ci	<LLD	<LLD	<LLD	<LLD	<LLD

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
GAS RELEASES
UNIT 2 (Docket Number 50-457)
SUMMATION OF ALL RELEASES

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

1. Total Release Activity	Ci	4.88E+00	0.00E+00	3.95E+00	3.61E+00	1.24E+01
2. Average Release Rate	uCi/sec	6.19E-01	0.00E+00	5.01E-01	4.58E-01	3.93E-01

B. Iodine Releases

1. Total I-131 Activity	Ci	1.97E-05	<LLD	<LLD	5.14E-05	7.11E-05
2. Average Release Rate	uCi/sec	2.50E-06	<LLD	<LLD	6.52E-06	2.25E-06

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

1. Gross Activity	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
2. Average Release Rate	uCi/sec	<LLD	<LLD	<LLD	<LLD	<LLD
3. Gross Alpha Activity	Ci	<LLD	<LLD	9.36E-08	3.75E-07	4.69E-07

D. Tritium Releases

1. Total Release Activity	Ci	4.47E+00	1.20E+00	1.96E+00	3.46E+00	1.11E+01
2. Average Release Rate	uCi/sec	5.67E-01	1.52E-01	2.49E-01	4.39E-01	3.52E-01

**E. Sum of Iodine, Particulate (> 8 day half-life),
and Tritium Releases.**

1. Total Release Activity	Ci	4.47E+00	1.20E+00	1.96E+00	3.46E+00	1.11E+01
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Note: LLD Values are included in Appendix A of this report.

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

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
GAS RELEASES
UNIT 2 (Docket Number 50-457)
BATCH MODE

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
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A. Particulate (> 8 day half-life) Releases

Mn-54	Ci	0.00	0.00	0.00	0.00	0.00
Co-58	Ci	0.00	0.00	0.00	0.00	0.00
Fe-59	Ci	0.00	0.00	0.00	0.00	0.00
Co-60	Ci	0.00	0.00	0.00	0.00	0.00
Sr-89	Ci	0.00	0.00	0.00	0.00	0.00
Sr-90	Ci	0.00	0.00	0.00	0.00	0.00
Zr-95	Ci	0.00	0.00	0.00	0.00	0.00
Ru-103	Ci	0.00	0.00	0.00	0.00	0.00
Cs-134	Ci	0.00	0.00	0.00	0.00	0.00
Cs-137	Ci	0.00	0.00	0.00	0.00	0.00
Ba\La-140	Ci	0.00	0.00	0.00	0.00	0.00
Ce-144	Ci	0.00	0.00	0.00	0.00	0.00
Others (Specify)						

B. Tritium Releases

1. Total Release Activity	Ci	1.62E-01	1.25E-01	1.00E+00	1.20E-01	1.41E+00
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C. Fission and Activation Gas Releases

Ar-41	Ci	7.46E-02	4.58E-02	5.91E-02	5.67E-02	2.36E-01
Kr-85	Ci	8.00E-03	<LLD	<LLD	1.38E-02	2.18E-02
Kr-85m	Ci	5.40E-04	<LLD	1.56E-04	6.33E-04	1.33E-03
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-131m	Ci	6.28E-03	1.97E-03	1.21E-02	1.85E-02	3.89E-02
Xe-133	Ci	2.34E+00	3.57E-01	1.54E+00	2.21E+00	6.45E+00
Xe-133m	Ci	1.85E-02	3.74E-03	1.85E-02	2.78E-02	6.85E-02
Xe-135	Ci	3.02E-02	2.35E-03	1.61E-02	3.73E-02	8.60E-02
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (specify)						

D. Iodine Releases

I-131	Ci	0.00	0.00	0.00	0.00	0.00
I-132	Ci	0.00	0.00	0.00	0.00	0.00
I-133	Ci	0.00	0.00	0.00	0.00	0.00
I-134	Ci	0.00	0.00	0.00	0.00	0.00
I-135	Ci	0.00	0.00	0.00	0.00	0.00
Others (specify)						

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
GAS RELEASES
UNIT 2 (Docket Number 50-457)
CONTINUOUS MODE

Units	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
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A. Particulate (> 8 day half-life) Releases

Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-89	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Sr-90	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-103	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ba/La-140	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (Specify)						

B. Tritium Releases

1. Total Release Activity	Ci	4.31E+00	1.07E+00	9.61E-01	3.34E+00	9.68E+00
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C. Fission and Activation Gas Releases

Ar-41	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-85m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133	Ci	2.41E+00	7.18E-01	2.30E+00	1.24E+00	6.67E+00
Xe-133m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-138	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (specify)						

D. Iodine Releases

I-131	Ci	1.97E-05	<LLD	<LLD	5.14E-05	7.11E-05
I-132	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-133	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-134	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
I-135	Ci	<LLD	<LLD	<LLD	<LLD	<LLD
Others (specify)						

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 SOLID RADIOACTIVE WASTE
 UNIT 1 AND 2 COMBINED (Docket Number 50-456 and 50-457)

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

DESCRIPTION	VOLUME (m ³)	CURIES	MAJOR NUCLIDES/CURIES
Process Waste	1.44E+2	6.99E+1 Error = 1.28E0%	FE55 48.5% Curies = 3.38E+1 +/- 2.41E00% CS137 7.6% Curies = 5.27E+0 +/- 2.59E00% CS134 2.8% Curies = 1.98E+0 +/- 2.65E00% CO60 10.9% Curies = 7.57E+0 +/- 2.39E00% CO58 13.7% Curies = 9.54E+0 +/- 2.45E00% NI63 7.7% Curies = 5.37E+0 +/- 2.38E00% NB95 0.3% Curies = 2.09E-1 +/- 3.64E00% MN54 1.5% Curies = 1.04E+0 +/- 2.13E00% H3 2.0% Curies = 1.39E+0 +/- 1.88E00% ZR95 0.2 % Curies = 1.19E-0 +/- 3.74E00% CO57 0.3% Curies = 1.80E-01 +/- 2.96E00% C14 0.5% Curies = 3.26E-1 +/- 2.37E00% SB125 3.3% Curies = 2.29E+0 +/- 2.70E00% TE125M 0.6% Curies = 4.44E-1 +/- 2.72E00% CR51 0.2% Curies = 1.71E-1 +/- 3.89E00%
Dry Active Waste	1.90E+2	7.68E+00 Error = 1.08E0%	FE55 61.0% Curies = 4.68E+0 +/- 1.69E00% CO58 7.4% Curies = 5.68E-1 +/- 2.25E00% CO60 13.6% Curies = 1.05E+0 +/- 1.66E00% NI63 9.6% Curies = 7.37E-1 +/- 1.64E00% NB95 1.4% Curies = 1.11E-1 +/- 2.20E00% MN54 1.8% Curies = 1.37E-1 +/- 1.83E00% CS137 2.2% Curies = 1.67E-1 +/- 1.71E00% ZR95 1.0% Curies = 7.60E-2 +/- 2.24E00% CS134 0.8% Curies = 6.34E-2 +/- 1.87E00% C14 0.6% Curies = 4.55E-2 +/- 1.63E00% CO57 0.1% Curies = 1.06E-2 +/- 1.90E00% PU241 0.0% Curies = 9.13E-4 +/- 1.68E00% SR90 0.0% Curies = 4.65E-4 +/- 1.64E00% I129 0.0% Curies = 1.69E-5 +/- 1.63E00% CR51 0.5% Curies = 3.66E-2 +/- 4.11E00%
Irradiated Components			0.00E-1 0.00E-1

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 SOLID RADIOACTIVE WASTE
 UNIT 1 AND 2 COMBINED (Docket Number 50-456 and 50-457)

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

DESCRIPTION	VOLUME (m ³)	CURIES	MAJOR NUCLIDES/CURIES
Other: (Resistance Temperature Detector Piping)			
	1.85E+02	1.14E+02 Error = 3.20E0%	FE55 60.5% Curies = 6.88+1 +/- 5.11E00% CO60 12.9% Curies = 1.47E+0 +/- 5.12E00% NI63 8.8% Curies = 9.97E+0 +/- 5.12E00% CO58 8.1% Curies = 9.19E+0 +/- 3.53E00% CR51 3.9% Curies = 4.47E+0 +/- 3.62E00% MN54 2.0% Curies = 2.25E+0 +/- 4.87E00% NB95 1.1% Curies = 1.24E+0 +/- 4.00E00% ZR95 0.6% Curies = 7.32E-1 +/- 3.60E00% SB125 0.6% Curies = 6.29E-1 +/- 5.01E00% C140.5% Curies = 6.02E-1 +/- 5.12E00% CS137 0.3% Curies = 3.03E-1 +/- 3.69E00% ZN65 0.3% Curies = 2.87E-1 +/- 4.59E00% FE59 0.3% Curies = 2.86E-1 +/- 3.33E00% H3 0.1% Curies = 1.68E-1 +/- 5.39E00% CE144 0.1% Curies = 1.49E-1 +/- 3.63E00%

Number of Shipments: 28

Mode of Transportation: Exclusive Use Vehicle

Destination: Barnwell, South Carolina (20), Oakridge, Tennessee (5), Wampum Pennsylvania (3)

B. IRRADIATED FUEL SHIPMENTS

No irradiated fuel shipments for January through December, 1995

NOTE: Actual burial volume of dry active waste was 39.90m³ after further vendor volume reduction.

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 SOLID RADIOACTIVE WASTE
 UNIT 1 AND 2 COMBINED (Docket Number 50-456 and 50-457)

Shipment Number	Waste Class	Type of Container	Solidification Agent or Absorbent
RWS-95-001	A	TYPE A	NONE
RWS-95-002	A	TYPE A	NONE
RWS-95-003	A	TYPE A	NONE
RWS-95-004	A	TYPE A	NONE
RWS-95-005	A	TYPE A	NONE
RWS-95-006	A	TYPE A	NONE
RWS-95-007	A	TYPE A	NONE
RWS-95-008	A	TYPE A	NONE
RWS-95-009	B	TYPE B	NONE
RWS-95-010	A	STC	NONE
RWS-95-011	A	STC	NONE
RWS-95-012	A	STC	NONE
RWS-95-013	A	TYPE A	NONE
RWS-95-014	A	TYPE A	NONE
RWS-95-015	A	STC	NONE
RWS-95-016	A	TYPE A	NONE
RWS-95-017	A	TYPE A	NONE
RWS-95-018	A	STC	NONE
RWS-95-019	A	TYPE A	NONE
RWS-95-020	A	STC	NONE
RWS-95-021	A	STC	NONE
RWS-95-022	A	STC	NONE
RWS-95-023	A	TYPE A	NONE
RWS-95-024	A	TYPE A	NONE
RWS-95-025	A	TYPE A	NONE
RWS-95-026	A	TYPE A	NONE
RWS-95-027	A	TYPE B	NONE
RWS-95-028	A	TYPE A	NONE

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 UNIT 1 AND 2 COMBINED (Docket Number 50-456 and 50-457)

1. There were no revisions to the Braidwood Station Process Control Program.
2. There were no major changes to the installed liquid, gaseous, or solid radwaste treatment systems.
3. There were no liquid holdup tanks or gas decay tanks which exceeded the limits addressed in the ODCM-RETS.
4. Pursuant to ODCM-RETS Section 12.6.2, the following is an explanation as to why the inoperability of liquid or gaseous effluent monitoring instrumentation was not corrected within the time specified in ODCM-RETS:
 - a. No liquid or gaseous effluent monitoring instrumentation was inoperable longer than the time specified in ODCM-RETS.

5. Error in Measurement -

A.	<u>Gaseous Effluents</u>	<u>Est. Total Error %</u>
1.	Fission and Activation Gas Releases	7.59
2.	Iodine Releases	33.2
3.	Particulates (>8 day half life) Releases	19.8
4.	Tritium Releases	8.07
B.	<u>Liquid Effluents</u>	<u>Est. Total Error %</u>
1.	Fission and Activation Products	2.64
2.	Tritium	5.85
3.	Dissolved Noble Gases	2.64
4.	Gross Alpha	14.7
5.	Volume of Liquid Waste to Discharge	2.0
6.	Volume of Dilution Water	1.5

6. The following is a summary of the 1995 Revisions to the Commonwealth Edison Company (ComEd) Offsite Dose Calculation Manual (ODCM).

Generic Revision

Chapter 9, Revision 1.1, dated July 1994 (effective July 1995)

- Chapter 9 is a new chapter in the generic section of the ODCM that implements an efficient, uniform Radiological Environment Monitoring Program (referred to as UREMP) among the ComEd nuclear stations. This chapter includes requirements pertaining to environmental sampling and analyses, an annual Land Use Census, an Interlaboratory Comparison Program, and required environmental reports.

Braidwood Station

Chapter 10, Revision 1.8, October 1995

- Added text to describe an administrative action level for tritium entering into the Braidwood Pond.
- Corrected Kr-87 percentage on Table 10-1.
- Updated Figure 10-2.
- Added pathway to the Braidwood Pond in Figure 10-3.

Chapter 11, Revision 1.8, October 1995

- Updated Chapter information to implement and/or reference new requirements of the Chapter 9 UREMP.

Chapter 12, Revision 1.8, October 1995

- Added an Effluent Compliance Matrix and an Environmental Compliance Matrix that associates regulations, ODCM equations, Radiological Effluent Technical Standards (RETS), and Technical Specification references.
- Updated definitions in section 12.1.
- Inserted the Technical Specification frequency variance to Table 12.1-1.
- Revised Table 12.2-3 Action Statements 37 and 39 to allow for real time monitoring and specified LLD requirements, respectively.
- Revised notes to Table 12.3-1 and inserted alternate LLD methodology.
- Changed continuous air sampling requirement from Monthly to Quarterly on Table 12.4-1. Rephrased notation 7 and created stand alone LLD for I-131.
- Deleted unrestricted area reference and kept site boundary references in sections 12.4.2.A and C, 12.4.3.A and C, and 12.6.2. to reflect current practice.
- Deleted dose requirements of ventilation exhaust treatment system and waste gas hold-up system.
- Revised sections of 12.5 and 12.6 to comply with UREMP.
- Updated section 12.6.3.2.a requiring retention of ODCM changes and reviews.

Appendix F, Revision 1.8, October 1995

- Updated information and dose factors based on updated land use census data.
- Identified general waste storage locations on restricted area map.

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)

APPENDIX A

LLD Tables

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)
LLD VALUES FOR GASEOUS RELEASES

<u>Isotope</u>	<u>LLD (Ci/ml)</u>
Alpha	2.290E-18
H-3	3.970E-14
Mn-54	1.004E-18
Co-58	8.989E-19
Fe-59	1.530E-18
Co-60	1.332E-18
Kr-87	2.451E-13
Kr-88	2.130E-13
Sr-89	8.920E-11
Sr-90	2.510E-11
I-131	9.277E-19
I-133	1.876E-18
Xe-133	8.304E-14
Xe-133m	2.463E-13
Cs-134	7.401E-19
Xe-135	3.545E-14
Cs-137	7.572E-19
Xe-138	3.605E-11
Ce-141	7.380E-19
Ce-144	3.715E-18

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

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)
LLD VALUES FOR LIQUID RELEASES

<u>Isotope</u>	<u>LLD (Ci/ml)</u>
Alpha	6.220E-14
H-3	2.380E-12
Mn-54	4.369E-14
Fe-55	1.430E-13
Co-58	5.174E-14
Fe-59	1.078E-13
Co-60	7.749E-14
Zn-65	1.132E-13
Kr-87	1.633E-13
Kr-88	1.684E-13
Sr-89	8.990E-14
Sr-90	3.940E-14
Mo-99	7.973E-14
I-131	4.647E-14
Xe-133	9.404E-14
Xe-133m	2.897E-13
Cs-134	3.771E-14
Xe-135	3.674E-14
Cs-137	4.929E-14
Xe-138	8.241E-12
Ce-141	6.387E-14
Ce-144	2.418E-13

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

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
UNIT 1 AND 2 (Docket Numbers 50-456 and 50-457)

APPENDIX B

Supplemental Information

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1994
UNIT 1 AND 2 COMBINED (Docket Number 50-456)

LIQUID EFFLUENTS
SUPPLEMENTAL RELEASE INFORMATION

A. Batch Release	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1995
1. Total Number of Batch Releases	74	85	126	73	358
2. Total Time Period for Batch Releases (minutes)	9745	7489	13059	17263	47556
3. Maximum Time Period for a Batch Release (minutes)	338	166	1663	498	1663
4. Average Time Period for a Batch Release	131.7	88.1	103.6	236.5	132.8
5. Minimum Time Period for a Batch Release (minutes)	48	48	21	22	21
6. Average Stream Flow During Periods of Release of Effluent into a Flowing Stream (liters/min)	1.12E+07	1.35E+07	4.18E+06	4.72E+06	8.40E+06

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
UNIT 1 (Docket Number 50-456)

GASEOUS EFFLUENTS
SUPPLEMENTAL RELEASE INFORMATION

A. Batch Release	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1995
1. Total Number of Batch Releases	36	31	47	36	150
2. Total Time Period for Batch Releases (minutes)	23925	1423	2139	28111	55598
3. Maximum Time Period for a Batch Release (minutes)	11305	55	55	12750	12750
4. Average Time Period for a Batch Release	664.6	45.9	45.5	780.9	370.7
5. Minimum Time Period for a Batch Release (minutes)	20	20	20	25	20
B. Abnormal Releases					
1. Number of Releases	0	0	0	0	0
2. Total Activity Released	0.00	0.00	0.00	0.00	0.00

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
UNIT 2 (Docket Number 50-457)

GASEOUS EFFLUENTS
SUPPLEMENTAL RELEASE INFORMATION

A. Batch Release	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1995
1. Total Number of Batch Releases	49	32	45	28	154
2. Total Time Period for Batch Releases (minutes)	1975	1353	1938	1382	6648
3. Maximum Time Period for a Batch Release (minutes)	64	60	125	60	125
4. Average Time Period for a Batch Release	40.3	42.3	43.1	49.4	43.2
5. Minimum Time Period for a Batch Release (minutes)	20	18	17	39	17
B. Abnormal Releases					
1. Number of Releases	0	0	0	0	0
2. Total Activity Released	0.00	0.00	0.00	0.00	0.00

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 UNIT COMMON (Docket Numbes 50-456 and 50-457)

GASEOUS EFFLUENTS (WASTE GAS DECAY TANKS)
 SUPPLEMENTAL RELEASE INFORMATION

A. Batch Release	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1995
1. Total Number of Batch Releases	13	9	14	15	51
2. Total Time Period for Batch Releases (minutes)	2030	958	1020	1690	5698
3. Maximum Time Period for a Batch Release (minutes)	463	273	173	249	463
4. Average Time Period for a Batch Release	156.0	106.0	72.9	112.0	111.7
5. Minimum Time Period for a Batch Release (minutes)	55	52	5	34	5
B. Abnormal Releases					
1. Number of Releases	0	0	0	0	0
2. Total Activity Released	0.00	0.00	0.00	0.00	0.00

BRAIDWOOD NUCLEAR POWER STATION
ANNUAL EFFLUENT REPORT FOR 1995
DOSE TO PUBLIC
UNIT 1 (Docket Number 50-456)

Percentage of Quarterly Objective				
Qtrly Obj	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr

A. Airborne

Adult Receptor

Gamma Air	5.0 mrad	0.0010%	0.0003%	0.0012%	0.0012%
Beta Air	10.0 mrad	0.0017%	0.0005%	0.0020%	0.0024%
Total Body	2.5 mrem	0.0015%	0.0005%	0.0018%	0.0016%
Skin	7.5 mrem	0.0013%	0.0004%	0.0015%	0.0016%
Organ	7.5 mrem	0.0085%	0.0030%	0.0047%	0.2147%
Critical Organ		Thyroid	Thyroid	Thyroid	Thyroid

Yearly Objective 10CFR50 Appendix I	Percentage of yearly Objective 10CFR50 Appendix I
-------------------------------------------	---------------------------------------------------------------

10.0 mrad	0.0019%
20.0 mrad	0.0033%
5.0 mrem	0.0027%
15.0 mrem	0.0024%
15.0 mrem	0.1155%
	Thyroid

B. Aquatic

Adult Receptor

Total Body	1.5 mrem	0.1207%	0.1187%	0.1127%	0.2033%
Internal Organ	5.0 mrem	0.0802%	0.0366%	0.0442%	0.1754%
Critical Organ		Gi LLI	Liver	Gi LLI	Gi LLI

3.0 mrem	0.2777%
10.0 mrem	0.1682%
	Gi LLI

BRAIDWOOD NUCLEAR POWER STATION
 ANNUAL EFFLUENT REPORT FOR 1995
 DOSE TO PUBLIC
 UNIT 2 (Docket Number 50-457)

Percentage of Quarterly Objective				
Qtrly Obj	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr

Yearly Objective	Percentage of yearly Objective
10CFR50 Appendix I	10CFR50 Appendix I

A. Airborne

Adult Receptor

Gamma Air	5.0 mrad	0.0018%	0.0002%	0.0008%	0.0008%
Beta Air	10.0 mrad	0.0035%	0.0002%	0.0016%	0.0015%
Total Body	2.5 mrem	0.0026%	0.0003%	0.0012%	0.0012%
Skin	7.5 mrem	0.0024%	0.0002%	0.0011%	0.0011%
Organ	7.5 mrem	0.0189%	0.0025%	0.1100%	0.1760%
Critical Organ		Thyroid	Thyroid	Thyroid	Thyroid

10.0 mrad	0.0019%
20.0 mrad	0.0033%
5.0 mrem	0.0026%
15.0 mrem	0.0024%
15.0 mrem	0.1537%
	Thyroid

B. Aquatic

Adult Receptor

Total Body	1.5 mrem	0.1207%	0.1187%	0.1127%	0.2033%
Internal Organ	5.0 mrem	0.0802%	0.0366%	0.0442%	0.1754%
Critical Organ		Gi LLI	Liver	Gi LLI	Gi LLI

3.0 mrem	0.2777%
10.0 mrem	0.1682%
	Gi LLI

CECo BRAIDWOOD STATION
34 ft. WIND SPEED and WIND DIRECTION

January-March 1995
199-30 ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	WIND DIRECTION CLASSES																STABILITY CLASSES								
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.05	.05							
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.09		.09						
9 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.09	.00	.00	.19			.19					
N	.00	.00	.00	.00	.00	.00	.00	.05	.19	.00	.00	.00	.42	.00	.19	.83				.83					
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.14	.19	.00	.00	.00	.37					.37				
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00			
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00		
																								.00	1.53
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
6 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
T SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05					.05			
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	.05
TOT	4.82	5.28	4.91	5.65	5.24	3.99	3.61	4.08	5.38	4.96	3.34	6.53	10.70	13.86	9.18	8.48	100.00	.37	1.99	3.48	42.63	43.14	6.44	1.95	100.00

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
.00	.05	.00	.00	.00	.00	.05	.00	.05	.00	.00	.00	.00	.05	.00	.19	.37	Extremely Unstable
.09	.09	.05	.09	.09	.00	.23	.14	.05	.14	.00	.00	.00	.51	.23	.28	1.99	Moderately Unstable
.14	.19	.14	.32	.14	.00	.23	.00	.09	.46	.14	.00	.28	.74	.42	.19	3.48	Slightly Unstable
1.85	2.27	1.85	2.32	1.95	.83	1.67	1.71	1.71	2.18	1.62	2.64	5.65	6.53	3.71	4.12	42.63	Neutral
2.18	2.55	2.41	2.32	2.55	2.04	.51	2.18	3.43	2.09	1.48	3.20	3.66	5.19	4.03	3.34	43.14	Slightly Stable
.42	.09	.23	.51	.28	.56	.83	.05	.05	.05	.09	.60	.97	.74	.70	.28	6.44	Moderately Stable
.14	.05	.23	.09	.23	.56	.09	.00	.00	.05	.00	.09	.14	.09	.09	.09	1.95	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	CALM
.88	.56	.88	1.67	1.71	.88	.32	.09	.05	.19	.14	.23	1.07	1.44	1.44	.56	12.09	0.9 - 3.5 mph
1.95	1.58	1.62	2.83	2.87	2.32	1.39	.88	.28	.70	.97	3.57	4.77	3.94	3.71	2.27	35.63	3.6 - 7.5 mph
1.58	2.83	1.81	1.16	.65	.79	1.67	2.09	2.55	1.58	1.25	2.09	3.48	5.33	3.15	3.57	35.54	7.6 - 12.5 mph
.37	.32	.60	.00	.00	.00	.23	1.02	2.46	2.22	.93	.51	1.16	2.50	.88	1.90	15.11	12.6 - 18.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.05	.28	.05	.14	.19	.65	.00	.19	1.53	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05	> 24.5 mph

