



Commonwealth Edison
Braidwood Nuclear Power Station
Route #1, Box 84
Braceville, Illinois 60407
Telephone 815/458-2801

PRIORITY ROUTING

First	Second
RA	RC
DRA	EIC
DHP	SGA
DRS	HL
DRSS	OL
DRMA	DI
	PAO

orig + 2

FILE *110*

February 5, 1988

Mr. Bert Davis
Regional Administrator
Directorate of Inspection and Enforcement
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Subject: Braidwood Station Operating Report, NRC Dockets STN 50-456 and STN 50-457.

Dear Mr. Davis:

Enclosed is the radioactive effluent report for July through December, 1987 for Braidwood Nuclear Power Station.

One copy of each report is provided for your use. Two copies will be forwarded to Document Control and the NRC Resident Inspector will receive a report as outlined in the November '86 Federal Register.

Sincerely yours,

E. E. Fitzpatrick
Station Manager

EEF/KAR/mb

Enclosure

IE24
IE48
MAR 10 1988

BRAIDWOOD NUCLEAR POWER STATION
SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

R 8803160298 871231
PDR ADDOCK 05000456
DCD

	UNITS	JUL	AUG	SEP	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
A. Fission and Activation Gas Releases									
1. Total Release Activity	Ci	6.44E-5	8.16E-3	1.41E-2	2.23E-2	4.44E-2	4.58E-2	1.69E-1	2.59E-1
2. Maximum Release Rate	µCi/sec	1.2E-2	4.37E-1	4.08E-1	4.37E-1	8.19E-1	3.17E+0	9.70E+0	9.70E+0
3. % of 10CFR20 Limits**									
a. Whole Body (500 mrem/year)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Skin (3000 mrem/year)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. % of 10CFR50 Limits									
a. Gamma Quarterly (5 mrad)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Beta Quarterly (10 mrad)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
c. Gamma Annual (10 mrad)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d. Beta Annual (20 mrad)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. Iodine Releases

1. Total I-131 and I-133 Activity	Ci	<LLD++	<LLD	3.48E-6	3.48E-6	<LLD	8.47E-6	<LLD	8.47E-6
2. % of 10CFR20/10CFR50 Limits+									

** % of 10CFR20 limits is based on the maximum release rate for the period considered.

+ Iodine, particulate, and tritium limits are expressed as a total limit. See Step E.

++ < LLD - No detectable activity above lower limit of detection for counting room instrumentation.

IE 48
11

BRAIDWOOD NUCLEAR POWER STATION
 SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987
 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JUL	AUG	SEP	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
--	-------	-----	-----	-----	-------------	-----	-----	-----	-------------

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

1. Gross Activity	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	1.43E-6	<LLD	1.43E-6
2. Gross Alpha Activity	Ci	4.93E-5	4.98E-5	1.14E-5	1.10E-4	<LLD	2.69E-5	3.07E-6	3.00E-5
3. % of 10CFR20/10CFR50 Limits ⁺									

D. Tritium Releases

1. Total Release Activity	Ci	<LLD	1.55E-3	<LLD	1.55E-3	5.95E-3	1.16E-2	2.53E-2	4.28E-2
2. % of 10CFR20/10CFR50 Limits ⁺									

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

1. Total Activity	Ci	<LLD	1.55E-3	3.48E-6	1.55E-3	5.95E-3	1.16E-2	2.53E-2	4.28E-2
2. % of 10CFR20 Limit									
a. Any Organ (1500 mrem/year)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3. % of 10CFR50 Limit									
a. Quarterly Any Organ (7.5 mrem)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Annual Any Organ (15.0 mrem)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

⁺ Iodine, particulate, and tritium limits are expressed as a total limit. See Step E.

BRAIDWOOD NUCLEAR POWER STATION
SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987
GASEOUS EFFLUENTS - VENT STACK RELEASES

	UNITS	JUL	AUG	SEP	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
--	-------	-----	-----	-----	-------------	-----	-----	-----	-------------

F. Fission and Activation Gas Releases

Xe-131m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
Xe-133m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
Xe-135m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
Xe-133	Ci	< LLD	3.96E-3	1.27E-2	1.67E-2	3.15E-2	3.20E-2	1.51E-1	2.14E-1
Xe-135	Ci	< LLD	1.07E-3	9.45E-5	1.16E-3	5.38E-3	7.40E-4	2.22E-3	8.34E-3
Kr-85m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
Kr-85	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
Ar-41	Ci	6.44E-5	< LLD	1.31E-3	1.37E-3	6.04E-3	1.31E-2	1.61E-2	3.52E-2
Others (Specify)									

G. Iodine Releases

I-131	Ci	< LLD	< LLD	3.48E-6	3.48E-6	< LLD	4.58E-6	< LLD	4.58E-6
I-132	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
I-133	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	3.89E-6	< LLD	3.89E-6
I-134	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
I-135	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
Others (Specify)									

BRAIDWOOD NUCLEAR POWER STATION
 SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987
 GASEOUS EFFLUENTS - VENT STACK RELEASES

	UNITS	JUL	AUG	SEP	3rd QUARTER	OCT	NOV	DEC	4th QUARTER	
H. Particulate (> 8 day half-life) Releases										
Mn-54	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Fe-55	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Fe-59	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Co-58	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Co-60	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Sr-89	Ci	---	---	---	< LLD	---	---	---	*	
Sr-90	Ci	---	---	---	< LLD	---	---	---	*	
Y-88	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Ru-103	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Ag-110m	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Cs-134	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Cs-136	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Cs-137	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Ba/La-140	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Ce-144	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	
Others (Specify)										
		Ru-106	Ci	---	---	---	---	1.43E-6	---	1.43E-6

* Waiting for analysis results - Data will be presented in an errata to the Semi-Annual Report.

BRAIDWOOD NUCLEAR POWER STATION
SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JUL	AUG	SEP	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
--	-------	-----	-----	-----	-------------	-----	-----	-----	-------------

I. Fission and Activation Products

1. Total Activity Released	Ci	7.04E-5	2.96E-3	1.34E-2	1.64E-2	1.74E-2	9.44E-3	6.79E-3	3.36E-2
2. Average Concentration Released	uCi/ml	3.01E-11	1.29E-9	6.09E-9	2.40E-9	7.70E-9	4.03E-9	2.90E-9	4.84E-9
3. % of 10CFR50 Limits									
a. Quarterly Whole Body (1.5 mrem)	%	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02
b. Quarterly Any Organ (5.0 mrem)	%	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
c. Annual Whole Body (3.0 mrem)	%	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
d. Annual Any Organ (10.0 mrem)	%	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01

J. Tritium

1. Total Activity Released	Ci	2.05E-1	9.57E-1	2.34E+0	3.50E+0	7.43E+0	1.16E+1	1.87E+1	3.77E+1
2. Average Concentration Released	uCi/ml	8.75E-8	4.15E-7	1.06E-6	1.35E-7	3.29E-6	4.96E-6	7.99E-6	5.43E-6
3. % of Limit (3E-3 uCi/ml)	%	0.00	0.01	0.04	0.00	0.11	0.17	0.27	0.18

K. Dissolved Noble Gases

1. Total Activity Released	Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
2. Average Concentration Released	uCi/ml	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
3. % of Limit (2E-4 uCi/ml)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

L. Gross Alpha

1. Total Activity Released	Ci	7.21E-3	< LLD	< LLD	7.21E-3	< LLD	< LLD	1.97E-4	1.97E-4
2. Average Concentration Released	uCi/ml	3.08E-9	< LLD	< LLD	3.08E-9	< LLD	< LLD	8.42E-11	8.42E-11

M. Volume of Liquid Waste to Discharge	liters	5.81E+6	6.25E+6	4.41E+6	1.65E+7	4.13E+6	4.31E+6	6.95E+6	1.54E+7
--	--------	---------	---------	---------	---------	---------	---------	---------	---------

N. Volume of Dilution Water	liters	2.34E+9	2.30E+9	2.20E+9	6.84E+9	2.26E+9	2.34E+9	2.34E+9	6.94E+9
-----------------------------	--------	---------	---------	---------	---------	---------	---------	---------	---------

BRAIDWOOD NUCLEAR POWER STATION
SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987
LIQUID EFFLUENTS

		UNITS	JUL	AUG	SEP	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
O. Liquid Effluents										
Sr-89		Ci	---	---	---	< LLD	---	---	---	*
Sr-90		Ci	---	---	---	< LLD	---	---	---	*
Co-58		Ci	7.04E-5	2.59E-3	1.02E-2	1.29E-2	1.23E-2	5.59E-3	3.25E-3	2.11E-2
Co-60		Ci	< LLD	3.45E-5	2.26E-4	2.60E-4	2.60E-4	3.77E-4	6.81E-5	7.05E-4
Cs-134		Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
Cs-136		Ci	< LLD	< LLD	< LLD	< LLD	8.48E-6	< LLD	< LLD	8.48E-6
Cs-137		Ci	< LLD	< LLD	< LLD	< LLD	1.69E-4	5.73E-6	2.38E-5	1.99E-4
I-131		Ci	< LLD	4.73E-6	6.86E-4	6.91E-4	1.41E-3	< LLD	3.90E-4	1.80E-3
I-133		Ci	< LLD	< LLD	< LLD	< LLD	< LLD	4.14E-6	1.56E-4	1.60E-4
Ba/La-140		Ci	< LLD	< LLD	3.51E-5	3.51E-5	3.73E-4	< LLD	5.60E-6	3.79E-4
Xe-133		Ci	< LLD	< LLD	< LLD	< LLD	8.22E-5	< LLD	< LLD	8.22E-5
Xe-135		Ci	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD	< LLD
Others (Specify)										
	Mn-54	Ci	---	3.06E-4	2.12E-3	2.43E-3	2.56E-3	3.01E-3	1.14E-3	6.71E-3
	Na-24	Ci	---	1.89E-5	1.18E-4	1.37E-4	2.32E-4	4.91E-4	1.59E-3	2.31E-3
	Br-82	Ci	---	1.14E-5	---	1.14E-5	---	---	---	---
	Fe-59	Ci	---	---	2.10E-5	2.10E-5	7.16E-6	---	---	7.16E-6
	Kr-88	Ci	---	---	---	---	---	---	3.94E-5	3.94E-5
	Ru-105	Ci	---	---	---	---	---	---	1.93E-5	1.93E-5
	Zr-97	Ci	---	---	---	---	---	---	1.07E-4	1.07E-4

* Waiting for analysis results - Data will be presented in an errata to the Semi-Annual Report.

BRAIDWOOD NUCLEAR POWER STATION
 SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987
 SOLID RADIOACTIVE WASTE
 MONTH 7/01 - 12/31 YEAR 1987

DATE	Disposition of Material (Description, Class, Type, Solidifying Agent)	Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
	No Radwaste shipments during the months of July through December.				
MONTHLY TOTALS				0 ft ³	0 Ci

BRAIDWOOD NUCLEAR POWER STATION

SEMIANNUAL EFFLUENT REPORT FOR JULY TO DECEMBER, 1987

- A. Pursuant to Technical Specification 6.9.1.7, 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 Technical Specifications:

Gas Decay Tank Radiation Monitor (OPRO2J) was inoperable greater than 14 days. Spurious noise spikes caused the monitor to occasionally go into alarm. The extended period of inoperability was due to the time involved to investigate and troubleshoot the problem.

- B. There were no revisions to the Process Control Program.
- C. There were no major changes to the liquid, gaseous, or solid Radwaste Treatment Systems. There were no liquid holdup tanks or gas decay tanks which exceeded the limits addressed in the Technical Specifications.