

INSTALLATION:BRUNSWICK

LOCATION:20 MI S WILMINGTON, NC

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1988
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:CAROLINA POWER &LIGHT
DOCKET NO.:50-325 LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWT):1.43E+07 NET ELECTRIC POWER (MWT):4.45E+06
COMMERCIAL OPERATION:03/18/77 INITIAL CRITICALITY:10/08/76
COOLING WATER SOURCE:CAPE FEAR RIVER
UNIT NUMBER: 2 TYPE:BWR LICENSEE:CAROLINA POWER &LIGHT
DOCKET NO.:50-324 LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWT):1.24E+07 NET ELECTRIC POWER (MWT):3.92E+06
COMMERCIAL OPERATION:11/03/75 INITIAL CRITICALITY:03/20/75
COOLING WATER SOURCE:CAPE FEAR RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.17E+01
CR-51	1.30E-01
MN-54	6.50E-03
CO-57	2.66E-06
CO-58	3.99E-03
FE-59	1.39E-03
CO-60	7.73E-03
ZN-65	5.73E-05
KR-85M	7.08E+01
KR-87	1.07E+01
KR-88	6.11E+01
SR-89	9.91E-04
SR-90	9.15E-06
NB-95	1.77E-05
RU-103	9.27E-06
I-131	2.27E-02
I-132	3.80E-02
I-133	4.35E-02
XE-133	4.35E+02
XE-133M	1.13E+00
CS-134	1.41E-04
I-134	2.27E-02
I-135	4.57E-02
XE-135	6.10E+02
XE-135M	8.45E+01
CS-136	3.73E-06
CS-137	4.41E-04
XE-137	2.30E+02
XE-138	5.05E+01
BA-140	6.14E-04
BA-LA-140	1.91E-03
LA-140	4.20E-04
CE-141	4.25E-08
CE-144	2.06E-05

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

9008220181 900815
R PDR ADDICK 05000324
PDC

*This is the last year
for the report.
Please review and
let me know if there
is any additional
correction or comment.*

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1988
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.44E-02
AR-41	5.40E-06
CR-51	1.43E-01
MN-54	1.61E-01
FE-55	3.28E-02
MN-56	4.90E-05
CO-57	7.98E-06
CO-58	3.88E-02
FE-59	1.08E-02
CO-60	2.31E-01
ZN-69M	1.85E-06
AS-76	7.53E-04
KR-85	4.19E-03
KR-85M	5.45E-06
SR-89	2.45E-03
SR-90	6.34E-05
SR-91	4.06E-04
Y-91M	4.88E-04
SR-92	2.44E-04
Y-92	2.37E-04
NB-95	2.35E-05
NB-95M	2.99E-06
MO-99	1.56E-03
TC-99M	4.83E-03
TC-101	1.17E-05
TC-104	6.04E-05
RU-105	1.90E-05
AG-110M	4.37E-04
SB-124	3.59E-05
SB-125	1.24E-04
I-131	1.31E-02
I-132	2.70E-04
TE-132	1.05E-03
I-133	5.97E-03
XE-133	4.91E-02
XE-133M	5.28E-04
CS-134	3.43E-02
I-134	3.41E-05
I-135	2.88E-03
XE-135	1.63E-01
XE-135M	1.82E-03
CS-136	2.85E-04
CS-137	1.21E-01
BA-LA-140	1.35E-04
CE-144	8.58E-04
W-187	2.23E-04
NP-239	7.94E-03

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1988
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 5.55E+00
TOTAL LIQUID TRITIUM RELEASE 3.10E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.71E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.82E+11

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INSTALLATION: BRUNSWICK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1988
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

~~44~~ 63

41

5

MODE OF TRANSPORTATION

SOLE USE

SOLE USE

SOLE USE

DESTINATION

CNSI BARNWELL SC

SEG OAK RIDGE TN

US ECOLOGY HANFORD WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS

0

MODE OF TRANSPORTATION

N/A

DESTINATION

N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A FE-59

CO-58

CO-60

CR-51

CS-134

CS-137

FE-55

I-131

MO-54

NI-63

B

CO-58

CO-60

CR-51

CS-137

FE-55

MO-54

NI-63

D

CO-60

CS-137

FE-55

MO-54

SR-89

%

1.42E+00

%

2.86E+01

%

2.77E+00

%

2.50E+00

%

4.60E+01

%

1.07E+00

%

1.66E+01

%

1.12E+00

%

1.20E+00

%

1.39E+01

%

1.40E+00

%

6.47E+01

%

1.11E+01

%

9.70E-01

%

2.60E+01

%

1.30E+00

%

6.30E+01

%

2.58E+00

%

1.55E+00

7.8E-01

~~1.44E+00~~

~~2.56E+01~~

~~8.38E+00~~

~~1.74E+00~~

~~3.32E+00~~

~~3.72E+01~~

~~1.07E+00~~

~~1.64E+01~~

~~3.37E+00~~

2.01E+00

2.46E+01

4.50E+00

2.75E+00

3.98E+00

3.40E+01

7.00E-01

1.90E+01

1.20E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

D. OTHER
OIL

UNIT YEAR TOTAL

M3 ~~3.00E+02~~

C1 ~~1.24E+02~~

M3 3.15E+02

C1 2.41E+01

M3 0.00E+00

C1 0.00E+00

M3 5.84E+01

C1 6.35E-01

3.16E+2

1.25E+5

*VOLUMES REPORTED WERE AFTER COMPACTION

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INSTALLATION-BRUNSWICK

LOCATION 20 MI S WILMINGTON, NC

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1988
SUPPLEMENTAL INFORMATION

UNIT NUMBER 1 TYPE BWR
DOCKET NO. 50-325
THERMAL POWER (MWT) $1.43E+07$
COMMERCIAL OPERATION 03/18/77
COOLING WATER SOURCE CAPE FEAR RIVER

LICENSEE CAROLINA POWER & LIGHT
LICENSED POWER (MWT) $2.04E+03$
NET ELECTRIC POWER (MWT) $4.45E+06$
INITIAL CRITICALITY 10/08/76

UNIT NUMBER 2 TYPE BWR
DOCKET NO. 50-324
THERMAL POWER (MWT) $1.24E+07$
COMMERCIAL OPERATION 11/03/75
COOLING WATER SOURCE CAPE FEAR RIVER

LICENSEE CAROLINA POWER & LIGHT
LICENSED POWER (MWT) $2.44E+03$
NET ELECTRIC POWER (MWT) $3.92E+06$
INITIAL CRITICALITY 03/20/75

MAXIMUM PERMISSIBLE CONCENTRATIONS(MICROCURIES/ML)

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

FISSION AND ACTIVATION GASES
ANALYSIS FOR SPECIFIC RADIONUCLIDES IN REPRESENTATIVE GRAB SAMPLES AND PARTICULATE FILTER
BY GAMMA SPECTROSCOPY

IODINES
ANALYSIS FOR SPECIFIC RADIONUCLIDES COLLECTED ON CHARCOAL CARTRIDGES BY GAMMA SPECTROSCOPY

PARTICULATES
ANALYSIS FOR SPECIFIC RADIONUCLIDES COLLECTED ON FILTER PAPERS BY GAMMA SPECTROSCOPY

LIQUID EFFLUENTS
ANALYSIS FOR SPECIFIC RADIONUCLIDES BY INDIVIDUAL RELEASES AND COMPOSITE SAMPLE BY
GAMMA SPECTROSCOPY

INSTALLATION=BRUNSWICK

LOCATION 20 MI S WILMINGTON, NC

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1988

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

BETA FIRST SIX MONTHS GAMMA

FIRST SIX MONTHS

BATCH RELEASES

A. LIQUID

1. NUMBER OF BATCH RELEASES-	306
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	3.31E 4
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	2.45E 2
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	1.08E 2
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	6.00E 0
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-	2.46E 6

B. GASEOUS

1. NUMBER OF BATCH RELEASES-	0
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	

ABNORMAL RELEASES

A. LIQUID

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASED(CURIES)	0.00E 0

B. GASEOUS

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASES(CURIES)	0.00E 0

N/D=NOT DETECTABLE

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1988

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

BETA SECOND SIX MONTHS
GAMMA

BATCH RELEASES

A. LIQUID

	SECOND SIX MONTHS
1. NUMBER OF BATCH RELEASES-	71
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	2.65E 4
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.15E 3
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	1.15E 2
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.30E 1
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-	3.02E 6

B. GASEOUS

1. NUMBER OF BATCH RELEASES-	0
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	

ABNORMAL RELEASES

A. LIQUID

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASED(CURIES)	0.00E 0

B. GASEOUS

1. NUMBER OF RELEASES	0
2. TOTAL ACTIVITY RELEASES(CURIES)	0.00E 0

N/D=NOT DETECTABLE

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1988
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	2.01E 2	2.26E 2	1.15E 2
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	2.56E 1	2.87E 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	4.68E- 2	5.58E- 2	
B. IODINES				
1. TOTAL IODINE-131	CI	1.90E- 3	1.67E- 3	7.00E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	2.42E- 4	2.12E- 4	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES >8 DAYS	CI	1.08E- 2	6.95E- 2	7.00E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.37E- 3	8.84E- 3	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	5.27E- 6	4.80E- 6	
D. TRITIUM				
1. TOTAL RELEASE	CI	1.04E 0	1.24E 0	7.00E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.32E- 1	1.57E- 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

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INSTALLATION-BRUNSWICK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1988
GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER	QUARTER	QUARTER	QUARTER
		1	2	1	2
FISSION GASES					
AR-41	CI	4.72E- 1	8.64E- 1		
KR-85M	CI	5.45E 0	1.52E 1		
KR-87	CI	N/D	2.34E- 1		
KR-88	CI	2.21E 0	1.20E 1		
XE-133	CI	3.22E 1	8.79E 1		
XE-135	CI	7.84E- 1	1.00E 0		
XE-135M	CI	N/D	1.73E 0		
XE-137	CI	N/D	5.20E 0		
XE-138	CI	N/D	4.32E- 1		
IOTINES					
I-131	CI	1.46E- 3	5.98E- 4		
I-132	CI	N/D	2.37E- 3		
I-133	CI	3.39E- 3	3.55E- 3		
I-134	CI	N/D	2.16E- 4		
I-135	CI	N/D	4.02E- 3		
PARTICULATES					
CR-51	CI	1.88E- 4	1.42E- 5		
MN-54	CI	2.90E- 4	4.51E- 5		
CO-58	CI	7.63E- 5	1.59E- 6		
CO-60	CI	2.48E- 4	4.21E- 5		
SR-89	CI	1.80E- 5	1.83E- 4		
SR-90	CI	3.95E- 7	8.93E- 7		
CS-137	CI	1.09E- 5	7.47E- 6		
BA-140	CI	N/D	1.63E- 4		
LA-140	CI	N/D	1.31E- 4		

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1988
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	4.96E 2	6.53E 2	1.15E 2
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	6.24E 1	8.22E 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	8.60E- 2	8.40E- 2	
B. IODINES				
1. TOTAL IODINE-131	CI	1.05E- 2	8.59E- 3	7.00E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.32E- 3	1.08E- 3	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES >8 DAYS	CI	5.45E- 2	1.92E- 2	7.00E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	6.86E- 3	2.42E- 3	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			
4. GROSS ALPHA RADIOACTIVITY	CI	3.80E- 6	6.04E- 6	
D. TRITIUM				
1. TOTAL RELEASE	CI	2.41E 0	8.55E- 1	7.00E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	3.03E- 1	1.08E- 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%			

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INSTALLATION-BRUNSWICK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1988
GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
AR-41	CI	N/D		2.04E 1	
KR-85M	CI	1.76E 1		2.99E 1	
KR-87	CI	2.27E 0		8.15E 0	
KR-88	CI	1.52E 1		3.03E 1	
XE-133	CI	1.67E 2		8.99E 1	
XE-133M	CI	1.13E 0		N/D	
XE-135	CI	1.14E 1		2.19E 1	
XE-135M	CI	1.84E 1		3.23E 1	
XE-137	CI	7.21E 1		1.53E 2	
XE-138	CI	1.23E 1		3.78E 1	
IODINES					
I-131	CI	7.54E- 3		6.32E- 3	
I-132	CI	2.92E- 3		2.91E- 3	
I-133	CI	6.48E- 3		7.18E- 3	
I-134	CI	N/D		1.93E- 3	
I-135	CI	4.91E- 3		6.52E- 3	
PARTICULATES					
CR-51	CI	7.09E- 6		2.68E- 4	
MN-54	CI	1.85E- 6		9.07E- 6	
CO-60	CI	1.25E- 5		2.03E- 5	
SR-89	CI	3.40E- 4		3.43E- 4	
SR-90	CI	1.33E- 6		2.12E- 6	
RU-103	CI	1.51E- 6		N/D	
CS-134	CI	N/D		1.37E- 5	
CS-137	CI	9.11E- 7		2.13E- 5	
BA-LA-140	CI	7.97E- 4		1.05E- 3	

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INSTALLATION=BRUNSWICK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1988
GASEOUS EFFLUENTS-GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
XE-133	CI	1.31E 1	3.78E 0		
XE-135	CI	1.47E 2	9.70E 1		
IODINES					
I-131	CI	4.42E- 4	1.07E- 3		
I-132	CI	N/D	1.15E- 2		
I-133	CI	5.24E- 4	8.81E- 3		
I-134	CI	N/D	2.06E- 2		
I-135	CI	N/D	1.27E- 2		
PARTICULATES					
CR-51	CI	4.10E- 3	6.35E- 2		
MN-54	CI	2.06E- 3	1.57E- 3		
CO-58	CI	3.60E- 4	1.25E- 3		
FE-59	CI	1.02E- 3	1.05E- 4		
CO-60	CI	2.16E- 3	1.49E- 3		
SR-89	CI	3.86E- 6	9.08E- 5		
SR-90	CI	N/D	1.27E- 6		
NB-95	CI	1.03E- 5		N/D	
CS-134	CI	N/D	6.53E- 6		
CS-136	CI	N/D	1.89E- 8		
CS-137	CI	4.81E- 5	2.47E- 4		
BA-140	CI	4.21E- 5	4.09E- 4		
LA-140	CI	4.30E- 5	2.46E- 4		
CE-144	CI	2.06E- 5	N/D		

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1988
GASEOUS EFFLUENTS-GROUND RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
KR-85M	CI	1.17E 0	1.51E 0		
KR-88	CI	1.38E 0	N/D		
XE-133	CI	2.07E 1	2.09E 1		
XE-135	CI	1.42E 2	1.88E 2		
XE-135M	CI	1.33E 1	1.88E 1		
IODINES					
I-131	CI	2.99E- 3	2.27E- 3		
I-132	CI	1.25E- 2	5.83E- 3		
I-133	CI	9.88E- 3	3.70E- 3		
I-135	CI	1.24E- 2	5.13E- 3		
PARTICULATES					
CR-51	CI	5.01E- 2	1.14E- 2		
MN-54	CI	8.72E- 4	1.65E- 3		
CO-57	CI	2.66E- 6	N/D		
CO-58	CI	1.10E- 3	1.20E- 3		
FE-59	CI	4.69E- 5	2.19E- 4		
CO-60	CI	9.54E- 4	2.80E- 3		
ZN-65	CI	N/D	5.73E- 5		
SR-89	CI	2.93E- 6	9.58E- 6		
SR-90	CI	2.22E- 6	9.22E- 7		
NB-95	CI	N/D	7.36E- 6		
RU-103	CI	N/D	7.76E- 6		
CS-134	CI	1.05E- 4	1.62E- 5		
CS-136	CI	3.71E- 6	N/D		
CS-137	CI	6.76E- 5	3.73E- 5		
BA-LA-140	CI	N/D	6.61E- 5		
CE-141	CI	4.25E- 8	N/D		

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INSTALLATION-BRUNSWICK

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1988 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

FIRST SIX MONTHS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR, %
1. TYPE OF WASTE			
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.99E 2	
	CI	1.23E 5	1.00E 1
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.14E 2*	
	CI	2.14E 1	1.00E 1
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E 0	
	CI	0.00E 0	N/A
D. OTHER (DESCRIBE)	M3	0.00E 0	
	CI	0.00E 0	N/A

2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

A.	CO-58	%	1.42E 0
	CO-60	%	2.86E 1
	CR-51	%	2.77E 0
	CS-137	%	2.50E 0
	FE-55	%	4.60E 1
	MN-54	%	1.66E 1
	NI-63	%	1.12E 0
B.	CO-58	%	1.20E 0
	CO-60	%	1.89E 1
	CR-51	%	1.40E 0
	FE-55	%	6.47E 1
	MN-54	%	1.11E 1
	NI-63	%	9.70E- 1

3. SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
40	SOLE USE	CNSI BARNWELL SC
26	SOLE USE	SEG OAK RIDGE TN

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

* VOLUMES REPORTED WERE AFTER COMPACTION

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BRUNSWICK

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR 1988
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

SECOND SIX MONTHS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR, %
1. TYPE OF WASTE			
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.09E 2	1.17E 2
	C1	6.50E 2	1.00E 1
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.01E 2	1.00E 1
	C1	2.67E 0	1.00E 1
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E 0	
	C1	0.00E 0	
D. OTHER (DESCRIBE)	M3	5.84E 1	
OIL	C1	6.35E 1	1.00E 1

2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

		%		
A.	FE-59	%	1.44E 0	7.8E -1
	CO-58	%	2.50E 1	2.01E +0
	CR-51	%	0.30E 0	2.46E +1
	CS-134	%	1.74E 0	4.36E +0
	CS-137	%	3.32E 0	2.75E +0
	FE-55	%	3.72E 1	3.98E +0
	I-131	%	1.07E 0	3.40E +1
	MN-54	%	1.64E 1	7.0E -1
	NI-63	%	5.37E 0	1.9E +1
B.	CO-60	%	1.91E 1	1.2E +0
	CR-51	%	3.83E 0	
	CS-137	%	1.70E 0	
	FE-55	%	6.63E 1	
	MN-54	%	6.87E 0	
D.	CO-60	%	2.60E 1	
	CS-137	%	1.30E 0	
	FE-55	%	6.30E 1	
	MN-54	%	2.58E 0	
	SR-89	%	1.55E 0	

3. SOLID WASTE DISPOSITION

NUM. R OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
24 23	SOLE USE	CNSI BARNWELL SC
15	SOLE USE	SEG OAK RIDGE TN
5	SOLE USE	US ECOLOGY HANFORD WA

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

* VOLUMES REPORTED WERE AFTER COMPACTION
N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION=BRUNSWICK

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1988
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST TOTAL ERROR %
A. FISSION AND ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CI	1.80E- 1	3.48E- 1	3.50E- 1 3.50E+1
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	6.55E- 9	7.79E- 9	
3. PERCENT OF APPLICABLE LIMIT	%	5.52E- 1	8.46E- 1	
B. TRITIUM				
1. TOTAL RELEASE	CI	3.59E 0	4.62E 0	4.00E 0
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.40E- 7	1.03E- 7	
3. PERCENT OF APPLICABLE LIMIT	%	8.00E- 3	3.43E- 3	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	2.08E- 3	1.57E- 2	3.50E 1
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	7.56E-11	3.51E-10	
3. PERCENT OF APPLICABLE LIMIT	%	3.78E- 5	1.76E- 4	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	0.00E 0	0.00E 0	4.00E 1
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)				
	LITERS	1.21E 7	1.06E 7	1.25E 1
F. VOLUME OF DILUTION WATER USED DURING PERIOD				
	LITERS	2.75E 10	4.47E 10	1.30E 1

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BRUNSWICK

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1988
LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
NA-24	CI			1.19E-3	6.13E-3
AR-41	CI			5.40E-6	N/D
CR-51	CI			8.76E-3	3.47E-2
MA-54	CI			4.21E-2	7.93E-2
FE-55	CI			1.87E-2	6.57E-3
CO-58	CI			8.21E-3	1.56E-2
FE-59	CI			2.85E-3	7.70E-3
CO-60	CI			3.72E-2	1.28E-1
AS-76	CI			1.52E-4	4.00E-4
SR-89	CI			1.86E-4	1.69E-3
SR-91	CI			N/D	9.92E-5
Y-91M	CI			3.47E-6	9.75E-5
SR-92	CI			3.67E-5	4.33E-5
NB-95	CI			N/D	2.16E-5
NB-95M	CI			2.99E-6	N/D
MO-99	CI			N/D	1.92E-4
TC-99M	CI			3.50E-5	9.05E-4
AG-110M	CI			6.95E-5	4.90E-5
SB-125	CI			1.24E-4	N/D
I-131	CI			7.34E-4	1.19E-3
I-132	CI			N/D	8.52E-5
I-133	CI			1.23E-4	1.19E-3
XE-133	CI			3.06E-4	2.97E-3
CS-134	CI			1.01E-2	1.02E-2
I-134	CI			1.28E-5	2.15E-5
I-135	CI			N/D	8.15E-4
XE-135	CI			1.77E-3	1.22E-2
XE-135M	CI			N/D	5.05E-4
CS-137	CI			4.88E-2	5.33E-2
CE-144	CI			7.99E-4	N/D
W-187	CI			7.15E-5	N/D

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BRUNSWICK

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1968
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	EST TOTAL ERROR %
A. FISSION AND ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CI	1.68E- 1	1.36E- 1	3.50E 1
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.37E- 9	3.45E- 9	
3. PERCENT OF APPLICABLE LIMIT	%	5.79E- 2	2.4 E- 1	
B. TRITIUM				
1. TOTAL RELEASE	CI	1.67E 1	3.10E 0	4.00E 0
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.36E- 7	7.87E- 8	
3. PERCENT OF APPLICABLE LIMIT	%	7.87E- 3	2.62E- 3	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	1.16E- 1	8.41E- 2	3.50E 1
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	1.64E- 9	2.13E- 9	
3. PERCENT OF APPLICABLE LIMIT	%	8.20E- 4	1.07E- 3	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	0.00E 0	0.00E 0	4.00E 1
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.30E 7	1.14E 7	1.25E 1
F. VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.07E 10	3.94E 10	1.30E 1

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BRUNSWICK

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR 1988
LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
NA-24	CI			5.67E-3	1.36E-3
CR-51	CI			8.42E-2	1.49E-2
MN-54	CI			1.11E-2	2.89E-2
FE-55	CI			1.71E-3	5.85E-3
MN-56	CI			1.95E-5	2.95E-5
CO-57	CI			7.98E-6	N/D
CO-58	CI			3.10E-3	1.19E-2
FE-59	CI			N/D	2.02E-4
CO-60	CI			1.76E-2	4.85E-2
ZN-69M	CI			1.85E-6	N/D
AS-76	CI			1.95E-4	5.52E-6
KR-85	CI			N/D	4.19E-3
KR-85M	CI			5.45E-6	N/D
SR-89	CI			3.90E-4	1.80E-4
SR-90	CI			6.34E-5	N/D
SR-91	CI			3.07E-4	N/D
Y-91M	CI			3.32E-4	5.50E-5
SR-92	CI			1.57E-4	7.07E-6
Y-92	CI			N/D	2.37E-4
NB-95	CI			7.44E-7	1.20E-6
MO-99	CI			1.37E-3	N/D
TC-99M	CI			3.22E-3	2.71E-4
TC-101	CI			1.17E-5	N/D
TC-104	CI			5.52E-5	5.21E-6
RU-105	CI			N/D	1.90E-5
AG-110M	CI			3.18E-4	N/D
SB-124	CI			3.59E-5	N/D
I-131	CI			7.38E-3	3.80E-3
I-132	CI			1.85E-4	N/D
TE-132	CI			6.65E-4	3.89E-4
I-133	CI			4.19E-3	4.67E-4
XE-133	CI			2.88E-2	1.70E-2
XE-133M	CI			4.24E-4	1.04E-4
CS-134	CI			6.59E-3	7.40E-3
I-135	CI			2.06E-3	N/D
XE-135	CI			8.59E-2	6.28E-2
XE-135M	CI			1.27E-3	4.07E-5
CS-136	CI			2.85E-4	N/D
CS-137	CI			1.11E-2	7.88E-3
BA-LA-140	CI			8.62E-6	1.26E-4
CE-144	CI			N/D	5.93E-5
W-187	CI			1.51E-4	N/D
NP-239	CI			4.98E-3	2.96E-3

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE