



**Consumers
Power**

POWERING

MICHIGAN'S FUTURE

General Office: 1945 West Farnham Road, Jackson, MI 49201 • (517) 788 0610

July 8, 1987

Joyce Tichler
Atmospheric Science Division
Brookhaven National Laboratory
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DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT -
CONSUMERS POWER COMPANY COMMENTS ON BROOKHAVEN NATIONAL
LABORATORY DRAFT REPORT, RADIOACTIVE EFFLUENTS RELEASED
DURING 1985

At the request of the NRC, Consumers Power Company is submitting to you our
comments on the draft report of radioactive effluents released from commercial
nuclear power plants during 1985.

The following corrections should be made to the report:

1. Total Fe-59 activity for 1985 should be $4.08\text{E}-05$ Ci; not $4.00\text{E}+06$ Ci.
2. 4th Quarter Fe-59 activity should be $4.00\text{E}-06$ Ci; not $4.00\text{E}+06$ Ci.

Brian D Johnson (Signed)

Brian D Johnson
Staff Licensing Engineer

CC Administrator, Region III, NRC
NRC Resident Inspector - Big Rock Point

Attachment

8707150625 870708
PDR ADOCK 05000155
R PDR

OC0787-0099-NL02

IE25
1/1

INSTALLATION: BIG ROCK POINT

LOCATION: 4 MI NE CHARLEVOIX, MI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1985
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1

TYPE: BWR

DOCKET NO. 158-155

COOLING WATER SOURCE: LAKE MICHIGAN

LICENSEE: CONSUMERS POWER

LICENSED POWER (MWT): 240.00

INITIAL CRITICALITY: 89/27/62

AIRBORNE EFFLUENTS

NUCLIDES RELEASED

ACTIVITY (Ci)

N-13	1.40E-03
NA-24	1.62E-03
CR-51	5.26E-03
MN-54	1.50E-04
MN-56	2.38E-04
CO-58	3.62E-05
FE-59	4.00E-05
CO-60	4.29E-04
ZN-65	6.34E-04
BR-82	6.61E-03
KR-81M	1.41E-03
FR-85	5.60E-00
KR-85M	2.49E-03
FR-87	8.06E-03
AR-88	1.43E-04
KR-89	5.97E-02
SR-89	1.93E-03
FP-90	3.43E-02
SR-90	3.32E-06
SR-91	2.29E-04
NB-95	2.25E-07
MO-99	2.23E-03
AG-110M	5.35E-04
I-131	6.93E-02
XE-131M	5.27E-00
I-132	3.99E-02
I-133	7.69E-02
XE-133	8.30E-03
XE-133M	1.23E-02
CS-134	7.63E-04
I-135	7.62E-02
XE-135	1.16E-04
XE-135M	2.46E-03
CS-136	1.01E-04
CS-137	1.10E-03
XE-137	1.20E-03
CS-138	3.39E-00
XE-138	1.26E-04
BA-139	1.11E-03
XE-139	5.03E-02
BA-140	1.30E-03
LA-140	6.84E-03
CE-141	1.50E-06
MG-203	5.96E-05

4.09E-5

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

INSTALLATION: BIG ROCK POINT

LOCATION: 4 MI NE CHARLEVOIX, MI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1985
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED

NP-239 2.52E-03

UNIDENTIFIED 2.66E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED

ACTIVITY (CI)

NA-24 5.26E-05

CR-51 1.13E-03

MN-54 1.75E-02

CO-58 1.03E-03

FE-59 1.60E-03

CO-60 2.05E-02

ZN-65 1.60E-03

SR-89 4.64E-04

SR-90 5.34E-04

SR-92 7.62E-05

NB-95 2.89E-05

MO-99 1.77E-04

AG-110M 1.11E-03

I-131 2.15E-02

I-133 2.12E-03

XE-133 2.25E-03

CS-134 1.03E-02

I-135 1.37E-04

CS-136 1.09E-04

CS-137 2.49E-02

LA-140 4.00E-00

HG-203 1.63E-04

NP-239 1.59E-03

UNIDENTIFIED 3.90E-02

TOTAL AIRBORNE TRITIUM RELEASE 2.52E-01

TOTAL LIQUID TRITIUM RELEASE 1.27E-00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION) LITERS 5.22E+05

VOLUME OF DILUTION WATER USED DURING PERIOD LITERS 0.63E+10

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

INSTALLATION: BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1985 SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

MODE OF TRANSPORTATION

DESTINATION

4
1

TRUCK
TRUCK

BARNWELL SC
RICHLAND WA

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS

MODE OF TRANSPORTATION

DESTINATION

0

N/A

N/A

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

UNIT YEAR TOTAL

M3 1.09E+01

CI 1.09E+02

M3 4.13E+01

CI 5.41E+00

M3 0.00E+00

CI 0.00E+00

M3 0.00E+00

CI 0.00E+00

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

INSTALLATION-BIG ROCK POINT

LOCATION 4 MI NE CHARLEVOIX, MI

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR 1985
SUPPLEMENTAL INFORMATION

UNIT NUMBER 1

TYPE BWR

DOCKET NO. 58-155

COOLING WATER SOURCE LAKE MICHIGAN

LICENSEE CONSUMERS POWER

LICENSED POWER (MW) 248.

INITIAL CRITICALITY 89/27/62

MAXIMUM PERMISSIBLE CONCENTRATIONS(MICROCURIES/ML)

MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

INSTALLATION-BIG ROCK POINT

LOCATION 4 MI NE CHARLEVOIX, MI

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR 1985

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

BETA		GAMMA	
QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2

QUARTER 1	QUARTER 2
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BATCH RELEASES

A. LIQUID

1. NUMBER OF BATCH RELEASES-
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)-
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-

1.00E 3	4.91E 2
5.57E 2	2.56E 2
3.35E 2	1.64E 2
1.96E 2	6.80E 1

B. GASEOUS

1. NUMBER OF BATCH RELEASES-
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
2. TOTAL ACTIVITY RELEASED(CURIES)

B. GASEOUS

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

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

LOCATION 4 MI NE CHARLEVOIX, MI

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1985

SUPPLEMENTAL INFORMATION

AVERAGE ENERGY(MEV/DISINTEGRATION)

	BETA		GAMMA
QUARTER	QUARTER	QUARTER	QUARTER
3	4	2	4

QUARTER	QUARTER
3	4

BATCH RELEASES

A. LIQUID

1. NUMBER OF BATCH RELEASES-	18	18
2. TOTAL TIME PERIOD FOR BATCH RELEASES(MIN)-	2.98E 3	4.19E 3
3. MAXIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	9.61E 2	1.24E 3
4. AVERAGE TIME PERIOD FOR BATCH RELEASES(MIN)-	2.98E 2	2.33E 2
5. MINIMUM TIME PERIOD FOR A BATCH RELEASE(MIN)-	1.78E 2	2.28E 1
6. AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF EFFLUENT INTO A FLOWING STREAM(LTS/MIN)-		

B. GASEOUS

1. NUMBER OF BATCH RELEASES-
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
2. TOTAL ACTIVITY RELEASED(CURIES)

B. GASEOUS

1. NUMBER OF RELEASES
2. TOTAL ACTIVITY RELEASES(CURIES)

N/D-NOT DETECTABLE

N/A-NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1985 GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
N-13	CI	5.00E	2	3.79E	2
KR-83M	CI	5.49E	2	4.62E	2
KR-85	CI	1.50E	#	1.32E	#
KR-85M	CI	9.75E	2	8.10E	2
KR-87	CI	4.40E	3	2.02E	3
KR-88	CI	1.07E	4	1.92E	3
KR-89	CI	2.62E	2	2.19E	2
KR-90	CI	1.21E	2	1.01E	2
XE-131M	CI	1.99E	#	1.67E	#
XE-133	CI	2.26E	3	1.91E	3
XE-133M	CI	4.00E	1	4.03E	1
XE-135	CI	6.29E	3	3.63E	3
XE-135M	CI	9.46E	2	7.94E	2
XE-137	CI	4.55E	2	3.01E	2
XE-138	CI	5.42E	3	4.22E	3
XE-139	CI	1.79E	2	1.50E	2
IODINES					
I-131	CI	1.49E-	2	4.50E-	2
I-132	CI	7.29E-	3	2.13E-	2
I-133	CI	1.47E-	2	4.50E-	2
I-135	CI	1.45E-	2	3.04E-	2
PARTICULATES					
NA-24	CI	1.13E-	3*	4.93E-	4*
CR-51	CI	1.27E-	3	3.60E-	3
MN-54	CI	1.06E-	5	7.11E-	5
MN-56	CI	0.00E	#*	2.35E-	4*
CO-58	CI	1.54E-	6	3.00E-	5
FE-59	CI	0.00E	#	3.60E-	5
CO-60	CI	5.33E-	5	1.99E-	4
ZN-65	CI	1.90E-	5	3.14E-	4
BR-82	CI	1.65E-	3*	1.57E-	3*
SR-89	CI	1.93E-	3	0.00E	#
SR-90	CI	3.32E-	6	0.00E	#
NB-95	CI	0.00E	#	2.25E-	7
MO-99	CI	6.66E-	4*	1.11E-	3*
AG-110M	CI	1.00E-	5	3.76E-	4
CS-134	CI	9.00E-	5	5.42E-	4
CS-136	CI	6.77E-	6	1.75E-	4
CS-137	CI	1.56E-	4	7.14E-	4
CS-138	CI	1.34E	#*	1.00E	#*
BA-140	CI	2.77E-	4	5.45E-	4
LA-140	CI	1.40E-	3*	2.70E-	3*
HG-203	CI	1.49E-	5	5.01E-	5

N/D-NOT DETECTABLE

N/A-NOT APPLICABLE

NP-239
UNIDENTIFIED

CI 2.15E- 4° 1.56E- 3°
CI 0.08E 0 2.66E- 4

*HALF-LIVES < 8 DAYS; NOT INCLUDED IN OVERALL TOTALS

N/D-NOT DETECTABLE

N/A-NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1985 GASEOUS EFFLUENTS-ELEVATED RELEASE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
N-13	CI	2.87E	2	2.22E	2
KR-83M	CI	3.18E	2	8.81E	1
KR-85	CI	8.89E-	1	1.81E	0
KR-85M	CI	5.41E	2	1.52E	2
KR-87	CI	1.16E	3	3.98E	2
KR-88	CI	1.26E	3	3.86E	2
KR-89	CI	1.48E	2	6.7E	1
KR-90	CI	6.82E	1	5.24E	1
XE-131M	CI	1.12E	0	4.92E-	1
XE-133	CI	1.81E	3	2.82E	2
XE-133M	CI	2.72E	1	7.84E	0
XE-135	CI	2.19E	3	5.66E	2
XE-135M	CI	5.1E	2	1.82E	2
XE-137	CI	2.56E	2	1.13E	2
XE-138	CI	1.84E	3	1.13E	3
XE-139	CI	1.81E	2	7.27E	1
IODINES					
I-131	CI	7.77E-	3	1.64E-	3
I-132	CI	5.16E-	3	6.15E-	3
I-133	CI	8.62E-	3	7.82E-	3
I-135	CI	1.83E-	2	1.38E-	2
PARTICULATES					
CR-51	CI	1.18E-	4	2.88E-	4
MN-54	CI	1.55E-	5	6.18E-	5
CO-58	CI	8.88E	0	4.64E-	6
FE-59	CI	8.88E	0	4.88E-	6
CO-60	CI	2.86E-	5	1.66E-	4
ZN-65	CI	4.95E-	6	2.96E-	4
BR-82	CI	2.32E-	3*	1.87E-	3*
SR-91	CI	8.88E	0	2.29E-	4
MO-99	CI	7.34E-	6*	4.47E-	4*
AG-110M	CI	1.31E-	6	1.39E-	4
CS-134	CI	1.91E-	5	1.82E-	4
CS-137	CI	4.81E-	5	2.66E-	4
CS-138	CI	7.78E-	1*	2.83E-	1*
BA-139	CI	8.88E	0*	1.11E-	3*
BA-140	CI	1.97E-	4	3.57E-	4
LA-140	CI	5.67E-	4*	1.88E-	3*
CE-141	CI	8.88E	0	1.58E-	6
NP-239	CI	8.88E	0*	7.47E-	4*
*HALF-LIVES < 8 DAYS; NOT INCLUDED IN OVERALL TOTALS					

*HALF-LIVES < 8 DAYS; NOT INCLUDED IN OVERALL TOTALS

N/D-NOT DETECTABLE

N/A-NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1985 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 1	QUARTER 2	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	3.22E 4	1.70E 4	1.10E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	4.14E 3	2.16E 3	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	X	4.14E- 1	2.16E- 1	
B. IODINES				
1. TOTAL IODINE-131	CI	1.49E- 2	4.50E- 2	4.00E 0
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.92E- 3	5.73E- 3	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	X	1.60E- 1	4.70E- 1	
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES > 8 DAYS	CI	3.03E- 3	6.93E- 3	1.25E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	4.93E- 4	8.01E- 4	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	X	8.20E- 3	1.53E- 2	
4. GROSS ALPHA RADIOACTIVITY	CI	1.79E- 7	5.31E- 7	
D. TRITIUM				
1. TOTAL RELEASE	CI	1.03E 1	1.02E 1	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.33E 0	1.29E 0	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	X	5.54E- 2	5.40E- 2	

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR 1985
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QUARTER 3	QUARTER 4	EST TOTAL ERROR %
A. FISSION AND ACTIVATION GASES				
1. TOTAL RELEASE	CI	9.72E 3	3.64E 3	1.10E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.22E 3	4.50E 2	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	1.22E- 1	4.50E- 2	
B. IODINES				
1. TOTAL IODINE-131	CI	7.77E- 3	1.64E- 3	4.83E 0
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	9.70E- 4	2.06E- 4	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	0.15E- 2	1.72E- 2	
C. PARTICULATES				
1. PARTICULATES WITH HALF-LIVES >8 DAYS	CI	5.56E- 4	1.92E- 3	1.89E 1
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	6.99E- 5	2.41E- 4	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	5.26E- 3	1.12E- 2	
4. GROSS ALPHA RADIOACTIVITY	CI	4.50E- 7	2.33E- 7	
D. TRITIUM				
1. TOTAL RELEASE	CI	2.45E 0	2.20E 0	
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	3.00E- 1	2.76E- 1	
3. PERCENT OF TECHNICAL SPECIFICATION LIMIT	%	1.20E- 2	1.15E- 2	

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1985
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	1.68E- 2	9.88E- 3	5.18E 0
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	6.49E-10	3.93E-10	
3. PERCENT OF APPLICABLE LIMIT	%	2.15E- 2	1.88E- 2	
B. TRITIUM				
1. TOTAL RELEASE	CI	4.46E- 2	2.64E- 2	4.88E 0
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	1.83E- 9	1.16E- 9	
3. PERCENT OF APPLICABLE LIMIT	%	6.11E- 5	3.86E- 5	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	5.63E- 5	5.16E- 5	1.49E 1
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.31E-12	2.26E-12	
3. PERCENT OF APPLICABLE LIMIT	%	1.16E- 6	1.13E- 6	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	1.76E- 6	4.82E- 7	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)				
	LITERS	5.29E 4	4.28E 4	
F. VOLUME OF DILUTION WATER USED DURING PERIOD				
	LITERS	2.43E 10	2.29E 10	

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL REPORT FOR 1985 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	4.99E- 2	7.88E- 2	4.38E 0
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.37E- 9	4.61E- 9	
3. PERCENT OF APPLICABLE LIMIT	%	3.11E- 1	1.02E- 1	
B. TRITIUM				
1. TOTAL RELEASE	CI	2.88E- 1	9.28E- 1	4.81E 0
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	1.33E- 8	5.38E- 8	
3. PERCENT OF APPLICABLE LIMIT	%	4.43E- 4	1.79E- 3	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CI	2.88E- 3	1.47E- 4	4.47E 0
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	9.52E-11	8.59E-12	
3. PERCENT OF APPLICABLE LIMIT	%	4.76E- 6	4.38E- 6	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CI	2.61E- 6	6.35E- 6	
E. VOLUME OF WASTE RELEASED(PRIOR TO DILUTION)				
	LITERS	1.67E 5	2.68E 5	
F. VOLUME OF DILUTION WATER USED DURING PERIOD				
	LITERS	2.18E 18	1.71E 18	

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1985 LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
MN-54	CI			2.68E- 3	1.65E- 3
CO-58	CI			1.14E- 5	7.34E- 5
FE-59	CI			8.73E- 6	1.82E- 4
CO-60	CI			2.96E- 3	1.99E- 3
ZN-65	CI			9.45E- 5	1.29E- 4
SR-89	CI			2.89E- 5	6.63E- 6
SR-90	CI			1.61E- 5	9.32E- 6
SR-92	CI			5.23E- 6	1.16E- 5
MO-99	CI			8.88E- 8	1.88E- 5
AG-110M	CI			3.34E- 5	4.86E- 5
I-131	CI			7.88E- 4	9.54E- 4
I-133	CI			8.88E- 8	5.88E- 6
XE-133	CI			5.63E- 5	5.16E- 5
CS-134	CI			3.24E- 4	5.14E- 4
CS-136	CI			8.88E- 8	2.81E- 5
CS-137	CI			1.84E- 3	1.43E- 3
LA-140	CI			8.88E- 8	8.88E- 8
UNIDENTIFIED	CI			6.91E- 3	2.84E- 3

N/D-NOT DETECTABLE

N/A-NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1985 LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
		QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
NA-24	CI			5.26E- 5	0.00E 0
CR-51	CI			1.04E- 3	9.01E- 5
MN-54	CI			3.08E- 3	1.01E- 2
CO-58	CI			0.00E 0	9.45E- 4
FE-59	CI			1.71E- 4	1.24E- 3
CO-60	CI			4.74E- 3	1.00E- 2
ZN-65	CI			7.75E- 5	1.20E- 3
SR-89	CI			0.67E- 5	3.50E- 4
SR-90	CI			1.42E- 4	3.60E- 4
SR-92	CI			3.07E- 5	2.07E- 5
NB-95	CI			2.32E- 5	2.74E- 6
MO-99	CI			1.59E- 4	0.00E 0
AG-110M	CI			1.05E- 4	9.33E- 4
I-131	CI			1.79E- 2	1.05E- 3
I-133	CI			2.11E- 3	0.00E 0
XE-133	CI			2.00E- 3	1.47E- 4
CS-134	CI			1.21E- 3	0.25E- 3
I-135	CI			1.37E- 4	0.00E 0
CS-136	CI			0.00E 0	1.61E- 4
CS-137	CI			1.00E- 2	1.16E- 2
HG-203	CI			1.63E- 4	0.00E 0
NP-239	CI			1.69E- 3	0.00E 0
UNIDENTIFIED	CI			7.15E- 3	2.29E- 2

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1985 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

FIRST SIX MONTHS

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

	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR, %
1. TYPE OF WASTE			
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	5.58E 0	
	C1	2.77E 1	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	5.58E 0	
	C1	4.78E 0	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E 0	
	C1	0.00E 0	
D. OTHER (DESCRIBE)	M3	0.00E 0	
	C1	0.00E 0	

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

3. SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
2	TRUCK	BARNWELL SC

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION)

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

N/D=NOT DETECTABLE

N/A=NOT APPLICABLE

INSTALLATION-BIG ROCK POINT

... EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR 1985 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

SECOND SIX MONTHS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED)	UNIT	6-MONTH PERIOD	EST. TOTAL ERROR, %
1. TYPE OF WASTE			
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	5.40E 0	
	C3	0.10E 1	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	3.60E 1	
	C1	7.10E- 1	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E 0	
	C1	0.00E 0	
D. OTHER (DESCRIBE)	M3	0.00E 0	
	C1	0.00E 0	

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

3. SOLID WASTE DISPOSITION	MODE OF TRANSPORTATION	DESTINATION
NUMBER OF SHIPMENTS		
2	TRUCK	BARNWELL SC
1	TRUCK	RICHLAND WA

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION)	MODE OF TRANSPORTATION	DESTINATION
NUMBER OF SHIPMENTS		
0	N/A	N/A

N/D-NOT DETECTABLE

N/A-NOT APPLICABLE