



Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61010

August , 1989

LTR: BYRON 89-0805
FILE: 2.12.1522

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

SUBJECT: Byron Station Operating Report, NRC Dockets
Unit 1 Docket Number STN 50-454
Unit 2 Docket Number STN 50-455

TO WHOM IT MAY CONCERN:

Enclosed is the Radioactive Effluent Report for January through June, 1989, for Byron Nuclear Power Station.

A copy of this report will be furnished to the NRC Resident Inspector.

Sincerely,

R. Pleniewicz
Station Manager
Byron Nuclear Power Station

RP/SB/jr

Enclosure

cc: Distribution List

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Distribution List

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August 24, 1989

NRC Resident Inspector
Illinois Department of Nuclear Safety
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American Electric Power Service Corp.
U. S. Environmental Protection Agency - Region III
Illinois Environmental Protection Agency - Division of Water
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Illinois Power Company
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Health Physics Services Supervisor - Byron
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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY TO JUNE 1989
Supplemental Information

1. Regulatory Limits

a. Fission and activation gases:

10CFR20 Whole Body = 500 mrem/year
Skin = 3000 mrem/year

10CFR50 Gamma = 5 mrad/quarter; 10 mrad/year
Beta = 10 mrad/quarter; 20 mrad/year

b. Iodine: (summed with particulate, see below)

c. Particulates with half-lives > 8 days:

10CFR20 Organ = 1500 mrem/year

10CFR50 Organ = 7.5 mrem/quarter; 15 mrem/year

d. Liquid effluents:

10CFR50 Whole Body = 1.5 mrem/quarter;
3 mrem/year

Organ = 5 mrem/quarter;
10 mrem/year

2. Maximum Permissible Concentration

a. Fission and Activation Gases: 10CFR20 Appendix E Table II

b. Iodine: 10CFR20 Appendix B Table II

c. Particulates: 10CFR20 Appendix B Table II

d. Liquid Effluents: 10CFR20 Appendix B Table II

3. Average Energy: This item is not applicable. Release rates are calculated using an isotopic mix rather than average energy.

4. Measurements and Approximations of Total Radioactivity

a. Fission and Activation Gases: Prior to release, the isotopic content is determined. Released activity is calculated using volume of release, which is determined by the change in tank or containment pressure.

b. Iodine sampling media for the plant vent stacks is collected and isotopically analyzed daily for the plant vent stacks.

c. Particulates: same methodology as iodine.

d. Liquids effluents: Batch releases are isotopically analyzed prior to release. Total release activity is calculated using volume of release.

5. Batch Releases:

a. Liquid:

1. Number of batch releases = 144
2. Total time period for batch releases = 14,000 minutes
3. Maximum time period for a batch release = 229 minutes
4. Average time period for batch releases = 97 minutes
5. Minimum time period for a batch release = 61 minutes
6. Average stream flow during periods of release of effluent into a flowing stream = 4171 cfs, based on information from the National Weather Service or Army Corps of Engineers for the Rock River.

b. Gaseous:

1. Number of batch releases = 162
2. Total time period for batch releases = 27,300 minutes
3. Maximum time period for a batch release = 1573 minutes
4. Average time period for batch releases = 168.5 minutes
5. Minimum time period for a batch release = 47 minutes

6. Abnormal releases:

- a. Liquid -- none
- b. Gaseous -- none

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR January - June, 1989
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

		UNITS		JANUARY		FEBRUARY		MARCH		1st QUARTER		APRIL		MAY		JUNE		2nd QUARTER	
A. Fission and Activation Gas Releases																			
1. Total Release Activity			Ci	5.68E+1	1.07E+1	6.32E0	7.38E+1	4.58E0	6.88E0	3.60E+1	4.75E+1								
2. Maximum Release Rate			uCi/sec	5.72E+2	4.27E+2	1.86E+2	5.72E+2	1.31E+2	2.41E+2	4.06E+2	4.06E+2								
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	7.05E-5	1.86E-5	1.36E-5	1.03E-4	7.46E-6	2.10E-4	8.40E-6	2.26E-4								
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.

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BYRON NUC R POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR January - June, 1989
GASEOUS EFFLUENTS - SUMMARY OF ALL RELEASES

		UNITS	JANUARY	FEBRUARY	MARCH	1st QUARTER	APRIL	MAY	JUNE	2nd QUARTER
C. Particulate (> 8 day half-life) Releases										
1. Gross Activity	Ci	<LLD	<LLD	<LLD	3.40E-5	3.40E-5	<LLD	<LLD	<LLD	<LLD
2. Gross Alpha Activity	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
3. % of 10CFR20/10CFR50 Limits**										
D. Tritium Releases										
1. Total Release Activity	Ci	1.82E+2	1.26E0	1.01E-1	1.83E+2	1.49E-1	8.82E-2	6.99E-2		07E-1
2. % of 10CFR20/10CFR50 Limits**										
E. Sum of Iodine, Particulate (> 8 day half-life), and Tritium Releases										
1. Total Activity	Ci	1.82E+2	1.26E0	1.01E-1	1.83E+2	1.49E-1	8.84E-2	6.99E-2		3.07E-1
2. a. Any Organ (1500 mrem/year)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
3. a. Quarterly Any Organ (7.5 mrem)	%	0.77	0.00	0.00	0.77	0.00	0.00	0.00		0.00
b. Annual Any Organ (15.0 mrem)	%	0.39	0.00	0.00	0.39	0.00	0.00	0.00		0.00

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

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR January - June, 1989
GASEOUS EFFLUENTS - VENT STACK RELEASES

ISOPTDES RELEASED	UNITS	JANUARY	FEBRUARY	MARCH	1st QUARTER	APRIL	MAY	JUNE	2nd QUARTER
F. Fission and Activation Gas Releases									
Xe-131m	Ci	2.60E-1	2.36E-1	7.84E-2	5.74E-1	<LLD	<LLD	5.87E-1	5.87E-1
Xe-133m		4.54E-2	2.30E-2	5.04E-2	7.32E-2	8.33E-3	1.49E-2	1.62E-1	1.85E-1
Xe-135m		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-133		5.54E+1	9.90E0	6.03E0	7.13E+1	4.51E0	6.82E0	3.32E+1	4.45E+1
Xe-135		1.80E-1	3.40E-4	2.08E-2	2.01E-1	2.96E-2	2.54E-2	1.48E-1	2.03E-1
Kr-85m		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.98E-3	2.98E-3
Kr-85		9.20E-1	5.30E-1	2.08E-1	1.66E0	<LLD	<LLD	1.88E0	1.88E0
Kr-87		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-88		2.20E-3	3.78E-3	<LLD	5.98E-3	<LLD	<LLD	4.21E-3	4.21E-3
Ar-41		1.37E-2	1.08E-2	1.29E-2	3.74E-2	2.70E-2	2.01E-2	1.95E-2	6.66E-2
Others (Specify)									

G. Iodine Releases									
I-131	Ci	5.25E-5	1.86E-5	<LLD	7.11E-5	<LLD	<LLD	<LLD	<LLD
I-132		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-133		1.80E-5	<LLD	1.36E-5	3.16E-5	7.46E-6	2.01E-4	8.40E-6	2.17E-4
I-134		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-135		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Others (Specify)									

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR January - June, 1980
GASEOUS EFFLUENTS - VENT STACK RELEASES

ISOTOPES RELEASED	UNITS	JANUARY	FEBRUARY	MARCH	1st QUARTER	APRIL	MAY	JUNE	2nd QUARTER
H. Particulate (> 8 day half-life) Releases									
Mn-54	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-55		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Fe-59		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-58		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co-60		<LLD	<LLD	3.40E-5	3.40E-5	<LLD	<LLD	<LLD	<LLD
Sr-89		-	-	-	-	-	-	-	-
Sr-90		-	-	-	-	-	-	-	-
Y-88		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ru-103		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ag-110m		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-134		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-137		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ba/La-140		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Ce-144		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Others (Specify)									

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BYRON NUCLEAR POWER STATION

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR January - June, 1989
LIQUID EFFLUENTS - SUMMARY OF ALL RELEASES

	UNITS	JANUARY	FEBRUARY	MARCH	1st QUARTER	APRIL	MAY	JUNE	2nd QUARTER
I. Fission and Activation Products									
1. Total Activity Released	Ci	1.73E-1	8.01E-2	1.19E-1	3.72E-1	3.88E-2	1.06E-1	4.18E-2	1.87E-1
2. Average Concentration Released	uCi/ml	9.77E-8	5.64E-8	7.53E-9	1.96E-8	2.75E-8	6.06E-8	1.98E-8	3.54E-8
3. % of 10CFR50 Limits									
a. Quarterly Whole Body (1.5 mrem)	%	0.87	0.26	1.07	2.20	0.15	0.63	0.10	0.88
b. Quarterly Any Organ (5.0 mrem)	%	0.56	0.22	0.44	1.22	0.08	1.21	0.14	1.43
c. Annual Whole Body (3.0 mrem)	%	0.43	0.13	0.54	1.10	0.08	0.32	0.05	0.45
d. Annual Any Organ (10.0 mrem)	%	0.28	0.11	0.22	0.61	0.04	0.60	0.07	0.71
J. Tritium									
1. Total Activity Released	Ci	6.94E+1	5.34E+1	8.90E+1	2.12E+2	8.10E+1	1.17E+2	1.80E+2	3.78E+2
2. Average Concentration Released	uCi/ml	4.49E-5	3.76E-5	5.63E-6	1.12E-5	5.75E-5	6.69E-5	8.53E-5	7.17E-5
3. % of Limit (3E-3 uCi/ml)	%	1.50	1.25	0.19	0.37	1.92	2.23	2.84	2.39
K. Dissolved Noble Gasses									
1. Total Activity Released	Ci	2.78E-1	4.85E-2	4.74E-2	3.74E-1	5.60E-3	7.81E-2	1.53E-1	2.38E-1
2. Average Concentration Released	uCi/ml	1.57E-7	3.42E-8	3.00E-10	1.97E-8	3.97E-10	4.46E-8	7.25E-8	4.49E-8
3. % of Limit (2E-4 uCi/ml)	%	0.08	0.02	0.00	0.01	0.00	0.02	0.04	0.02
L. Gross Alpha									
1. Total Activity Released	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
2. Average Concentration Released	uCi/ml	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0	0.00E0
M. Volume of Liquid Waste to Discharge	liters	3.08E+6	1.75E+6	2.70E+6	17.53E+6	1.61E+6	2.31E+6	2.49E+6	6.41E+6
N. Volume of Dilution Water	liters	1.77E+9	1.42E+9	1.58E+10	11.90E+10	1.41E+9	1.75E+9	2.11E+9	5.27E+9

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR January - June, 1989
LIQUID EFFLUENTS

ISOTOPE RELEASES		UNITS	JANUARY	FEBRUARY	MARCH	1st QUARTER	APRIL	MAY	JUNE	2nd QUARTER
0. Liquid Effluents										
Others (Specify)	Sr-89	Ci	-	-	-	-	-	-	-	-
	Sr-90		-	-	-	-	-	-	-	-
	Co-58		7.16E-2	3.84E-2	4.20E-2	1.52E-1	1.21E-2	3.66E-2	1.28E-2	6.15E-2
	Co-60		3.21E-2	1.33E-2	2.58E-2	7.12E-2	7.26E-3	3.35E-2	1.67E-2	5.75E-2
	Cs-134		6.59E-3	1.97E-3	7.28E-3	1.58E-2	9.80E-4	2.97E-3	5.48E-4	4.50E-3
	Cs-136		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
	Cs-137		7.06E-3	2.02E-3	1.03E-2	1.94E-2	1.42E-3	4.84E-3	7.73E-4	7.03E-3
	I-131		1.99E-4	1.16E-4	<LLD	3.15E-4	<LLD	9.53E-5	<LLD	9.53E-5
	I-133		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
	Ba/La-140		5.55E-5	1.60E-5	2.40E-5	9.55E-5	3.24E-6	3.79E-5	1.37E-6	4.25E-5
	Xe-133		2.77E-1	4.82E-2	4.74E-2	3.73E-1	1.12E-2	7.78E-2	1.52E-1	2.41E-1
	Xe-135		2.30E-4	2.06E-4	4.26E-5	4.79E-4	<LLD	6.84E-5	5.80E-5	1.26E-4
			1.72E-2	9.30E-3	8.10E-3	3.46E-2	1.05E-2	8.58E-3	2.41E-3	2.15E-2
			4.18E-3	2.50E-3	3.62E-3	1.03E-2	1.26E-3	6.02E-3	2.95E-3	1.02E-2
			1.39E-2	5.44E-3	6.90E-3	1.37E-2	2.40E-3	3.26E-3	1.69E-3	7.35E-3
	Cr-51		6.41E-5	9.76E-5	5.00E-5	2.12E-4	9.04E-6	1.72E-4	4.50E-5	2.26E-4
	Mn-54		8.70E-3	3.42E-3	4.84E-3	1.70E-2	1.21E-3	4.28E-3	2.15E-3	7.64E-3
	Fe-59		4.84E-3	1.84E-3	2.72E-3	9.40E-3	6.02E-4	2.45E-3	1.12E-3	4.17E-3
	Co-57		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
	Nb-95		3.51E-4	3.86E-5	4.30E-4	8.20E-4	2.30E-5	1.29E-5	<LLD	3.59E-5
	Zr-95		3.93E-3	7.14E-4	4.38E-3	9.02E-3	1.07E-3	1.64E-3	2.04E-4	2.91E-3
	Sb-122		2.78E-4	2.34E-4	1.74E-4	6.86E-4	<LLD	7.18E-4	1.56E-4	8.74E-4
	Sb-124		6.12E-4	<LLD	1.86E-3	2.47E-3	<LLD	2.39E-4	<LLD	2.39E-4
	Sb-125		9.08E-5	<LLD	1.73E-4	2.64E-4	3.20E-6	5.14E-4	2.08E-4	7.25E-4
	Zn-65		7.83E-4	8.36E-5	2.12E-4	1.08E-3	<LLD	<LLD	<LLD	<LLD
	I-132		1.23E-4	9.92E-5	3.96E-5	2.62E-4	<LLD	<LLD	<LLD	<LLD
	Sn-113		3.93E-5	<LLD	<LLD	3.93E-5	<LLD	<LLD	<LLD	<LLD
	Ag-110m		4.76E-5	<LLD	<LLD	4.76E-5	<LLD	<LLD	<LLD	<LLD
	Hf-181		4.93E-4	2.04E-4	2.86E-4	9.83E-4	<LLD	3.06E-4	<LLD	3.06E-4
	Ru-103		2.58E-4	9.78E-5	<LLD	3.56E-4	<LLD	2.49E-4	4.59E-4	7.08E-4
	In-113m		2.92E-5	1.49E-4	<LLD	1.69E-4	<LLD	<LLD	<LLD	<LLD
	Ce-144		4.93E-4	2.04E-4	2.86E-4	9.83E-4	<LLD	3.06E-4	<LLD	3.06E-4
	Xe-133m		2.58E-4	9.78E-5	<LLD	3.56E-4	<LLD	2.49E-4	4.59E-4	7.08E-4
	M99/Tc99m		2.92E-5	1.49E-4	<LLD	1.69E-4	<LLD	<LLD	<LLD	<LLD

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH JAN. YEAR 1989

APR 28 1989

B.O.S.F.

DATE	Disposition of Material Description, Class, Type	Solidifying Agent	Mode of Transport	Destination	Volume Per Shipment (ft. ³)	Curies Per Shipment
1-3	Dewatered Resin, Class A, LSA, Liner in Cask, none		Exclusive Use	Barnwell, SC	177.3	1.46
1-9	Dewatered Resin, Class C, LSA, HIC in Cask, none		Exclusive Use	Barnwell, SC	135.8	330
1-11	Dewatered Resin, Class C, LSA, HIC in Cask, none		Exclusive Use	Barnwell, SC	135.8	53.7
1-20	Dewatered Resin, Class A, LSA, HIC in Cask, none		Exclusive Use	Barnwell, SC	178.9	9.69
1-26	DAW, Class A, LSA, drums, none		Exclusive Use	Vendor for Compaction	300.6 (final burial volume)	0.39
1-30	Dewatered Resin, Class A, LSA, HIC in Cask, none		Exclusive Use	Barnwell, SC	178.9	24.1
MONTHLY TOTALS:					1110	419

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EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
APR 28 1980
B.O.S.F.
MONTH FEB. YEAR 1980

DATE	Disposition of Material (Description, Class, Type)	Solidifying Agent	Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
2-1	Dewatered Resin, Class A, LSA, Liner in Cask, none		Exclusive Use	Barnwell, SC	177.3	0.17
2-10	Dewatered Resin, Class A, LSA, Liner in Cask, none		Exclusive Use	Barnwell, SC	177.3	2.33
2-15	Dewatered Resin, Class A, LSA, Liner in Cask, none		Exclusive Use	Barnwell, SC	177.3	4.86
2-24	DAW, Class A, LSA, drums, none		Exclusive Use	To Vendor for Compaction	307.1 (final burial volume)	0.21
MONTHLY TOTALS:					839	7.57

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH MARCH YEAR 1989

APR 29 1986

B. O. S. E.

MONTH	MARCH	YEAR 1989
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

DATE	Disposition of Material		Solidifying Agent	Mode of Transport	Destination	Volume Per Shipment (ft. ³)	Curies Per Shipment
	Description, Class	Type					
3-8	Dewatered Resin, Class A, LSA, Liner in cask, none			Exclusive Use	Barnwell, SC	177.3	1.07
3-13	Dewatered Resin, Class A, LSA, Liner in cask, none			Exclusive Use	Barnwell, SC	177.3	0.96
3-17	Dewatered Resin, Class A, LSA, Liner in cask, none			Exclusive Use	Barnwell, SC	177.3	1.87
3-22	Dewatered Resin, Class A, LSA, Liner in cask, none			Exclusive Use	Barnwell, SC	177.3	0.76
3-29	Dewatered Resin, Class A, LSA, Liner in cask, none			Exclusive Use	Barnwell, SC	177.3	0.78
MONTHLY TOTALS:						887	5.44

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B.O.S.F.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH APRIL YEAR 1989

DATE	Disposition of Material (Description, Class, Type)	Solidifying Agent	Mode of Transport	Destination	Volume Per Shipment (ft. ³)	Curies Per Shipment
4-10	DAW, Class A, LSA, Seavan, none		Exclusive Use	To Vendor for Compaction	*1280	0.11
4-17	DAW, Class A, LSA, Seavan, none		Exclusive Use	To Vendor for Compaction	*1280	0.17
4-19	Dewatered Resin, Class A, LSA, Liner in cask, none		Exclusive Use	Barnwell, SC	177.3	2.20
MONTHLY TOTALS:					2740	2.48

*Volume sent to vendor. This is not final burial volume.

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE

APR 29 1989

B.O.S.F.

MONTH MAY YEAR 1989

DATE	Disposition of Material (Description, Class, Type)	Solidifying Agent	Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
5-5	Dewatered Resin, Class A, LSA, Liner in Cask, none		Exclusive Use	Barnwell, SC	177.3	1.65
5-11	Spent Filters, Class A, HIC in cask, none		Exclusive Use	Barnwell, SC	73.4	3.92
5-16	Dewatered Resin, Class A, LSA, Liner in cask, none		Exclusive Use	Barnwell, SC	177.3	0.68
5-26	Dewatered Resin, Class C, LSA, HIC in cask, none		Exclusive Use	Barnwell, SC	73.4	269
MONTHLY TOTALS:					4	501
						275

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
APR 28 1989
B.O.S.F.
MONTH JUNE YEAR 1989

DATE	Disposition of Material (Description, Class, Type)	Solidifying Agent	Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
6-1	Dewatered Resin, Class C, LSA, HIC in cask, none		Exclusive Use	Barnwell, SC	135.8	175
6-21	Dewatered Resin, Class B, LSA, HIC in cask, none		Exclusive Use	Barnwell, SC	135.8	9.92
MONTHLY TOTALS:					272	185

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
JANUARY TO JUNE 1989

ADDENDUM

- A. The following is the breakdown for the continuous releases for gaseous effluents:

1st quarter: Xe-133 19.8 Curies
 Xe-135 0.077 Curies

TOTAL = 19.88 Curies

2nd quarter: No continuous releases

- B. The following data is the estimated composition of Byron's solid waste streams:

1. Dry Active Waste (DAW)	2. Primary Resin	3. Radwaste Resin
C-14 7.7%	Mn-54 1.54%	Mn-54 2.7%
Mn-54 4.0%	Co-58 60.9%	Co-58 30.6%
Fe-55 46.6%	Co-60 4.3%	Co-60 6.8%
Co-58 12.2%	Cs-134 8.7%	Cs-134 17.8%
Co-60 12.0%	Cs-137 7.5%	Cs-137 24.3%
Cs-134 3.3%	H-3 0.6%	H-3 9.0%
Cs-137 5.8%	C-14 1.2%	C-14 0.45%
Ni-63 8.4%	Fe-55 14.3%	Fe-55 6.8%
	Ni-63 0.9%	Tc-99 0.05%
	Sr-90 0.02%	I-129 0.1%
	Tc-99 0.03%	Pu-239 0.01%
	I-129 0.001%	Pu-238 0.01%
	Pu-239 0.001%	Am-241 0.04%
	Pu-238 0.001%	Cm-244 0.04%
	Am-241 0.001%	Ni-63 1.3%
	CM-244 0.001%	
	Pu-241 0.005%	

C. Per Technical Specifications 3.3.3.9 and 3.3.3.10, the following is a summary of effluent monitoring instrumentation inoperable for a period of time greater than specified in the Technical Specification:

1. Unit 1 Reactor Containment Fan Cooler Essential Service Water Outlet Monitor was inoperable for greater than 30 days. The extended period of inoperability was due to a faulty sample pump.

D. During this period, there were no major changes to the liquid, gaseous, or solid radwaste treatment systems. There were no major changes to the Process Control Program (PCP). Byron Station continues to utilize the services of Westinghouse-Hittman for dewatering and solidification services.

E. Error Analysis

The following is an estimate of the errors associated with effluent monitoring and analysis. The estimate is calculated using the square root of the sum of the squares methodology.

1. Gaseous Effluents

Sampling error = 1 to 3.5%
Calibration error = 10%
Counting Statistics error = 5%
Vent Stack flowrates error = 1.5%

Total error = 11 - 12%

2. Liquid Effluents

Sampling error = 1%
Calibration error = 10%
Sample volume error = 1%
Discharged volume error = 2%

Total error = 10%

F. Meteorological and environmental impact information is reported in the Station Annual Radiological Environmental Operating Report as required by Technical Specification 6.9.1.6.