

February 5, 1991

LTR: BYRON 91-0127
FILE: 2.12.1522

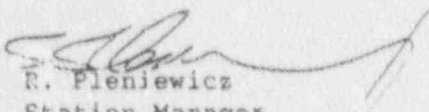
Mr. Bert Davis
Administrator
Nuclear Regulatory Commission Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

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 July through December, 1990,
for Byron Nuclear Power Station.

Two copies of the report are provided for your use. Two copies will be
forwarded to the Document Control Desk and one copy to the Resident Inspector.


R. Ploniewicz
Station Manager
Byron Nuclear Power Station

RP/BM/so

Attachment

cc: Distribution List Attached

9103010251 901231
PDR ADDCK 05000454
R PDR

(2283z/45)

LEAG
11

APPENDIX I
STATIONS SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
DISTRIBUTION LIST

Director of Nuclear Reactor Regulation - U.S. Nuclear Regulatory Commission
Nuclear Regulatory Commission, Region III
Illinois Department of Nuclear Safety, Office of Nuclear Facility Safety
A.N.I.
American Electric Power Service Corporation, Nuclear Operations Division
U.S. Environmental Protection Agency Air and Radiation Branch
Region V Health Physicist
Illinois Environmental Protection Agency - Region III
Illinois Environmental Protection Agency Division of Water Pollution Control
Environmental Protection Specialist
Murray and Trettel, Inc.
Teledyne Isotopes Midwest Laboratory and General Manager
Emergency Preparedness - Emergency Preparedness Director
Chemistry Services - Chemistry Services Director
Station Manager - Byron Nuclear Power Station
Health Physics Services Supervisor - Byron
Bill McNeill - Radiological Effluent Monitoring Program Coordinator
NRC Resident Inspector - Byron
B.P.I. Associates General Counsel
Illini State Park Site Superintendent
Nuclear Quality Programs & Assessments - General Manager

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY to DECEMBER 1990
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 B 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. Additional methods of calculation utilize historical data and assign an isotopic mix which is representative of normal vent stack isotopics.
- b. Particulate, Tritium and Iodine sampling media for the plant vent stacks is collected and isotopically analyzed daily for the plant vent stacks.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY TO DECEMBER 1990
Supplemental Information
(continued)

- c. Liquids effluents: Batch releases are isotopically analyzed prior to release. Total release activity is calculated using volume of release. Total tritium activity released is calculated from the highest of a monthly circulating water blowdown composite activity or a sum of the input composite activities.
- d. Analysis results which are less than the lower limit of detection (< LLD) are reported in units of uci/ml unless otherwise noted

5. Batch Releases:

a. Liquid:

- 1. Number of batch releases = 177.
- 2. Total time period for batch releases = 15,325 minutes.
- 3. Maximum time period for a batch release = 192 minutes.
- 4. Average time period for batch release = 86.6 minutes.
- 5. Minimum time period for a batch release = 63 minutes.
- 6. Average stream flow during periods of release of effluent into a flowing stream = 4270 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 = 128.
- 2. Total time period for batch releases = 13,655 minutes.
- 3. Maximum time period for a batch release = 330 minutes.
- 4. Average time period for batch releases = 106.7 minutes.
- 5. Minimum time period for a batch release = 58 minutes.

6. Abnormal releases:

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

U-1 DOCKET NUMBER STN-50-454
 BYRON NUCLEAR POWER STATION
 EFFLUENT A: WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec 1990
 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
A. Fission and Activation Gas Releases									
1. Total Release Activity	ci	2.13E+1	6.98E-1	6.43E+0	2.84E+1	8.15E-2	1.43E-1	5.01E-1	7.26E-1
2. Maximum Release Rate	uCi/sec	2.17E+3	9.71E+2	1.42E+3	2.17E+3	2.05E+0	1.16E+1	8.23E+1	8.23E+1
3. % of 10CFR20 Limits*									
a. Whole Body (500 mrem/year)	%	0.02	0.01	0.01	0.02	0.00	0.00	0.00	0.00
b. Skin (3000 mrem/year)	%	0.02	0.01	0.01	0.02	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	15.07E-4	11.12E-4	19.69E-5	7.16E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0
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.

APPROVED
 APR 20 1991
 B. O. S. F.

U-1 DOCKET NUMBER STN 50-454
BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec 1990
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
C. Particulate (> 8 day half-life) Releases									
1. Gross Activity	Ci	15.80E-5	0.00E+0	0.00E+0	5.80E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0
2. Gross Alpha Activity	Ci	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19
3. % of 10CFR20/10CFR50 Limits**									
D. Tritium Releases									
1. Total Release Activity	Ci	15.06E-2	3.42E-2	3.44E-2	1.19E-1	4.01E-2	3.16E-2	4.39E-2	1.16E-1
2. % of 10CFR20/10CFR50 Limits**									
E. Sum of Iodine, Particulate (> 8 day half-life), and Tritium Releases									
1. Total Activity	Ci	15.11E-2	3.43E-2	3.45E-2	1.20E-1	4.01E-2	3.16E-2	4.39E-2	1.16E-1
2. % of 10CFR20 Limit	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
a. Any Organ (1500 mrem/year)	%	0.05	0.01	0.01	0.07	0.00	0.00	0.00	0.00
3. % of 10CFR50 Limit	%	0.02	0.00	0.01	0.03	0.00	0.00	0.00	0.00
a. Quarterly Any Organ (7.5 mrem)	%								
b. Annual Any Organ (15.0 mrem)	%								

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

APPROVED
APR 28 1990
B.O.S.F.

U-1 LOCKET NUMBER STN-50-454

BYRON NUCLEAR POWER STATION

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JULY-DEC 1990

GASEOUS EFFLUENTS - VENT STACK RELEASES - BATCH MODE

ISOTOPES RELEASED	UNITS	JUL	AUG	SEPT	3RD QUARTER	OCT	NOV	DEC	4th QUARTER
F. Fission and Activation Gas Releases									
Xe-131m	Ci	8.95E-2	<6.78E-12	7.30E-2	1.63E-1	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12
Xe-133m		1.31E-1	<1.93E-12	5.70E-2	1.88E-1	<1.93E-12	<1.93E-12	2.74E-3	2.74E-3
Xe-135m		<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13
Xe-133		2.02E+1	6.82E-1	6.11E+0	2.70E+1	4.36E-2	9.38E-2	3.91E-1	5.28E-1
Xe-135		1.33E-1	<2.19E-13	2.83E-3	1.36E-1	<2.19E-13	2.60E-3	1.26E-3	3.86E-3
Kr-85m		1.15E-1	<9.51E-13	<9.51E-13	1.15E-1	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13
Kr-85		5.22E-1	<3.47E-11	1.79E-1	7.31E-1	<3.47E-11	2.74E-2	9.65E-2	1.24E-1
Kr-87		3.78E-3	<4.20E-13	<4.20E-13	3.78E-3	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13
Kr-88		4.41E-2	<7.74E-13	<7.74E-13	4.41E-2	<7.74E-13	<7.74E-13	8.90E-4	8.90E-4
Ar-41		1.04E-2	1.58E-2	4.25E-3	3.05E-2	3.79E-2	1.90E-2	8.45E-3	6.54E-2
Others (Specify)									

G. Iodine Releases

I-131	Ci	3.96E-4	6.29E-5	1.23E-5	5.51E-4	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19
I-132		<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19
I-133		1.11E-4	4.86E-5	4.64E-6	1.64E-4	<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19
I-134		<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19
I-135		<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18
Others (Specify)									

APPROVED

APR 28 1990

B. O. S. P.

U-1 DOCKET NUMBER STN 50-454

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec 1990
GASEOUS EFFLUENTS - VENT STACK RELEASES - Continuous Mode

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
F. Fission and Activation Gas Releases									
Xe-131m	Ci	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12
Xe-133m		<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12
Xe-135m		<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13
Xe-133		<5.89E-13	<5.89E-13	<5.89E-13	<5.89E-13	<5.89E-13	<5.89E-13	<5.89E-13	<5.89E-13
Xe-135		<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13
Kr-85m		<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13
Kr-85		<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11
Kr-87		<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13
Kr-88		<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13
Ar-41		<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13
Others (Specify)									

G. Iodine Releases

I-131	Ci	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19
I-132		<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19
I-133		<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19
I-134		<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19
I-135		<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18
Others (Specify)									

APPROVED

APR 28 1991
B. O. S. F.

APPROVED

APR 28 1990

B.O.S.F.

U-1 DOCKET NUMBER STN 50-454

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec 1990
GASEOUS EFFLUENTS - VENT STACK RELEASES Batch Mode

BRP 1100-17
Revision 0

ISOTOPES RELEASED	UNITS	JUL	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
H. Particulate (> 8 day half-life) Releases									
* Analysis completed by offsite vendor. Results are not available at this time.									
Mn-54	Ci	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19
Fe-55		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fe-59		<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18
Co-58		5.80E-6	<6.68E-19	<6.68E-19	5.80E-6	<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19
Co-60		<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18
Sr-89		N/A	N/A	N/A	<1.72E-16	N/A	N/A	N/A	*
Sr-90		N/A	N/A	N/A	<3.67E-16	N/A	N/A	N/A	*
Y-88		<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19
Ru-103		<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19
Ag-110m		<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19
Cs-134		<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19
Cs-136		<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19
Cs-137		<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19
Ba/La-140		<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18
Ce-144		<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18
Others (Specify)									
N/A - Analysis not Required									

APPROVED

APR 28 1990

B. O. S. F.

U-1 DOCKET NUMBER STN 50-454

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec 1990
GASEOUS EFFLUENTS - VENT STACK RELEASES - Continuous Mode

BRP 1100-17
Revision 0

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
-------------------	-------	------	-----	------	-------------	-----	-----	-----	-------------

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

*Analysis completed by offsite vendor. Results are not available at this time.

Mn-54	Ci	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19
Fe-55		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fe-59		<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18
Cs-58		<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19	<5.58E-19	<6.68E-19	<6.68E-19
Co-60		<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18
Sr-89		N/A	N/A	N/A	Note 1	N/A	N/A	N/A	*
Sr-90		N/A	N/A	N/A	Note 1	N/A	N/A	N/A	*
Y-88		<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19
Ru-103		<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19
Ag-110m		<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19
Cs-134		<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19
Cs-136		<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19
Cs-137		<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19
Ba/La-140		<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18
Ce-144		<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18

Others (Specify)

Note 1 - Value reported as gaseous Effluents - Vent Stack Releases - Batch Mode.

APPROVED

APR 28 1986

B. O. S. F.

U-1 DOCKET NUMBER STN 50-454

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec 1990
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JUL	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
I. Fission and Activation Products									
1. Total Activity Released	Ci	1.06E-2	6.37E-3	1.11E-1	2.28E-1	3.20E-2	2.32E-2	5.24E-3	6.04E-2
2. Average Concentration Released	uCi/ml	9.64E-9	7.48E-9	1.60E-7	8.60E-8	4.49E-8	2.64E-8	5.81E-9	2.43E-8
3. % of 10CFR50 Limits									
a. Quarterly Whole Body (1.5 mrem)	%	0.29	0.11	0.07	0.47	0.04	0.04	0.01	0.09
b. Quarterly Any Organ (5.0 mrem)	%	0.11	0.05	0.03	0.19	0.08	0.05	0.01	0.14
c. Annual Whole Body (3.0 mrem)	%	0.15	0.06	0.03	0.24	0.02	0.02	0.01	0.05
d. Annual Any Organ (10.0 mrem)	%	0.06	0.02	0.07	0.15	0.04	0.02	0.01	0.07
J. Tritium									
1. Total Activity Released	Ci	5.76E+1	2.61E+1	5.55E+1	1.39E+2	3.24E+1	5.18E+1	4.33E+1	1.28E+2
2. Average Concentration Released	uCi/ml	5.24E-5	3.06E-5	8.00E-5	5.25E-5	4.55E-5	5.89E-5	4.80E-5	5.14E-5
3. % of Limit (3E-3 uCi/ml)	%	1.75	1.02	2.67	5.44	1.52	1.96	1.60	5.08
K. Dissolved Noble Gasses									
1. Total Activity Released	Ci	2.66E-1	1.49E-2	8.00E-2	3.61E-1	9.75E-4	3.25E-3	1.69E-2	2.11E-2
2. Average Concentration Released	uCi/ml	2.42E-7	1.75E-8	1.15E-7	1.36E-7	1.37E-9	3.69E-9	1.87E-8	8.47E-9
3. % of Limit (2E-4 uCi/ml)	%	0.12	0.01	0.06	0.07	0.00	0.00	0.01	0.01
L. Gross Alpha									
1. Total Activity Released	Ci	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14
2. Average Concentration Released	uCi/ml	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
M. Volume of Liquid Waste to Discharge									
	liters	1.97E+6	1.58E+6	1.67E+6	5.20E+6	9.40E+5	1.38E+6	1.12E+6	3.44E+6
N. Volume of Dilution Water									
	liters	1.10E+9	8.52E+8	6.94E+8	2.65E+9	7.12E+8	8.80E+8	9.02E+8	2.49E+9

APPROVED

APR 28 1986

B. O. S. P.

U-1 DOCKET NUMBER STN 50-454

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR JULY-DEC 1990
LIQUID EFFLUENTS BATCH MODE

BRP 1100-T7

Revision 0

ISOTOPES RELEASES		UNITS	JUL	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
0. Liquid Effluents										
H3			5.76E+1	2.61E+1	5.55E+1	1.39E+2	3.24E+1	5.18E+1	4.33E+1	1.28E+2
Sr-89		Ci	N/A	N/A	N/A	<1.8E-9	N/A	N/A	N/A	*
Sr-90			N/A	N/A	N/A	2.60E-3	N/A	N/A	N/A	*
Co-58			1.11E-3	8.22E-4	5.75E-2	5.94E-2	1.42E-2	1.18E-2	2.22E-3	2.82E-2
Co-60			2.97E-3	3.11E-3	1.17E-2	1.78E-2	6.40E-3	5.05E-3	2.00E-3	1.35E-2
Cs-134			2.58E-3	8.53E-4	4.11E-4	3.84E-3	2.90E-4	2.82E-4	5.63E-5	6.28E-4
Cs-136			<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	3.39E-4	3.60E-14	1.54E-6	3.41E-4
Cs-137			1.71E-3	9.01E-4	4.82E-4	3.09E-3	<4.71E-14	3.15E-4	8.15E-5	3.97E-4
I-131			1.13E-3	9.85E-5	1.54E-4	1.38E-3	1.59E-5	<3.82E-14	1.93E-6	1.78E-5
I-133			6.60E-5	<3.64E-14	<3.64E-14	6.60E-5	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14
Ba/La-140			1.24E-5	<3.22E-14	1.15E-5	2.39E-5	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14
Xe-133			2.58E-1	1.49E-2	7.95E-2	3.52E-1	9.75E-4	3.22E-3	1.68E-2	2.10E-2
Xe-135			8.00E-4	1.01E-5	<3.35E-14	8.70E-4	<3.35E-14	3.08E-5	9.05E-6	3.99E-5
Others (Specify)	CR-51		<3.5E-13	<3.06E-13	2.09E-2	2.09E-2	5.25E-3	1.99E-3	1.43E-4	7.38E-3
	MN-54		4.29E-4	4.04E-4	5.10E-3	5.93E-3	1.11E-3	6.10E-4	2.31E-4	1.95E-3
	FE-59		4.64E-6	<6.62E-14	9.00E-3	9.00E-3	1.89E-3	1.12E-3	1.30E-4	3.14E-3
	NB-95		2.49E-4	1.18E-4	2.15E-3	2.52E-3	1.28E-3	7.40E-4	1.36E-4	2.16E-3
	Zr-95		1.90E-4	3.09E-5	1.27E-3	1.49E-3	7.15E-4	4.04E-4	7.30E-6	1.13E-3
	Hf-181		7.45E-6	<3.81E-14	1.98E-1	2.05E-4	2.82E-5	2.22E-5	<3.81E-14	5.04E-5
	Sb-124		<3.51E-14	<3.51E-14	4.15E-5	4.15E-5	9.20E-6	1.28E-5	<3.51E-14	2.20E-5
	Sb-125		3.78E-5	1.15E-5	5.25E-4	5.74E-4	7.60E-5	1.28E-4	2.26E-4	4.30E-4
	Zn-65		<7.55E-14	<7.55E-14	3.68E-4	3.68E-4	1.81E-5	<7.55E-14	<7.55E-14	1.81E-5
	Ba-133		<4.89E-14	<4.89E-14	<4.89E-14	<4.89E-14	<4.89E-14	5.20E-4	<4.89E-14	5.20E-4
	Ru-103		<3.63E-14	<3.63E-14	2.19E-4	2.19E-4	<3.63E-14	<3.63E-14	<3.63E-14	<3.63E-14
	Sn-113		4.60E-6	<1.60E-14	3.54E-4	3.59E-4	1.75E-4	1.13E-4	<1.60E-14	2.88E-4
	Sr-92		3.73E-6	<3.41E-8	<3.41E-8	3.73E-6	<3.41E-8	<3.41E-8	<3.41E-8	<3.41E-8
	Ag-110m		1.27E-5	2.22E-5	<3.73E-14	3.49E-5	1.29E-4	<3.73E-14	<3.73E-14	1.29E-4
	Mo-99		1.62E-5	<4.80E-13	1.10E-5	2.72E-5	<4.80E-13	<4.80E-13	<4.80E-13	<4.80E-13
	Ce-144		2.54E-5	<2.62E-13	8.75E-5	1.13E-4	<2.62E-13	7.10E-5	<2.62E-13	7.10E-5
	Xe-131m		4.63E-3	<1.41E-12	1.91E-4	4.82E-3	<1.41E-12	<1.41E-12	<1.41E-12	<1.41E-12
	Xe-133m		2.23E-3	<2.94E-13	2.74E-4	2.50E-3	<2.94E-13	2.94E-13	1.30E-4	1.30E-4
	Co-57		<3.32E-14	<3.23E-14	1.47E-4	1.47E-4	4.82E-6	6.60E-6	<3.23E-14	1.14E-5
	Tc-99m		<3.15E-14	<3.15E-14	3.32E-6	3.32E-6	<3.15E-14	<3.15E-14	4.18E-6	4.18E-6
	I-134		<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	6.65E-5	<3.77E-14	<3.77E-14	6.65E-5
	CS-		<4.39E-8	<4.39E-8	<4.39E-8	<4.39E-8	<4.39E-8	1.39E-5	<4.39E-8	1.39E-5
	Fe-55		N/A	N/A	N/A	9.99E-2	N/A	N/A	N/A	*

(6566P/0387P)

* Analysis completed by offsite vendor. Results not available at this time.

APPROVED

U-1 DOCKET NUMBER STN 50-454

APR 28 1986

B. O. S. P.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JULY-DEC 1990
LIQUID EFFLUENTS CONTINUOUS MODE

ISOTOPES RELEASES	UNITS	JUL	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
0. Liquid Effluents									
* Analysis completed by offsite vendor. Results are not available at this time.									
Sr-89	Ci	N/A	N/A	N/A	NOTE 2	N/A	N/A	N/A	*
Sr-90		N/A	N/A	N/A	NOTE 2	N/A	N/A	N/A	*
Co-58		<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14
Co-60		<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14
Cs-134		<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14
Cs-136		<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14
Cs-137		<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14
I-131		<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14
I-133		<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14
Ba/La-140		<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14
Xe-133		<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14
Xe-135		<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14
Others (Specify)									
NOTE 2 - Value reported as Liquid Effluents-Batch Mode									

U-2 DOCKET NUMBER STN-50-455

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JULY-DEC 1990
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS JULY AUG SEPT 3rd QUARTER OCT NOV DEC 4th QUARTER											
A. Fission and Activation Gas Releases												
1. Total Release Activity	Ci	9.88E+1	4.65E+1	3.17E+1	1.77E+2	0.00E+0	3.44E-2	2.92E+0	2.92E+0	2.92E+0	2.92E+0	2.96E+0
2. Maximum Release Rate	µCi/sec	2.17E+3	9.71E+2	1.42E+3	2.17E+3	0.00E+0	1.16E+1	8.23E+1	8.23E+1	8.23E+1	8.23E+1	8.23E+1
3. % of 10CFR20 Limits*												
a. Whole Body (500 mrem/year)	%	0.02	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Skin (3000 mrem/year)	%	0.02	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. % of 10CFR50 Limits												
a. Gamma Quarterly (5 mrad)	%	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Beta Quarterly (10 mrad)	%	0.01	0.01	0.00	0.02	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	0.00	0.00	0.00
d. Beta Annual (20 mrad)	%	0.01	0.00	0.00	0.01	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	4.98E-4	7.70E-5	5.01E-4	1.08E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
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.

APPROVED
APP 20 10 1990
B. C. S. F.

U-2 DOCKET NUMBER STN 50-455
 BYRON NUCLEAR POWER STATION
 EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR JULY-DEC 1990
 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
--	-------	------	-----	------	-------------	-----	-----	-----	-------------

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

1. Gross Activity	Ci	1.1E-5	0.00E+0	0.00E+0	1.10E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0
2. Gross Alpha Activity	Ci	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19	<6.16E-19
3. % of 10CFR20/10CFR50 Limits**									

D. Tritium Releases

1. Total Release Activity	Ci	4.70E-2	3.89E-2	4.68E-2	1.33E-1	4.67E-2	7.34E-2	1.44E-1	2.64E-1
2. % of 10CFR20/10CFR50 Limits**									

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

1. Total Activity	Ci	4.75E-2	3.90E-2	4.73E-2	1.34E-1	4.67E-2	7.34E-2	1.44E-1	2.64E-1
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)	%	0.05	0.01	0.06	0.12	0.00	0.00	0.00	0.00
b. Annual Any Organ (15.0 mrem)	%	0.02	0.00	0.03	0.05	0.00	0.00	0.00	0.00

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

APPROVED

APR 28 1991

B. O. S. F.

U-2 DOCKET NUMBER STN 50-455
 BYRON NUCLEAR POWER STATION
 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JULY-DEC 1980
 GASEOUS EFFLUENTS - VENT STACK RELEASES - BATCH MODE

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
-------------------	-------	------	-----	------	-------------	-----	-----	-----	-------------

F. Fission and Activation Gas Releases

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
Xe-131m	Ci	4.40E-2	<6.78E-12	7.30E-2	5.13E-1	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12
Xe-133m		8.48E-1	3.98E-1	1.36E-1	1.38E+0	<1.93E-12	<1.93E-12	2.74E-3	2.74E-3
Xe-135m		<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13
Xe-133		9.60E+1	4.56E+1	3.12E+1	1.73E+2	<5.89E-13	6.95E-3	2.76E+0	2.77E+0
Xe-135		7.76E-1	4.80E-1	6.30E-2	1.32E+0	<2.19E-13	1.53E-5	5.31E-2	5.31E-2
Kr-85m		1.52E-1	1.48E-2	<9.51E-12	1.67E-1	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13
Kr-85		5.52E-1	<3.47E-11	1.79E-1	7.31E-1	<3.47E-11	2.74E-2	9.65E-2	1.24E-1
Kr-87		5.13E-3	<4.20E-13	<4.20E-13	5.13E-3	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13
Kr-88		5.85E-2	2.24E-2	<7.74E-13	8.09E-2	<7.74E-13	<7.74E-13	8.90E-4	8.90E-4
Ar-41		9.75E-3	1.42E-2	<1.74E-13	2.40E-2	<1.74E-13	<1.74E-13	7.80E-3	7.80E-3
Others (Specify)									

G. Iodine Releases

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
I-131	Ci	4.01E-4	5.26E-5	<9.30E-19	4.54E-4	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19
I-132		<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19
I-133		9.65E-5	<8.92E-19	<8.92E-19	9.65E-5	<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19
I-134		<6.93E-19	2.44E-5	<6.93E-19	2.44E-5	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19
I-135		<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18
Others (Specify)									

APPROVED

APR 28 1980

B. O. S. P.

U-2 DOCKET NUMBER STN 50-455

BYRON NUCLEAR POWER STATION

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JULY-DEC 1990

GASEOUS EFFLUENTS - VENT STACK RELEASES Continuous Mode

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
-------------------	-------	------	-----	------	-------------	-----	-----	-----	-------------

F. Fission and Activation Gas Releases

Xe-131m	Ci	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12	<6.78E-12
Xe-133m		<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12	<1.93E-12
Xe-135m		<1.7E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13	<1.78E-13
Xe-133		<5.89E-13	<5.89E-13	1.09E-1	1.09E-1	<5.89E-13	<5.89E-13	<5.89E-13	<5.89E-13
Xe-135		<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13	<2.19E-13
Kr-85m		<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13	<9.51E-13
Kr-85		<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11	<3.47E-11
Kr-87		<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13	<4.20E-13
Kr-88		<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13	<7.74E-13
Ar-41		<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13	<1.74E-13
Others (Specify)									

G. Iodine Releases

I-131	Ci	<9.30E-19	<9.30E-19	4.84E-4	4.84E-4	<9.30E-19	<9.30E-19	<9.30E-19	<9.30E-19
I-132		<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19	<6.34E-19
I-133		<8.92E-19	<8.92E-19	1.68E-5	1.68E-5	<8.92E-19	<8.92E-19	<8.92E-19	<8.92E-19
I-134		<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19	<6.93E-19
I-135		<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18	<2.75E-18
Others (Specify)									

APPROVED

APR 28 1990

B. O. S. F.

APPROVED

APR 28 1990

B. O. S. F.

U-2 DOCKET NUMBER STN 50-455

RPP 1190-T7
Revision 0

BYRON NUCLEAR POWER STATION

EF-1

WASTE DISPOSAL SEMIANNUAL REPORT FOR JULY-DEC 1990

GASEOUS EFFLUENTS - VENT STACK RELEASES - BATCH MODE

ISOTOPES RELEASED | UNITS | JULY | AUG | SEPT | 3rd QUARTER | OCT | NOV | DEC | 4th QUARTER

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

* Analysis completed by offsite vendor. Results are not available at this time.

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
Mn-54	Ci	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19
Fe-55		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fe-59		<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18
Co-58		7.5E-5	<6.68E-19	<6.68E-19	1.10E-5	<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19
Co-60		<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18
Sr-89		N/A	N/A	N/A	<1.14E-16	N/A	N/A	N/A	*
Sr-90		N/A	N/A	N/A	1.2E-17	N/A	N/A	N/A	*
Y-88		<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19
Ru-103		<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19
Ag-110m		<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19
Cs-134		<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19
Cs-136		<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19
Cs-137		<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19
Ba/La-140		<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18
Ce-144		<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18
Others (Specify)									

N/A - Analysis not required.

APPROVED

APR 29 1990

B. O. S. F.

BRP 1100-T7

Revision 0

U-2 DOCKET NUMBER STN 50-455

BYRON NUCLEAR POWER STATION

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT FOR JULY-DEC 1990

GASEOUS EFFLUENTS - VENT STACK RELEASES CONTINUOUS MODE

ISOTOPES RELEASED	UNITS	JULY	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
-------------------	-------	------	-----	------	-------------	-----	-----	-----	-------------

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

* Analysis completed by offsite vendor. Results are not available at this time.

Mn-54	ci	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19	<7.11E-19
Fe-55		N/A	N/A	N/A	N/A		N/A	N/A	N/A
Fe-59		<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18	<1.23E-18
Co-58		<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19	<6.68E-19
Co-60		<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18	<1.08E-18
Sr-89		N/A	N/A	N/A	NOTE 1	N/A	N/A	N/A	*
Sr-90		N/A	N/A	N/A	NOTE 1	N/A	N/A	N/A	*
Y-88		<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19	<4.19E-19
Ru-103		<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19	<4.85E-19
Ag-110m		<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19	<4.99E-19
Cs-134		<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19	<7.13E-19
Cs-136		<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19	<6.69E-19
Cs-137		<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19	<8.87E-19
Ba/La-140		<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18	<2.16E-18
Ce-144		<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18	<4.47E-18
Others (Specify)									

Note 1 - Value reported as Gaseous Effluents - Vent Stack Releases Batch Mode.

U-2 DOCKET NUMBER STN 50-45E

APPROVED

APR 28 1986

B. O. S. F.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec. 1990
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JUL	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
I. Fission and Activation Products									
1. Total Activity Released	Ci	1.06E-2	6.37E-3	1.11E-1	2.28E-1	3.20E-2	2.32E-2	5.24E-3	6.04E-2
2. Average Concentration Released	uCi/ml	9.64E-9	7.48E-9	1.60E-7	8.60E-8	4.49E-8	2.64E-8	5.81E-9	2.43E-8
3. % of 10CFR50 Limits									
a. Quarterly Whole Body (1.5 mrem)	%	0.29	0.11	0.07	0.47	0.04	0.04	0.01	0.09
b. Quarterly Any Organ (5.0 mrem)	%	0.11	0.05	0.15	0.31	0.08	0.05	0.01	0.14
c. Annual Whole Body (3.0 mrem)	%	0.15	0.06	0.03	0.24	0.02	0.02	0.01	0.05
d. Annual Any Organ (10.0 mrem)	%	0.06	0.02	0.07	0.15	0.04	0.02	0.01	0.07
J. Tritium									
1. Total Activity Released	Ci	5.76E+1	2.61E+1	5.55E+1	1.39E+2	3.24E+1	5.18E+1	4.33E+1	1.28E+2
2. Average Concentration Released	uCi/ml	5.24E-5	3.06E-5	8.00E-5	5.25E-5	4.55E-5	5.89E-5	4.80E-5	5.14E-5
3. % of Limit (3E-3 uCi/ml)	%	1.75	1.02	2.67	5.44	1.52	1.96	1.60	5.08
K. Dissolved Noble Gases									
1. Total Activity Released	Ci	2.66E-1	1.49E-2	8.00E-2	3.61E-1	9.75E-4	3.25E-3	1.69E-2	2.11E-2
2. Average Concentration Released	uCi/ml	2.42E-7	1.75E-8	1.15E-7	1.36E-7	1.37E-9	3.69E-9	1.87E-8	8.47E-9
3. % of Limit (2E-4 uCi/ml)	%	0.12	0.01	0.06	0.07	0.00	0.00	0.01	0.01
L. Gross Alpha									
1. Total Activity Released	Ci	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14	<4.91E-14
2. Average Concentration Released	uCi/ml	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
M. Volume of Liquid Waste to Discharge									
	liters	1.97E+6	1.58E+6	1.67E+6	5.20E+6	9.40E+5	1.38E+6	1.12E+6	3.44E+6
N. Volume of Dilution Water									
	liters	1.10E+9	8.52E+8	6.94E+8	2.65E+9	7.12E+8	8.80E+8	9.02E+8	2.49E+9

APPROVED

APR 28 1980

B. O. S. P.

U-2 DOCKET NUMBER STN 50-455

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec. 1990
LIQUID EFFLUENTS-Batch Mode

BRP 1100-17

Revision 0

ISOTOPE RELEASES	UNITS	JUL	AUG	SEPT	3RD QUARTER	OCT	NOV	DEC	4th QUARTER
0. Liquid Effluents		5.76E+1	2.61E+1	5.55E+1	1.39E+2	3.24E+1	5.18E+1	4.33E+1	1.28E+2
Sr-89	Ci	N/A	N/A	N/A	<1.8E-9	N/A	N/A	N/A	*
Sr-90		N/A	N/A	N/A	2.60E-3	N/A	N/A	N/A	*
Co-58		1.11E-3	8.22E-4	5.75E-2	5.94E-2	1.42E-2	1.18E-2	2.22E-3	2.82E-2
Co-60		2.97E-3	3.11E-3	1.17E-2	1.78E-2	6.40E-3	5.05E-3	2.00E-3	1.35E-2
Cs-134		2.58E-3	8.53E-4	4.11E-4	3.84E-3	2.90E-4	2.82E-4	5.63E-5	6.28E-4
Cs-136		<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	3.39E-4	<3.60E-14	1.54E-6	3.14E-4
Cs-137		1.71E-3	9.01E-4	4.82E-4	3.09E-3	<4.71E-14	3.15E-4	8.15E-5	3.97E-4
I-131		1.13E-3	9.85E-5	1.54E-4	1.38E-3	1.59E-5	<3.82E-14	1.93E-6	1.78E-5
I-133		6.60E-5	<3.64E-14	<3.64E-14	6.60E-5	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14
Ba/La-140		1.24E-5	<3.22E-14	1.15E-5	2.39E-5	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14
Xe-133		2.58E-1	1.49E-2	7.95E-2	3.52E-1	<8.95E-14	<8.95E-14	1.68E-2	2.10E-2
Xe-135		8.60E-4	1.01E-5	<3.35E-14	8.70E-4	<3.35E-14	<3.35E-14	9.05E-6	3.99E-5
Others (Specify)	CR-51	<3.06E-13	<3.06E-13	2.09E-2	2.09E-2	5.25E-3	1.99E-3	1.43E-4	7.38E-3
	MN-54	4.29E-4	4.04E-4	5.10E-3	5.93E-3	1.11E-3	6.10E-4	2.31E-4	1.95E-3
	Fe-59	4.64E-6	<6.62E-14	9.00E-3	9.00E-3	1.89E-3	1.12E-3	1.30E-4	3.14E-3
	NB-95	2.49E-4	1.18E-4	2.15E-3	2.52E-3	1.28E-3	7.40E-4	1.36E-4	2.16E-3
	ZR-95	1.90E-4	3.09E-5	1.27E-3	1.49E-3	7.15E-4	4.04E-4	7.30E-6	1.13E-3
	HF-181	7.45E-6	<3.81E-14	1.98E-4	2.05E-4	2.82E-5	2.22E-5	<3.81E-14	5.04E-5
	SB-124	<3.51E-14	<3.51E-14	4.15E-5	4.15E-5	9.20E-6	1.28E-5	<3.51E-14	2.20E-5
	SB-125	3.78E-5	1.16E-5	5.25E-4	5.74E-4	7.60E-5	1.28E-4	2.26E-4	4.30E-4
	ZN-65	<7.55E-14	<7.55E-14	3.68E-4	3.68E-4	1.81E-5	<7.55E-14	<7.55E-14	1.81E-5
	BA-133	<4.89E-14	<4.89E-14	<4.89E-14	<4.89E-14	<4.89E-14	5.20E-4	<4.89E-14	5.20E-4
	RU-103	<3.63E-14	<3.63E-14	2.19E-4	2.19E-4	<3.63E-14	<3.63E-14	<3.63E-14	<3.63E-14
	SN-113	4.60E-6	<1.60E-14	3.54E-4	3.59E-4	1.75E-4	1.13E-4	<1.60E-14	2.88E-4
	Sr-92	3.73E-6	<3.41E-8	<3.41E-8	3.73E-6	<3.41E-8	<3.41E-8	<3.41E-8	<3.41E-8
	Ag-110m	3.27E-5	2.22E-5	<3.73E-14	3.49E-5	1.29E-4	<1.29E-14	<3.73E-14	3.29E-4
	MO-99	3.62E-5	<4.80E-13	1.10E-5	2.72E-5	<4.80E-13	<4.80E-13	<4.80E-13	<4.80E-13
	Ce-144	2.54E-5	<2.62E-13	8.75E-5	1.13E-4	<2.62E-13	7.10E-5	<2.62E-13	7.10E-5
	Xe-131m	4.63E-3	<1.41E-12	3.91E-4	4.82E-3	<1.41E-12	<1.41E-12	<1.41E-12	<1.41E-12
	Xe-133m	2.23E-3	<2.94E-13	2.74E-4	2.50E-3	<2.94E-13	<2.94E-13	1.30E-4	1.30E-4
	CO-57	<3.23E-14	<3.23E-14	1.47E-4	1.47E-4	4.82E-6	6.60E-6	<3.23E-14	1.14E-5
	Tc-99m	<3.15E-14	<3.15E-14	3.32E-6	3.32E-6	<3.15E-14	<3.15E-14	4.18E-6	4.18E-6
	I-134	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	6.65E-5	<3.77E-14	<3.77E-14	6.65E-5
(6566P/0387P)	Cs-138	<4.39E-8	<4.39E-8	<4.39E-8	<4.39E-8	<4.39E-8	1.39E-5	<4.39E-8	3.39E-5
	Fe-55	N/A	N/A	N/A	9.99E-2	N/A	N/A	N/A	*

* Analysis completed by offsite vendor. Results not available at this time.

APPROVED

APR 28 1986

B. O. S. F.

U-2 DOCKET NUMBER STN-50-455

BYRON NUCLEAR POWER STATION

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR July-Dec. 1990

LIQUID EFFLUENTS - Continuous Mode

ISOTOPE RELEASES	UNITS	JUL	AUG	SEPT	3rd QUARTER	OCT	NOV	DEC	4th QUARTER
------------------	-------	-----	-----	------	-------------	-----	-----	-----	-------------

0. Liquid Effluents

* Analysis completed by offsite vendor. Results are not available at this time.

	Ci	N/A	N/A	N/A	Note 2	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	Note 2	N/A	N/A	N/A	N/A
Sr-89		<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14	<3.57E-14
Sr-90		<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14	<5.95E-14
Co-58		<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14	<3.77E-14
Co-60		<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14	<3.60E-14
Cs-134		<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14	<4.71E-14
Cs-136		<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14	<3.82E-14
Cs-137		<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14	<3.64E-14
I-131		<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14	<3.22E-14
I-132		<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14	<8.95E-14
Ba/La-140		<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14	<3.35E-14
Xe-133									
Xe-135									
Others (Specify)									

Note 2 - Value reported as Liquid Effluents - Batch Mode.

APPROVED

APR 28 1980

B. O. S. F.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH JULY YEAR 1990

DATE	Disposition of Material			Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
	(Description, Class	Type	Solidifying Agent				
7-2	Dewatered Resin, Class A, Cask	- LSA, None		Exclusive Use	Richland W	199.4	2.43
7-12	DAW, Class A, Drums	- LSA, None		Exclusive Use	Barnwell, SC	282	1.41
7-26	Dewatered Resin, Class A, Cask	- LSA, None		Exclusive Use	Richland, W	199.4	.79
MONTHLY TOTALS:					3	681	4.63

APPROVED

U-1 & U-2 DOCKET NUMBERS STN 50-454 & 50-455

APR 28 1990

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH AUG YEAR 1990

B. O. S. F.

DATE	Disposition of Material			Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
	Description, Class	Type	Solidifying Agent				
8-16	Dewatered Resin, Class A, Cask - LSA,		None	Exclusive Use	Richland, W	199.4	1.67
8-31	Dewatered Resin, Class A, Cask - LSA,		None	Exclusive Use	Richland, W	199.4	1.44
MONTHLY TOTALS:					2	399	3.11

U-1 & U-2 DOCKET NUMBERS STN 50-454 & 50-455

APPROVED

APR 29 1980

B. O. S. F.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH SEPT YEAR 1990

DATE	Disposition of Material (Description, Class, Type, Solidifying Agent)				Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment	
9-5	DAW,	Class A,	Drums - LSA,	None	Exclusive Use	Barnwell, SC	*763.2	7.03E-4	
9-14	Dewatered Resin,	Class A,	Cask - LSA,	None	Exclusive Use	Richland, W	199.4	2.7	
MONTHLY TOTALS:							2	963	2.70

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

APPROVED

U-1 & U-2 DOCKET NUMBERS STN 50-454 & 50-455

APR 28 1990

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
SOLID RADIOACTIVE WASTE

B. O. S. P.

MONTH OCT YEAR 1990

DATE	Disposition of Material			Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
	Description, Class	Type	Solidifying Agent				
10-1	Dewatered Resin, Class A,	Cask - LSA,	None	Exclusive Use	Richland, W	199.4	2.62
10-9	DAW, Class A,	Drums - LSA,	None	Exclusive Use	Barnwell, SC	355.7	6.57
10-18	Dewatered Resin, Class B,	Cask - LSA,	None	Exclusive Use	Barnwell, SC	132.4	30.5
MONTHLY TOTALS:					3	688	39.69

24

APPROVED
APR 28 1986
B. O. S. F.

U-1 & U-2 DOCKET NUMBERS STN 50-454 & 50-455
BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH NOV YEAR 1990

DATE	Disposition of Material			Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
	(Description, Class	Type	Solidifying Agent				
11-1	Dewatered Resin, Class A, Cask - LSA,		None	Exclusive Use	Richland, W	199.4	2.6
11-9	DAW, Class A, Drums - LSA,		None	Exclusive Use	Barnwell, SC	*600	6.536
11-27	Dewatered Resin, Class A, Cask - LSA,		None	Exclusive Use	Richland, W	199.4	3.79
MONTHLY TOTALS:					3	998.8	12.93

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

APPROVED

U-1 & U-2 DOCKET NUMBERS STN 50-454 & 50-455

APR 28 1986

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

B. O. S. P.

MONTH DEC YEAR 1990

DATE	Disposition of Material			Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment
	Description, Class	Type	Solidifying Agent				
12-7	Dewatered Resin, Class A, Cask - LSA,		None	Exclusive Use	Richland, W	199.4	1.39
12-12	DAW, Class A, Drums - LSA,		None	Exclusive Use	Barnwell, SC	237.6	4.1
12-17	Dewatered Resin, Class A, Cask - LSA,		None	Exclusive Use	Richland, W	199.4	1.99
MONTHLY TOTALS:					3	636.4	7.48

26

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT
JULY TO DECEMBER 1990

ADDENDUM

A. 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 1.44%	Mn-54 19.26%	Mn-54 1.72%
Mn-54 0.3%	Co-58 4.25%	Co-58 4.2%
Fe-55 70.6%	Co-60 14.06%	Co-60 19.4%
Co-58 1.10%	Cs-134 3.12%	Cs-134 7.4%
Co-60 3.10%	Cs-137 5.04%	Cs-137 17.2%
Cs-134 0.20%	H-3 0.40%	H-3 0.01%
Cs-137 0.80%	C-14 3.83%	C-14 10.56%
Ni-63 22.40%	Fe-55 47.00%	Fe-55 12.5%
Tc-99 .023%	Ni-63 3.03%	Tc-99 .005%
I-129 .023%	Sr-90 0.0016%	I-129 .024%
	Tc-99 0.0026%	Ni-63 27.0%
	I-129 0.0004%	
	Pu-239 0.0001%	
	Pu-238 0.0001%	
	Am-241 0.0001%	
	Cm-244 0.0001%	
	Pu-241 0.0%	

B. There were no major changes or modifications to the PCP or to any liquid, gaseous or solid radwaste treatment systems for this period. Byron Station continues to utilize the services of Nu Pac for dewatering and solidification services.

C. Per Technical Specification (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 Technical Specifications:

1. ORE-PRO41-Condensate polisher sump discharge was inoperable for greater than 30 days. The extended period of inoperability was due to noise spikes.

D. 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%
<u>Total error</u>	=	<u>11 - 12%</u>

2. Liquid Effluents

Sampling error	=	1%
Calibration error	=	10%
Sample volume error	=	1%
Discharged volume error	=	2%
<u>Total error</u>	=	10%

3. Waste Resin

Sampling error	=	5%
Counting Statistics error	=	7%
Weight error	=	1%
Volume error	=	5%
<u>Total error</u>	=	10%

4. DAW

Counting Statistics error	=	7%
Calibration error	=	10%
Weight error	=	2%
<u>Total error</u>	=	12.4%

- E. Meteorological and environmental impact information is reported in the Station Annual Radiological Environmental Operating Report as required by Technical Specification 6.9.1.6.
- F. No limits were exceeded in liquid hold up tanks as stated in Technical Specifications 3.11.1.4 or in waste gas decay tanks as stated in Technical Specifications 3.11.2.6.
- G. There were no irradiated fuel shipments during this period.
- H. There are no elevated releases. All releases are considered ground level releases.

BYRON UNIT ONE

1990 ANNUAL REPORT
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
 PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 01/16/91
 INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.25E-03 (SE)	2.08E-04 (SE)	9.35E-05 (SE)	5.79E-06 (SE)	1.56E-03 (SE)
BETA AIR (MRAD)	4.71E-03 (SE)	8.58E-04 (SE)	3.73E-04 (SE)	1.23E-05 (SE)	5.96E-03 (SE)
TOT. BODY (MREM)	3.47E-04 (SE)	5.31E-05 (SE)	2.54E-05 (SE)	2.67E-06 (SE)	4.28E-04 (SE)
SKIN: (MREM)	2.62E-03 (SE)	4.39E-04 (SE)	1.94E-04 (SE)	1.07E-05 (SE)	3.26E-03 (SE)
ORGAN (MREM)	1.86E-04 (SE)	6.34E-05 (NE)	4.79E-03 (NE)	3.70E-05 (NE)	4.98E-03 (NE)
	THYROID	LIVER	THYROID	LIVER THYROID KIDNEY LUNG GI-LLI	THYROID

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 10 CFR 50 APP. I
 INFANT RECEPTOR

	QTRLY OBJ	% OF APP I.				YRLY OBJ	% OF APP.
		1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV		
GAMMA AIR (MRAD)	5.0	0.02	0.00	0.00	0.00	10.0	0.02
BETA AIR (MRAD)	10.0	0.05	0.01	0.00	0.00	20.0	0.03
TOT. BODY (MREM)	2.5	0.01	0.00	0.00	0.00	5.0	0.01
SKIN (MREM)	7.5	0.03	0.01	0.00	0.00	15.0	0.02
ORGAN (MREM)	7.5	0.00	0.00	0.06	0.00	15.0	0.03
		THYROID	LIVER	THYROID	LIVER THYROID KIDNEY LUNG GI-LLI		THYROID

RESULTS BASED UP
 ODCM ANNEX
 REVISION 0.B
 AUGUST 1990

BYRON UNIT TWO

1990 ANNUAL REPORT
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES
 PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 01/16/91
 INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.28E-03 (SE)	8.25E-04 (SE)	5.68E-04 (SE)	9.93E-06 (SE)	2.68E-03 (SE)
BETA AIR (MRAD)	4.82E-03 (SE)	3.31E-03 (SE)	2.28E-03 (SE)	3.98E-05 (SE)	1.4E-02 (SE)
TOT. BODY (MREM)	3.57E-04 (SE)	2.11E-04 (SE)	1.45E-04 (SE)	2.73E-06 (SE)	7.15E-04 (SE)
SKIN (MREM)	2.68E-03 (SE)	1.67E-03 (SE)	1.14E-03 (SE)	2.14E-05 (SE)	5.52E-03 (SE)
ORGAN (MREM)	3.06E-04 (SE)	4.81E-05 (NE)	8.11E-03 (NE)	8.44E-05 (NE)	8.41E-03 (NE)
	THYROID	THYROID	THYROID	LIVER THYROID KIDNEY LUNG GI-LLI	THYROID

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 10 CFR 50 APP. I
 INFANT RECEPTOR

	QTRLY OBJ	% OF APP I.				YRLY OBJ	% OF APP.
		1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV		
GAMMA AIR (MRAD)	5.0	0.03	0.02	0.01	0.00	10.0	0.03
BETA AIR (MRAD)	10.0	0.05	0.03	0.02	0.00	20.0	0.05
TOT. BODY (MREM)	2.5	0.01	0.01	0.01	0.00	5.0	0.01
SKIN (MREM)	7.5	0.04	0.02	0.02	0.00	15.0	0.04
ORGAN (MREM)	7.5	0.00	0.00	0.11	0.00	15.0	0.06
		THYROID	THYROID	THYROID	LIVER THYROID KIDNEY LUNG GI-LLI		THYROID

RESULTS BASED UP
 ODCM ANNEX
 REVISION 0.8
 AUGUST 1990

BYRON UNIT ONE
ADULT RECEPTOR

1990 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 01/16/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY INTERNAL ORGAN	2.23E-03	7.20E-04	7.03E-03	1.47E-03	1.15E-02
	1.31E-02	1.16E-02	9.27E-03	7.11E-03	4.06E-02
	GI-LLI	GI-LLI	LIVER	GI-LLI	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 10 CFR 50 APP. I

	QTRLY OBJ	----- % OF APP I. -----				YRLY OBJ	% OF APP.
		1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV		
TOTAL BODY (MREM)	1.5	0.15	0.05	0.47	0.10	3.0	0.38
CRIT. ORGAN(MREM)	5.0	0.26	0.23	0.19	0.14	10.0	0.41
		GI-LLI	GI-LLI	LIVER	GI-LLI		GI-LLI

RESULTS BASED UP
ODCM ANNEX
REVISION 0
MARCH 1989

BYRON UNIT TWO
ADULT RECEPTOR

1990 ANNUAL REPORT
MAXIMUM DOSES (MREM) RESULTING FROM LIQUID EFFLUENTS
PERIOD OF RELEASE - 01/01/90 TO 12/31/90 CALCULATED 01/16/91

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	2.23E-03	7.20E-04	7.03E-03	1.47E-03	1.15E-02
INTERNAL ORGAN	1.31E-02	1.16E-02	9.27E-03	7.11E-03	4.06E-02
	GI-LLI	GI-LLI	LIVER	GI-LLI	GI-LLI

THIS IS A REPORT FOR THE CALENDAR YEAR 1990

COMPLIANCE STATUS - 10 CFR 50 APP. I

	QTRLY OBJ	----- % OF APP I. -----				YRLY OBJ	% OF APP.
		1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-NOV		
TOTAL BODY (MREM)	1.5	0.15	0.05	0.47	0.10	3.0	0.38
CRIT. ORGAN(MREM)	5.0	0.26	0.23	0.19	0.14	10.0	0.41
		GI-LLI	GI-LLI	LIVER	GI-LLI		GI-LLI

RESULTS BASED UP
ODCM ANNEX
REVISION 0
MARCH 1989