

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JANUARY TO JUNE, 1985
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
A. Fission and Activation Gas Releases									
1. Total Release Activity	Ci	<LLD	<LLD	1.22E-2	1.22E-2	3.22E-1	3.58E1	1.31E2	1.67E2
2. Maximum Release Rate	uCi/sec	0	0	1.78E3	1.78E3	1.98E2	1.85E2	7.83E2	7.83E2
3. % of 10CFR20 Limits *									
a. Whole Body (500 mrem/year)	%	0	0	.01	.01	.10	0	.05	.10
b. Skin (3000 mrem/year)	%	0	0	.01	.01	.03	0	.03	.03
4. % of 10CFR50 Limits									
a. Gamma Quarterly (5 mrad)	%	0	0	0	0	0	.01	.03	.04
b. Beta Quarterly (10 mrad)	%	0	0	0	0	0	.02	.03	.05
c. Gamma Annual (10 mrad)	%	0	0	0	0	0	.006	.015	.021
d. Beta Annual (20 mrad)	%	0	0	0	0	0	.008	.016	.024
B. Iodine Releases									
1. Total I-131 and I-133 Activity	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.23E-5	2.23E-5
2. % of 10CFR20/10CFR50 Limits **									

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

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

<LLD = No detectable activity above background.

0751M)

8509060393 850630
PDR ADOCK 05000454
R PDR

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	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
C. Particulate (> 8 day half-life) Releases									
1. Gross Activity	Ci	<LLD	<LLD	<LLD	<LLD	2.1E-5	3.31E-6	5.21E-6	2.95E-5
2. Gross Alpha Activity	Ci	1.3E-5	1.66E-5	2.57E-5	5.53E-5	5.6E-5	5.07E-5	4.25E-5	1.49E-4
3. % of 10CFR20/10CFR50 Limits **									
D. Tritium Releases									
1. Total Release Activity	Ci	<LLD	1.01E-1	3.98E-3	1.05E-1	2.46E-1	4.31E-2	7.11E-2	3.60E-1
2. % of 10CFR20/10CFR50 Limits **									
E. Sum of Iodine, Particulate (> 8 day half-life), and Tritium Releases									
1. Total Activity	Ci	<LLD	1.01E-1	3.98E-3	1.05E-1	2.46E-1	4.31E-1	7.11E-2	3.60E-1
2. % of 10CFR20 Limit									
a. Any Organ (1500 mrem/year)	%	0	0	0	0	0	0	0	0
3. % of 10CFR50 Limits									
a. Quarterly Any Organ (7.5 mrem)	%	0	0	0	0	0	0	.004	.004
b. Annual Any Organ (15.0 mrem)	%	0	0	0	0	0	0	.002	.002

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

<LLD = No detectable activity above background.

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JANUARY TO JUNE, 1985
GASEOUS EFFLUENTS - VENT STACK RELEASES

Isotopes Released	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
F. Fission and Activation Gas Releases									
Xe-131m	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	1.51E1	1.51E1
Xe-133m		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Xe-135m		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	3.63E-2	3.63E-2
Xe-133		<LLD	<LLD	1.22E-2	1.22E-2	7.64E-2	2.38E1	3.00E1	5.39E1
Xe-135		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	8.42E1	8.42E1
Kr-85m		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	9.50E-1	9.50E-1
Kr-85		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Kr-87		<LLD	<LLD	<LLD	<LLD	<LLD	9.7E0	4.18E-2	9.74E0
Kr-88		<LLD	<LLD	<LLD	<LLD	2.32E-1	4.42E-1	1.03E-1	7.77E-1
Ar-41		<LLD	<LLD	<LLD	<LLD	<LLD	1.51E0	1.95E-1	1.71E0
Others (specify)									
Xe-138		-	-	-	-	1.32E-2	3.20E-1	-	3.33E-1

G. Iodine Releases

I-131	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	2.23E-5	2.23E-5
I-132		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-133		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-134		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
I-135		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD

<LLD = No detectable activity above background.

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JANUARY TO JUNE, 1985
GASEOUS EFFLUENTS - VENT STACK RELEASES

Isotopes Released	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
G. Iodine Releases (Continued)									
Others (Specify)	CI								
None									

II. 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
Ce 58		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Co 60		<LLD	<LLD	<LLD	<LLD	2.10E-5	<LLD	5.21E-6	2.62E-5
Sr 89		-	-	-	<3.1E-5*	-	-	-	*
Sr 90		-	-	-	<1.3E-4*	-	-	-	*
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

<LLD = No detectable activity above background.

* Analysis performed by offsite vendor; value listed is the LLD for the analysis.

* Waiting for analysis results - data to be presented in an errata to this report at a later date.

(0751M)

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JANUARY TO JUNE, 1985
GASEOUS EFFLUENTS - VENT STACK RELEASES

Isotopes Released	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
H. Particulate (> 8 Day Half-Life) Released (Continued)									
Cs-134	Ci	<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)									
Ce-143		-	-	-	-	-	3.31E-6	-	3.31E-6

<LLD = No detectable activity above background.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JANUARY TO JUNE, 1985
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
I. Fission and Activation Products									
1. Total Activity Released	Ci	<LLD	1.31E-3	1.27E-2	1.40E-2	4.55E-2	1.89E-1	8.89E-1	1.12E0
2. Average Concentration Released	uCi/ml	<LLD	3.57E-10	3.06E-9	1.55E-9	1.27E-8	5.56E-8	2.36E-7	1.05E-7
3. % of 10CFR50 Limits									
a. Quarterly Whole Body (1.5 mrem)	%	0	0	0	0	0	.032	.101	0.133
b. Quarterly Any Organ (5.0 mrem)	%	0	0	0	0	0	.014	.045	0.059
c. Annual Whole Body (3.0 mrem)	%	0	0	0	0	0	.016	.050	0.066
d. Annual Any Organ (10.0 mrem)	%	0	0	0	0	0	.007	.022	0.029
J. Tritium									
1. Total Activity Released	Ci	<LLD	7.22E-2	7.53E-1	8.25E-1	1.12E0	2.00E1	1.29E2	1.50E2
2. Average Concentration Released	uCi/ml	<LLD	1.97E-8	1.81E-7	9.14E-8	3.14E-7	5.88E-6	3.43E-5	1.40E-5
3. % of Limit (3E-3 uCi/ml)	%	0	6.50E-4	6.0E-3	3.05E-3	1.00E-2	1.9E-1	1.14E0	4.68E-1
K. Dissolved Noble Gasses									
1. Total Activity Released	Ci	<LLD	<LLD	1.45E-4	1.45E-4	3.68E-4	6.93E-3	4.3E-1	4.45E-1
2. Average Concentration Released	uCi/ml	<LLD	<LLD	3.49E-11	3.49E-11	1.03E-10	2.04E-9	1.16E-7	4.16E-8
3. % of Limit (2E-4 uCi/ml)	%	0	0	1.7E-5	1.7E-5	5.15E-5	1.02E-3	5.82E-2	2.08E-2
L. Gross Alpha									
1. Total Activity Released	Ci	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
2. Average Concentration Released	uCi/ml	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
M. Volume of Liquid Waste to Discharge									
	liters	4.47E6	5.02E6	2.31E6	1.18E7	1.89E6	2.59E6	8.76E6	1.32E7
N. Volume of Dilution Water									
	liters	1.21E9	3.67E9	4.15E9	9.03E9	3.57E9	3.40E9	3.76E9	1.07E10

<LLD = No detectable activity above background.

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JANUARY TO JUNE, 1985
LIQUID EFFLUENTS

Isotopes Released	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
O. Liquid Effluents									
Sr-89	Ci				*				*
Sr-90									
Co-58		<LLD	<LLD	6.86E-3	6.86E-3	1.76E-2	3.24E-2	1.06E-1	1.56E-1
Co-60		<LLD	<LLD	1.69E-3	1.69E-3	4.52E-3	7.16E-3	1.37E-2	2.54E-2
Cs-134		<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD	<LLD
Cs-136		<LLD	<LLD	<LLD	<LLD	<LLD	1.76E-3	8.76E-3	1.05E-2
Cs-137		<LLD	1.03E-5	8.44E-5	9.47E-5	2.30E-4	5.69E-3	1.72E-2	2.31E-2
I-131		<LLD	<LLD	1.19E-4	1.19E-4	4.06E-4	6.88E-3	5.63E-3	1.29E-2
I-133		<LLD	<LLD	<LLD	<LLD	9.81E-5	9.20E-4	3.46E-3	4.48E-3
Ba/La-140		<LLD	8.54E-6	1.49E-3	1.50E-3	3.97E-3	5.16E-2	8.09E-2	1.36E-1
Xe-133		<LLD	<LLD	1.45E-4	1.45E-4	2.35E-5	6.07E-3	3.78E-1	3.84E-1
Xe-135		<LLD	<LLD	<LLD	<LLD	<LLD	5.50E-4	4.88E-2	4.94E-2
Others (Specify)									
Na-24		-	1.29E-3	1.07E-3	2.36E-3	1.37E-2	5.63E-2	5.39E-1	6.09E-1
Mn-54		-	-	1.31E-3	1.31E-3	4.94E-3	1.99E-2	3.70E-2	6.18E-2
Fe-59		-	-	8.21E-5	8.21E-5	-	1.73E-3	2.91E-3	4.64E-3
Xe-131m		-	-	-	-	3.44E-4	-	2.60E-3	2.94E-3
Be-7		-	-	-	-	-	7.14E-4	-	7.14E-4
Ar-41		-	-	-	-	-	2.88E-4	5.90E-4	8.78E-4
Mn-56		-	-	-	-	-	1.32E-4	-	1.32E-4
Zn-69m		-	-	-	-	-	1.51E-4	4.13E-4	5.64E-4

<LLD = No detectable activity above background.

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BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT FOR JANUARY TO JUNE, 1985
LIQUID EFFLUENTS

Isotopes Released	UNITS	JAN	FEB	MAR	1st Quarter	APRIL	MAY	JUNE	2nd Quarter
O. Liquid Effluents (Continued)									
Others (Specify)	Ci								
Mo-99		-	-	-	-	-	1.84E-3	-	1.84E-3
Tc-99m		-	-	-	-	-	5.42E-5	7.46E-5	1.29E-4
Br-82		-	-	-	-	-	1.07E-4	-	1.07E-4
Kr-85m		-	-	-	-	-	2.29E-5	1.54E-3	1.56E-3
Sr-91		-	-	-	-	-	1.41E-3	3.33E-3	4.74E-3
Y-91m		-	-	-	-	-	-	6.13E-3	6.13E-2
Kr-88		-	-	-	-	-	-	6.37E-3	6.37E-3
I-134		-	-	-	-	-	-	4.80E-4	4.80E-4
Sb-122		-	-	-	-	-	-	9.64E-5	9.64E-5
Sr-92		-	-	-	-	-	-	1.98E-3	1.98E-3
Y-91		-	-	-	-	-	-	1.96E-4	1.96E-4
Rb-88		-	-	-	-	-	-	2.70E-3	2.70E-3
Cs-138		-	-	-	-	-	-	3.38E-4	3.38E-4
Zr-97		-	-	-	-	-	-	3.16E-3	3.16E-3
Kr-87		-	-	-	-	-	-	1.42E-4	1.42E-4
Xe-133m		-	-	-	-	-	-	3.61E-4	3.61E-4

BYRON NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID RADIOACTIVE WASTE
MONTH 1/1 to 6/30 YEAR 1985

Date	Disposition of Material (Description, Class____, Type____)	Mode of Transport	Destination	Volume Per Shipment (ft ³)	Curies Per Shipment (Ci)
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No Radwaste shipments during
first six months of 1985.

Monthly Totals

0 ft³

0 Ci

Per Technical Specification 6.9.1.7, the following is a summary of effluent monitoring instrumentation inoperable for a period of time longer than specified in Technical Specifications 3.3.3.9 and 3.3.3.10, including an explanation why the instrumentation was not repaired in the specified time frame.

1. Essential Service Water/RCFC Outlet Monitors 1RE-PR002 and 1RE-PR003 were inoperable from 0610 on 11-8-84 to 0500 on 7-7-85; greater than the 30 day limitation. Due to piping design problems, these monitors were unable to attain adequate flow to consider them operable. A major engineering design change, including a formal engineering review and modification documentation, was necessary to correct the problem; this process accounted for the time delay in repairing the inoperable monitors. For the duration of the monitors' inoperability, grab samples were obtained and analyzed every 12 hours as required by Technical Specifications.
2. Effluent System Flow Rate Measuring Device LOOP-VA019 was inoperable from 1216 on 11-19-84 to 1619 on 1-19-85; greater than the 30 day limitation. LOOP-VA019 was inoperable for an extended period due to extensive mechanical repairs and subsequent testing needed to correct the damaged flow sensor. For the duration of the sensor's inoperability, vent stack flow rate was determined every 4 hours as required by Technical Specifications.
3. Noble Gas Activity Monitors (Gas Decay Tank Effluent) ORE-PR002A and ORE-PR002B were inoperable from 1845 on 3-30-85 to 2213 on 4-27-85; greater than the 14 day limitation. The extended inoperability was due to electrical noise problems causing spurious alarms on the monitor. Due to the amount of investigation required to determine the source of the electrical noise, the monitor was not repaired within 14 days. No Gas Decay Tank releases were performed during the period of the monitor inoperability.



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

August 22, 1985

LTR: BYRON 85-1182

PRIORITY ROUTING

First	Second
RA	MC
MA	CIC
APP	SGA
DAS	HL
AS	OL
SA	PAO
FILE	

orig+1 ✓

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

SUBJECT: Byron Station Operating Report, NRC Dockets 50-454 and 50-455

Dear Mr. Keppler

Enclosed is the radioactive effluent report for January through June, (1985) for Byron Nuclear Power Station.

One copy of this report is provided for your use and 39 copies are being submitted directly to Mr. D. Eisenhut, Deputy Director of the Office of Nuclear Reactor Regulation.

Sincerely,

for *Querio*
R. E. Querio
Station Superintendent
Byron Nuclear Power Station

REQ/ABS/dja

Enclosure

~~IE24~~
IE25
1/1

AUG 30 1985