

Commonwealth Edison Company
LaSalle Generating Station
2601 North 21st Road
Marseilles, IL 61341-9757
Tel 815-357-6761



August 28, 1998

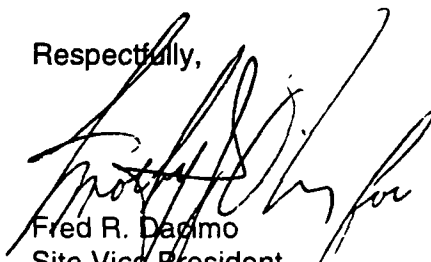
United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Semi-annual Radioactive Effluent Report
LaSalle County Nuclear Power Station, Units 1 and 2
Facility Operating License NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Enclosed is the Semi-annual Radioactive Effluent Report January through June, 1998, for LaSalle County Nuclear Power Station.

If there are any questions or comments concerning this letter, please refer them to Harold D. Pontious, Jr., Regulatory Assurance Manager, (815) 357-6761, extension 2383.

Respectfully,


Fred R. Dacimo
Site Vice President
LaSalle County Station

8-28-98

11)

Enclosure

TH

- cc: J. L. Caldwell, Acting NRC Region III Administrator
M. P. Huber, NRC Senior Resident Inspector - LaSalle
D. M. Skay, Project Manager - NRR - LaSalle
J. Roman, IDNS Inspector - LaSalle
F. Niziolek, Office of Nuclear Facility Safety - IDNS
✓ Document Control Desk - 2 Copies
NRC Region III, Chief Reactor Support Programs Branch
Illinois Department of Nuclear Safety
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CASALLE COUNTY NUCLEAR POWER STATION
 UNITS ONE AND TWO
 DOCKET NUMBERS 50-373 AND 50-374

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

			<u>First Quarter</u>	<u>Second Quarter</u>	<u>Estimated Total Error %</u>
A. Fission and Activation Gases					
1.	Total release	Ci	0.00E+00	0.00E+00	N/A
2.	Average release rate for period	uCi/sec	N/A	N/A	
B. Iodines					
1.	Total iodine-131	Ci	0.00E+00	0.00E+00	N/A
2.	Average release rate for period	uCi/sec	N/A	N/A	
C. Particulates					
1.	Particulates with T1/2 >8 days	Ci	0.00E+00	3.15E-07	33%
2.	Average release rate for period	uCi/sec	0.00E+00	1.62E-05	
3.	Gross alpha radioactivity (estimate)	Ci	<1.00E-11	<1.00E-11	
D. Tritium					
1.	Total release	Ci	0.00E+00	0.00E+00	N/A
2.	Average release rate for period	uCi/sec	N/A	N/A	

"<" indicates activity of sample is less than LLD given in uci/ml

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

GASEOUS EFFLUENTS-ELEVATED RELEASE
Unit 1 and Unit 2 Continuous Mode

Nuclides Released		<u>January</u>	<u>February</u>	<u>March</u>	<u>First Quarter</u>
1. Fission Gases					
Ar-41	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-85	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-85m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-87	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-88	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-131m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-133	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-133m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-135	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-135m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-138	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Total for period	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
2. Iodines					
I-131	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-132	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-133	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-134	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-135	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Total for period	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
3. Particulates					
Cr-51	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Mn-54	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Co-58	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Fe-59	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Co-60	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Zn-65	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Sr-89 (Estimate)	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Sr-90 (Estimate)	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Nb-95	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Mo-99	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Cs-134	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Cs-137	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Ba-140	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
La-140	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Ce-141	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Ce-144	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Total for period	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11

"<" indicates activity of sample is less than LLD given uci/ml

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

GASEOUS EFFLUENTS-ELEVATED RELEASE
Unit 1 and Unit 2 Continuous Mode

Nuclides Released		<u>April</u>	<u>May</u>	<u>June</u>	<u>Second Quarter</u>
1. Fission Gases					
Ar-41	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-85	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-85m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-87	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Kr-88	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-131m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-133	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-133m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-135	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-135m	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Xe-138	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
Total for period	Ci	<1.00E-06	<1.00E-06	<1.00E-06	<1.00E-06
2. Iodines					
I-131	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-132	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-133	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-134	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
I-135	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Total for period	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
3. Particulates					
Cr-51	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Mn-54	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Co-58	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Fe-59	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Co-60	Ci	<1.00E-11	<1.00E-11	3.15E-07	3.15E-07
Zn-65	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Sr-89 (Estimate)	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Sr-90 (Estimate)	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Nb-95	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Mo-99	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Cs-134	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Cs-137	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Ba-140	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
La-140	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Ce-141	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Ce-144	Ci	<1.00E-11	<1.00E-11	<1.00E-11	<1.00E-11
Total for period	Ci	<1.00E-11	<1.00E-11	3.15E-07	3.15E-07

"<" indicates activity of sample is less than LLD given uci/ml

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

UNIT ONE

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

			<u>First Quarter</u>	<u>Second Quarter</u>	<u>ESTIMATED TOTAL ERROR%</u>
A.	Fission and Activation Products				
1.	Total release (not including tritium, gases, alpha)	Ci	0.00E+00	1.72E-03	26%
2.	Average concentration released	uCi/ml	0.00E+00	2.96E-05	
3.	Maximum concentration released	uCi/ml	N/A	3.18E-05	
B.	Tritium				
1.	Total release	Ci	0.00E+00	1.07E-01	12%
2.	Average concentration released	uCi/ml	N/A	1.77E-03	
C.	Dissolved Noble Gases				
1.	Total release	Ci	0.00E+00	0.00E+00	N/A
2.	Average concentration released	uCi/ml	N/A	N/A	
D.	Gross Alpha Radioactivity				
1.	Total release	Ci	0.00E+00	0.00E+00	N/A
2.	Average concentration released	uCi/ml	N/A	N/A	
E.	Volume of Waste Released (prior to dilution)	liters	0.00E+00	6.05E+04	
F.	Volume of Dilution Water	liters	0.00E+00	1.11E+08	

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

UNIT ONE BATCH MODE

LIQUID EFFLUENTS

Nuclides Released		<u>January</u>	<u>February</u>	<u>March</u>	<u>First Quarter</u>
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-55	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mo-99	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tc-99m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ba-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
La-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-141	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

UNIT ONE BATCH MODE

LIQUID EFFLUENTS

Nuclides Released		<u>April</u>	<u>May</u>	<u>June</u>	<u>Second Quarter</u>
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	2.08E-05	0.00E+00	0.00E+00	2.08E-05
Fe-55	Ci	1.38E-03	0.00E+00	0.00E+00	1.38E-03
Fe-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	2.88E-04	0.00E+00	0.00E+00	2.88E-04
Zn-65	Ci	2.80E-05	0.00E+00	0.00E+00	2.80E-05
Sr-89	Ci	1.38E-06	0.00E+00	0.00E+00	1.38E-06
Sr-90	Ci	4.34E-07	0.00E+00	0.00E+00	4.34E-07
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mo-99	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	4.51E-06	0.00E+00	0.00E+00	4.51E-06
Ba-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
La-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-141	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	1.72E-03	0.00E+00	0.00E+00	1.72E-03
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

UNIT TWO

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

			<u>First Quarter</u>	<u>Second Quarter</u>	<u>Estimated Total Error%</u>
A.	Fission and Activation Products				
1.	Total release (not including tritium, gases, alpha)	Ci	0.00E+00	1.72E-03	
2.	Average concentration released	uCi/ml	0.00E+00	2.96E-05	26%
3.	Maximum concentration released	uCi/ml	N/A	3.18E-05	
B.	Tritium				
1.	Total release	Ci	0.00E+00	1.07E-01	
2.	Average concentration released	uCi/ml	N/A	1.77E-03	12%
C.	Dissolved Noble Gases				
1.	Total release	Ci	0.00E+00	0.00E+00	N/A
2.	Average concentration released	uCi/ml	N/A	N/A	
D.	Gross Alpha Radioactivity				
1.	Total release	Ci	0.00E+00	0.00E+00	N/A
2.	Average concentration released	uCi/ml	N/A	N/A	
E.	Volume of Waste Released	liters	0.00E+00	6.05E+04	
F.	Volume of Dilution Water	liters	0.00E+00	1.11E+08	

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

UNIT TWO BATCH MODE

LIQUID EFFLUENTS

Nuclides Released		<u>January</u>	<u>February</u>	<u>March</u>	<u>First Quarter</u>
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-55	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mo-99	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tc-99m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ba-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
La-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-141	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

UNIT TWO BATCH MODE

LIQUID EFFLUENTS

Nuclides Released		<u>April</u>	<u>May</u>	<u>June</u>	<u>Second Quarter</u>
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	2.08E-05	0.00E+00	0.00E+00	2.08E-05
Fe-55	Ci	1.38E-03	0.00E+00	0.00E+00	1.38E-03
Fe-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	2.88E-04	0.00E+00	0.00E+00	2.88E-04
Zn-65	Ci	2.80E-05	0.00E+00	0.00E+00	2.80E-05
Sr-89	Ci	1.38E-06	0.00E+00	0.00E+00	1.38E-06
Sr-90	Ci	4.34E-07	0.00E+00	0.00E+00	4.34E-07
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mo-99	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	4.51E-06	0.00E+00	0.00E+00	4.51E-06
Ba-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
La-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-141	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	1.72E-03	0.00E+00	0.00E+00	1.72E-03
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

MAXIMUM DOSES RESULTING FROM RELEASES

			<u>First Quarter</u>	<u>Second Quarter</u>
A. Gaseous Effluents (Units One and Two)				
1.	Gamma air	mrad	0.00E+00	0.00E+00
2.	Beta air	mrad	0.00E+00	0.00E+00
3.	Total body	mrem	0.00E+00	0.00E+00
4.	Skin	mrem	0.00E+00	0.00E+00
5.	Organ	mrem	0.00E+00	2.62E-07
B. Liquid Effluents (Unit One)				
1.	Total body	mrem	0.00E+00	2.26E-06
4.	Internal organ (Child Bone)	mrem	0.00E+00	4.79E-06
C. Liquid Effluents (Unit Two)				
1.	Total body	mrem	0.00E+00	2.26E-06
4.	Internal organ (Child Bone)	mrem	0.00E+00	4.79E-06

COMPLIANCE STATUS

A. Gaseous Effluents (Units One and Two)				
1.	Gamma air	% of Tech. Spec. Limit	0.00	0.00
2.	Beta air	% of Tech. Spec. Limit	0.00	0.00
3.	Total body	% of Tech. Spec. Limit	0.00	0.00
4.	Skin	% of Tech. Spec. Limit	0.00	0.00
5.	Organ (adult)	% of Tech. Spec. Limit	0.00	0.00
B. Liquid Effluents (Unit One)				
1.	Total body	% of Tech. Spec. Limit	0.00	0.00
2.	Internal organ (Child Bone)	% of Tech. Spec. Limit	0.00	0.00
C. Liquid Effluents (Unit Two)				
1.	Total body	% of Tech. Spec. Limit	0.00	0.00
2.	Internal organ (Child Bone)	% of Tech. Spec. Limit	0.00	0.00

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

		<u>January</u>	<u>February</u>	<u>March</u>	<u>First Quarter</u>
1.	Spent resins, filter sludges, evaporator bottoms, etc.				
a.	Quantity shipped cu.m.	0.00E+00	8.75E+00	1.01E+01	1.89E+01
b.	Total activity Ci	0.00E+00	7.07E+01	5.07E+00	7.58E+01
c.	Major nuclides (estimate %)				
	Mn-54 %	0	6.44	5.99	
	Fe-55 %	0	61.01	29.42	
	Zn-65 %	0	4.90	17.31	
	Co-60 %	0	26.62	44.79	
d.	Container type	N/A	LSA	LSA	
e.	Container volume cu.m.	N/A	4.84E+00	5.83E+00	
f.	Solidification agent	N/A	Cement	Cement	
2.	Dry compressible waste, contaminated equipment, etc.				
a.	Quantity shipped cu.m.	1.45E+02	7.75E+01	4.95E+01	2.72E+02
b.	Total activity Ci	2.50E-02	8.68E-01	7.04E+02	7.05E+02
c.	Major nuclides (estimate %)				
	Cr-51 %	1.08	1.08	1.08	
	Mn-54 %	6.96	6.96	6.96	
	Fe-55 %	79.87	79.87	79.87	
	Co-60 %	10.81	10.81	10.81	
d.	Container type	LSA	LSA	LSA	
e.	Container volume cu.m.	7.64E+00 5.94E+01 3.62E+01 1.38E+02	7.25E+01 3.62E+01	7.92E+00 3.85E+00 3.62E+01	

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SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

		<u>January</u>	<u>February</u>	<u>March</u>	<u>First Quarter</u>
3.	Other				
a.	Quantity shipped cu.m.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
b.	Total activity Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
c.	Major nuclides (estimate %)				
	Cr-51 %	0	0	0	
	Mn-54 %	0	0	0	
	Fe-55 %	0	0	0	
	Co-60 %	0	0	0	
d.	Container type	N/A	N/A	N/A	
e.	Container volume cu.m.	N/A	N/A	N/A	
4.	Irradiated Components				
a.	Quantity shipped cu.m	0.00E+00	1.80E-01	3.48E-01	5.28E-01
b.	Total activity Ci	0.00E+00	1.71E+04	3.36E+04	5.07E+04
c.	Major nuclides (estimate %)				
	Co-60 %	0	51.94	51.66	
	Fe-55 %	0	43.76	44.25	
	Ni-63 %	0	3.49	3.41	
	Mn-54 %	0	0.79	0.90	
d.	Number of shipments	0	1	2	3
e.	Mode of Transportation	N/A	Truck	Truck	
f.	Destination	N/A	Barnwell	Barnwell	
5.	Solid Waste Disposition				
a.	Number of Shipments	5	4	6	15
b.	Mode of Transportation Number	Truck 5	Truck 4	Truck 6	
c.	Destination Number	Barnwell 5	Barnwell 4	Barnwell 6	

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

		<u>April</u>	<u>May</u>	<u>June</u>	<u>Second Quarter</u>
1.	Spent resins, filter sludges, evaporator bottoms, etc.				
a.	Quantity shipped cu.m.	2.24E+01	1.50E+01	0.00E+00	3.74E+01
b.	Total activity Ci	1.05E+02	6.08E+00	0.00E+00	1.11E+02
c.	Major nuclides (estimate %)				
	Mn-54 %	5.99	5.99	0	
	Fe-55 %	29.42	29.42	0	
	Zn-65 %	17.31	17.31	0	
	Co-60 %	44.79	44.79	0	
d.	Container type	LSA	LSA	N/A	
e.	Container volume cu.m.	5.83E+00 4.84E+00	5.83E+00	N/A	
f.	Solidification agent	Cement	Cement	N/A	
2.	Dry compressible waste, contaminated equipment, etc.				
a.	Quantity shipped cu.m.	1.39E+02	3.74E+01	7.11E+01	2.48E+02
b.	Total activity Ci	6.95E-01	8.75E-03	6.52E-02	7.69E-01
c.	Major nuclides (estimate %)				
	Cr-51 %	1.08	1.08	1.08	
	Mn-54 %	6.96	6.96	6.96	
	Fe-55 %	79.87	79.87	79.87	
	Co-60 %	10.81	10.81	10.81	
d.	Container type	LSA	LSA	LSA	
e.	Container volume cu.m.	7.25E+01 3.62E+01	4.01E+01 3.62E+01	5.94E+01 3.62E+01	

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

		<u>April</u>	<u>May</u>	<u>June</u>	<u>Second Quarter</u>
3.	Other				
a.	Quantity shipped cu.m.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
b.	Total activity Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
c.	Major nuclides (estimate %)				
	Cr-51 %	0	0	0	
	Mn-54 %	0	0	0	
	Fe-55 %	0	0	0	
	Co-60 %	0	0	0	
d.	Container type	N/A	N/A	N/A	
e.	Container volume cu.m.	N/A	N/A	N/A	
4.	Irradiated Components				
a.	Quantity shipped cu.m	2.69E-01	0.00E+00	0.00E+00	2.69E-01
b.	Total activity Ci	2.18E+04	0.00E+00	0.00E+00	2.18E+04
c.	Major nuclides (estimate %)				
	Co-60 %	57.52	0	0	
	Fe-55 %	37.14	0	0	
	Ni-63 %	4.90	0	0	
	Mn-54 %	0.45	0	0	
d.	Number of shipments	2	0	0	2
e.	Mode of Transportation	Truck	N/A	N/A	
f.	Destination	Barnwell	N/A	N/A	
5.	Solid Waste Disposition				
a.	Number of Shipments	9	6	2	17
b.	Mode of Transportation	Truck	Truck	Truck	
	Number	9	6	2	
c.	Destination	Barnwell	Barnwell	Barnwell	
	Number	9	6	2	
	Estimated total error % for spent resins, filter sludges, evaporator bottoms, etc. (Jan-June)				12%
	Estimated total error % for dry compressible waste, contaminated equipment, etc. (Jan-June)				15%
	Estimated total error % for irradiated components (Jan-June)				25%

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

Supplemental Information

1. Regulatory Limits

a. Gaseous Effluents

- 1) The air dose due to noble gases released in gaseous effluents, from each reactor unit, from the site shall be limited to the following:
 - a) During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation, and
 - b) During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.
- 2) The dose to an individual from radioiodines and radioactive materials in particulate form, and radionuclides, other than noble gases, with half-lives greater than eight days in gaseous effluents released, from each reactor unit, from the site shall be limited to the following:
 - a) During any calendar quarter: Less than or equal to 7.5 mRems to any organ, and
 - b) During any calendar year: Less than or equal to 15 mRems to any organ.

b. Liquid Effluents

- 1) The dose or dose commitment to an individual from radioactive materials in liquid effluents released, from each reactor unit, from the site shall be limited:
 - a) During any calendar quarter to less than or equal to 1.5 mRem to the total body and to less than or equal to 5 mRem to any organ, and
 - b) During any calendar year to less than or equal to 3 mRem to the total body and to less than or equal to 10 mRem to any organ.

c. Total Dose

- 1) The dose or dose commitment to any member of the public, due to releases or radioactivity and radiation, from uranium fuel cycle sources shall be limited to less than or equal to 25 mRem to the body or any organ (except the thyroid, which shall be limited to less than or equal to 75 mRem) over 12 consecutive months.

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

Supplemental Information (continued)

2. Allowable Concentrations

a. Gaseous Effluents

- 1) The dose rate due to radioactive materials released in gaseous effluents from the site shall be limited to the following:
 - a) For noble gases: Less than or equal to 500 mRem/year to the total body and less than or equal to 3000 mRem/year to the skin, and
 - b) For all radioiodines and for all radioactive materials in particulate form, and radionuclides, other than noble gases, with half-lives greater than eight days: Less than or equal to 1500 mRem/year to any organ via the inhalation pathway.

b. Liquid Effluents

- 1) The concentration of radioactive material released from the site shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to the following:

<u>Nuclide</u>	<u>DWC (µci/ml)</u>
Kr-85m	2.00E-04
Kr-85	5.00E-04
Kr-87	4.00E-05
Kr-88	9.00E-05
Ar-41	7.00E-05
Xe-131m	7.00E-04
Xe-133m	5.00E-04
Xe-133	6.00E-04
Xe-135m	2.00E-04
Xe-135	2.00E-04

3. Average Energy

a. Not Applicable.

4. Measurements and Approximations of Total Radioactivity

a. Gaseous Effluents

- 1) Containment Vent and Purge System is sampled by grab sample which is analyzed for principal gamma emitters and H-3.
- 2) Main Vent Stack is sampled by grab sample which is analyzed for principal gamma emitters and H-3.
- 3) Standby Gas Treatment System is sampled by grab sample which is analyzed for principal gamma emitters.

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

Supplemental Information (continued)

4) All release types as listed in 1 and 2 above, at the vent stack and as listed in 3 above, at the Standby Gas Treatment System whenever there is a flow, are continuously sampled by charcoal, particulate and composite samples which are analyzed for iodines, principal gamma emitters, gross alpha, Sr-89 and Sr-90. Noble gases, gross beta and gamma are continuously monitored by noble gas monitors for the vent stack and the standby gas treatment system.

b. Liquid Effluents

1) Batch waste release tanks are sampled each batch for principal gamma emitters, I-131, dissolved and entrained noble gases, H-3, gross alpha, Sr-89, Sr-90 and Fe-55.

2) Continuous releases are sampled continuously in proportion to the rate of flow of the effluent stream and by grab sample. Samples are analyzed for principal gamma emitters, I-131, dissolved and entrained noble gases, H-3, gross alpha, Sr-89, Sr-90 and Fe-55.

5. Batch Releases

a. Gaseous

1) Number of batch releases:	None
2) Total time period for batch releases:	N/A
3) Maximum time period for a batch release:	N/A
4) Average time period for batch releases:	N/A
5) Minimum time period for a batch release:	N/A

b. Liquid

1) Number of batch releases:	3
2) Total time period for batch releases:	Min. 1.58E+03
3) Maximum time period for a batch release:	Min. 7.49E+02
4) Average time period for batch releases:	Min. 5.25E+02
5) Minimum time period for a batch release:	Min. 1.07E+02
6) Average stream flow during periods of release of effluent into a flowing stream:	gpm 3.70E+04

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)

Supplemental Information (continued)

6. Abnormal Releases

a. Gaseous

- | | |
|-----------------------------|------|
| 1) Number of releases: | None |
| 2) Total activity released: | N/A |

b. Liquid

- | | |
|-----------------------------|------|
| 1) Number of releases: | None |
| 2) Total activity released: | N/A |

7. Process Control Program

There were no changes to the Process Control Program during this time period.

8. Effluent Monitoring Instrumentation timeclocks.

There were no effluent monitoring instrumentation timeclocks exceeded during this time period.

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1998)
METEOROLOGICAL DATA

