

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
1.0	Radioactive Liquid Releases	1
2.0	Radioactive Airborne Releases	4
3.0	Radioactive Solid Waste Shipments	7
4.0	New and Spent Fuel Shipments and Receipts	7
5.0	Radiological Environmental Monitoring	8
6.0	Non-Radiological Environmental Monitoring	10
7.0	Non-Radioactive Chemical Releases	11
8.0	Circulating Water System Operation	12
9.0	Leak Testing of Radioactive Sources	12

7903120264

1.0 RADIOACTIVE LIQUID RELEASES

Radioactive liquid releases via the circulating water discharge are summarized for total release and by individual source on a monthly basis in Table 1-1. An isotopic breakdown of the total radioactive liquid release is presented in Table 1-2.

The total radioactive liquid release excluding tritium for this reporting period was 1.14E-01 Curies which included 7.28E-02 Curies of processed radioactive waste and primary coolant system letdown, 4.15E-02 Curies of Unit 1 steam generator blowdown and 3.00E-04 Curies of Unit 2 steam generator blowdown. The total tritium release for this reporting period was 578 Curies, which included 574 Curies of processed radioactive waste and primary coolant system letdown, 3.69 Curies of Unit 1 steam generator blowdown, 3.85E-02 Curies of Unit 2 steam generator blowdown, and 2.38E-01 Curies of retention pond effluent. All radioactive liquid releases to Lake Michigan were made through the circulating water discharge.

1.1 Additions to Semiannual Monitoring Report January 1, 1978, through June 30, 1978

The following data which was not available at the time of the report preparation should be added to Table 1-1 of the Semiannual Monitoring Report January 1, 1978, through June 30, 1978.

	<u>May</u>	<u>June</u>	<u>Total</u>
Total Activity Released, Ci			
Gross Alpha	<MDA	<MDA	1.14E-05
Average Diluted Discharge Concentration, Ci/cc			
Gross Alpha	----	----	
% MPC	----	----	

The following data which was not available at time of report preparation should be added to Table 1-2 of the Semiannual Monitoring Report January 1, 1978, through June 30, 1978.

	<u>May</u>	<u>June</u>	<u>Total, Ci</u>
Sr-89	<MDA	5.27E-06	6.98E-06
Sr-90	<MDA	<MDA	<MDA
Alpha	<MDA	<MDA	1.14E-05

TABLE 1-1

RADIOACTIVE LIQUID CIRCULATING WATER RELEASE SUMMARY
PERIOD JULY 1 TO DECEMBER 31, 1978

	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>Total</u>
Total Activity Released, Ci							
Beta-Gamma (1)	6.05E-04	1.58E-03	3.08E-02	5.18E-02	1.52E-02	1.45E-02	1.14E-01
Gross Alpha	<MDA	<MDA	4.17E-06	1.54E-05	(3)	(3)	(3)
Tritium	2.53E+01	9.84E+01	1.35E+02	1.84E+02	8.51E+01	5.02E+01	5.78E+02
Total Volumes Released, Gal:							
Processed Waste	3.78E+04	7.46E+04	2.20E+05	2.72E+05	1.05E+05	7.02E+04	7.80E+05
Steam Generator Blowdown, Unit 1	2.32E+06	2.22E+06	1.38E+06	1.89E+06	2.84E+06	2.80E+06	1.34E+07
Steam Generator Blowdown, Unit 2	2.32E+06	2.24E+06	2.16E+06	2.50E+06	2.48E+06	2.77E+06	1.45E+07
Retention Pond	3.30E+05	3.30E+05	4.67E+05	3.68E+05	3.77E+05	4.88E+05	2.36E+06
Total	5.01E+06	4.86E+06	4.23E+06	5.03E+06	5.80E+06	6.13E+06	3.11E+07
Volume of Dilution Water, ml	5.86E+13	5.86E+13	3.95E+13	3.06E+13	5.67E+13	3.35E+13	2.78E+14
Average Diluted Discharge Concentration, μ Ci/cc							
Gross Beta-Gamma	1.03E-11	2.71E-11	7.78E-10	1.70E-09	2.68E-10	4.34E-10	
% MPC	6.52E-05	8.91E-04	6.64E-02	5.83E-02	2.27E-02	2.97E-02	
Gross Alpha	-----	-----	1.05E-13	5.05E-13	(3)	(3)	
% MPC	-----	-----	3.51E-04	1.68E-03	(3)	(3)	
Tritium	4.32E-07	1.68E-06	3.42E-06	6.01E-06	1.50E-06	1.50E-06	
% MPC	1.44E-02	5.60E-02	1.14E-01	2.00E-01	5.00E-02	5.00E-02	
Maximum Discharge Concentration During Release Period, μ Ci/cc							
Gross Beta-Gamma (1)	3.79E-10	3.63E-09	2.22E-08	2.16E-08	6.87E-10	1.96E-09	
Tritium	7.43E-05	7.56E-05	7.59E-05	7.77E-05	3.89E-05	1.07E-04	

NOTES: (1) Not including Strontium results which generally have a negligible effect.
 (2) Summation of the individual isotopic 10 CFR 20, Appendix B Table II MPC's.
 (3) Data unavailable at time of report writing.

TABLE 1-2

ISOTOPIC COMPOSITION OF CIRCULATING WATER DISCHARGES
PERIOD JULY 1 TO DECEMBER 31, 1978

Nuclides Released	July (Curies)	August (Curies)	September (Curies)	October (Curies)	November (Curies)	December (Curies)	Total (Curies)
H-3	2.53E+01	9.84E+01	1.35E+02	1.84E+02	8.51E+01	5.02E+01	5.78E+02
P-18	<MDA	<MDA	<MDA	1.22E-03	3.64E-04	4.49E-05	1.63E-03
Cr-51	<MDA	<MDA	<MDA	6.36E-04	<MDA	<MDA	6.36E-04
Mn-54	<MDA	<MDA	<MDA	7.31E-05	<MDA	<MDA	7.31E-05
Co-56	<MDA	<MDA	<MDA	<MDA	<MDA	1.65E-04	1.65E-04
Co-58	1.95E-04	<MDA	2.86E-04	9.68E-03	2.39E-06	<MDA	1.02E-02
Co-60	3.14E-04	4.80E-06	8.03E-04	5.32E-04	3.54E-05	<MDA	1.69E-03
Sr-89	5.00E-04	<MDA	1.33E-04	<MDA	(1)	(1)	(1)
Sr-90	7.01E-04	<MDA	5.00E-06	<MDA	(1)	(1)	(1)
Sr-91	<MDA	<MDA	4.16E-05	<MDA	<MDA	<MDA	4.16E-05
Y-91M	<MDA	<MDA	3.07E-05	<MDA	<MDA	<MDA	3.07E-05
Nb-95	<MDA	<MDA	2.79E-06	<MDA	<MDA	<MDA	2.79E-06
Zr-95	<MDA	<MDA	<MDA	1.04E-04	<MDA	<MDA	1.04E-04
Ru-103	<MDA	<MDA	3.33E-04	1.09E-04	<MDA	<MDA	4.42E-04
Sn-113	<MDA	<MDA	<MDA	3.96E-05	<MDA	<MDA	3.96E-05
Sb-125	<MDA	<MDA	<MDA	<MDA	2.16E-04	<MDA	2.16E-04
I-131	<MDA	<MDA	5.94E-03	2.54E-03	1.22E-03	3.51E-04	1.00E-02
I-132	<MDA	<MDA	5.02E-04	3.38E-04	1.72E-03	1.36E-03	3.92E-03
I-133	<MDA	<MDA	1.17E-03	1.76E-03	7.51E-03	7.11E-03	1.76E-02
I-134	<MDA	<MDA	6.47E-05	<MDA	2.79E-04	<MDA	3.44E-04
I-135	<MDA	<MDA	<MDA	3.77E-04	2.64E-03	4.52E-03	7.54E-03
Te-132	<MDA	<MDA	1.16E-04	3.13E-05	<MDA	<MDA	1.47E-04
Xe-131M	<MDA	<MDA	2.05E-03	1.91E-02	<MDA	<MDA	2.12E-02
Xe-133	6.91E-05	1.41E-03	1.04E-02	4.42E-04	8.52E-04	6.84E-04	1.39E-02
Xe-133M	<MDA	2.58E-05	<MDA	<MDA	<MDA	<MDA	2.58E-05
Xe-135	4.22E-06	1.25E-04	1.64E-03	1.72E-05	3.64E-04	2.92E-04	2.44E-03
Cs-134	<MDA	<MDA	1.46E-04	1.40E-03	<MDA	<MDA	1.55E-03
Cs-136	<MDA	<MDA	<MDA	5.67E-04	<MDA	<MDA	5.67E-04
Cs-137	2.21E-05	1.90E-05	2.51E-04	4.65E-03	1.31E-05	3.65E-06	4.96E-03
Cs-138	<MDA	<MDA	5.27E-04	<MDA	<MDA	<MDA	5.27E-04
Ce-144	<MDA	<MDA	<MDA	<MDA	<MDA	1.76E-05	1.76E-05
Ba-140	<MDA	<MDA	3.43E-03	5.19E-03	<MDA	<MDA	8.62E-03
La-140	<MDA	<MDA	3.05E-03	3.13E-03	<MDA	<MDA	6.18E-03
Alpha	<MDA	<MDA	4.17E-06	1.54E-05	(1)	(1)	(1)
TOTAL	-----	-----	-----	-----	-----	-----	1.14E-01 (2)

NOTES: <MDA - Less than minimum detectable activity.

(1) - Data unavailable at report time.

(2) - Total does not include tritium, strontium, or alpha.

2.0 RADIOACTIVE AIRBORNE RELEASES

Radioactive airborne releases during normal plant operation are reported by total release in Table 2-1, and summarized by isotope in Table 2-2. The release paths contributing to radioactive airborne releases during this reporting period were the auxiliary building vent stack, Unit 1 containment purge stack, Unit 2 containment purge stack, drumming area vent stack, gas stripper building ventilation exhaust, combined air ejector decay duct exhaust and turbine building ventilation exhaust.

There were two gas decay tank releases during this report period.

2.1 Additions to Semiannual Monitoring Report January 1, 1978, through June 30, 1978

The following data which was not available at the time of report preparation should be added to Table 2-2 of the Semiannual Monitoring Report January 1, 1978, through June 30, 1978.

	<u>April</u>	<u>May</u>	<u>June</u>	<u>Total, Ci</u>
Sr-89	8.61E-08	7.75E-08	7.50E-08	6.45E-07
Sr-90	1.01E-08	4.45E-09	3.07E-11	1.46E-08

2.2 Corrections to Semiannual Monitoring Report January 1, 1978, through June 30, 1978

The following corrections should be made to Section 2.1 of the Semiannual Monitoring Report January 1, 1978, through June 30, 1978, covering the period of July 1, 1977, through December 31, 1977.

	<u>October</u>	<u>November</u>	<u>December</u>	<u>Total, Ci</u>
Sr-89	<MDA	<MDA	<MDA	4.91E-07
Sr-90	<MDA	<MDA	<MDA	<MDA

The following correction should be made to Table 2-2 of the Semiannual Monitoring Report January 1, 1978, through June 30, 1978.

	<u>January</u>	<u>February</u>	<u>March</u>
Sr-89	1.40E-07	1.26E-07	1.40E-07
Sr-90	<MDA	<MDA	<MDA

TABLE 2-1

RADIOACTIVE AIRBORNE RELEASE SUMMARY
PERIOD JULY 1 TO DECEMBER 31, 1978

	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>Total</u>
Total Curies Released (Excluding Tritium)	1.62E+01	4.09E+01	2.38E+01	1.86E+01	1.06E+01	6.48E+00	1.17E+02
Total Xe-133 Equivalent Curies Released ¹	7.83E+02	6.64E+02	2.57E+03	2.18E+03	5.92E+03	2.37E+02	1.24E+04
Average Release Rate (Curies/Second) ²	2.92E-04	2.48E-04	9.91E-04	8.12E-04	2.28E-03	8.8E-05	
Percent of Annual Tech- nical Specification Limits ³	1.46E-01	1.24E-01	4.96E-01	4.06E-01	1.14E+00	4.42E-02	
Maximum Hourly Average Release Rate (Curies/Second) ⁴	8.91E-04	9.33E-04	3.26E-03	2.13E-04	9.50E-04	3.57E-04	
Monthly Average Site Boundary Concentration (μ Ci/cc) ²	4.38E-10	3.72E-10	1.49E-09	1.22E-09	3.43E-09	1.33E-10	

¹ All gaseous and particulate releases are converted to "¹³³Xe equivalent" for calculational purposes using the ratio MPC_{Xe-133}/MPC_i . MPC's for isotopes of iodine and particulate with half-lives longer than eight days are reduced by a factor of 700.

² Averaged over one month and based on Xe-133 equivalent.

³ Annual average Technical Specification limits are 0.2 Ci/sec Xe-133 based on $X/Q - 1.5 \times 10^{-6} \text{ sec/m}^3$. Maximum Technical Specification limits are 2.0 Ci/sec Xe-133 based on $X/Q - 1.5 \times 10^{-6} \text{ sec/m}^3$.

⁴ Expressed as Xe-133 equivalent.

TABLE 2-2

RADIOACTIVE AIRBORNE RELEASE SUMMARY
PERIOD JULY 1 TO DECEMBER 31, 1978

	July (Curies)	August (Curies)	September (Curies)	October (Curies)	November (Curies)	December (Curies)	Total (Curies)
Tritium	5.78E+00	6.55E+00	5.13E+00	6.75E+00	1.60E+01	1.48E+01	5.50E+01
Noble Gases							
Ar-41	6.08E-01	6.78E-01	1.47E-01	9.78E-01	7.81E-01	1.94E-01	3.39E+00
Kr-85	6.30E-02	4.65E-01	2.93E-01	5.16E-01	1.08E-01	1.83E-01	1.63E+00
Kr-85M	1.32E+00	2.90E+00	8.81E-01	1.43E+00	8.24E-01	3.72E-01	7.73E+00
Kr-87	1.51E+00	3.09E+00	9.34E-01	1.34E+00	6.16E-01	3.44E-01	7.83E+00
Kr-88	1.97E+00	4.55E+00	1.46E+00	2.22E+00	1.26E+00	6.32E-01	1.21E+01
Xe-131M	<MDA	<MDA	<MDA	2.50E-02	<MDA	<MDA	2.50E-02
Xe-133	9.06E-01	2.30E+00	1.04E+01	1.09E+00	7.15E-01	1.03E+00	1.64E+01
Xe-133M	8.40E-02	1.31E-01	9.30E-02	5.1E-02	5.00E-03	2.90E-02	3.90E-01
Xe-135	4.49E+00	1.13E+01	3.95E+00	5.32E+00	2.83E+00	1.73E+00	2.96E+01
Xe-135M	2.00E+00	5.28E+00	2.04E+00	2.36E+00	1.40E+00	8.15E-01	1.39E+01
Xe-138	3.19E+00	1.01E+01	3.58E+00	3.29E+00	2.09E+00	1.15E+00	2.34E+01
Particulates with Half Lives Greater Than Eight Days and Iodines							
Cr-51	<MDA	<MDA	<MDA	3.54E-09	6.37E-09	<MDA	9.91E-09
Co-58	4.73E-06	2.38E-07	2.72E-05	2.63E-10	7.32E-11	<MDA	3.22E-05
Co-60	2.16E-07	1.61E-06	2.89E-06	7.02E-05	9.29E-06	1.12E-05	9.54E-05
Sr-89	4.81E-11	4.09E-11	5.87E-11	*	*	*	
Sr-90	9.62E-12	8.18E-12	1.17E-11	*	*	*	
Cd-109	<MDA	<MDA	1.00E-05	<MDA	<MDA	<MDA	1.00E-05
Ag-110M	<MDA	<MDA	<MDA	<MDA	1.03E-07	<MDA	1.03E-07
I-131	2.24E-04	8.77E-05	3.95E-04	8.41E-04	2.04E-03	5.41E-05	3.64E-03
I-132	6.00E-05	<MDA	1.01E-03	4.88E-05	2.31E-04	1.49E-08	1.35E-03
I-133	2.14E-04	3.03E-04	2.94E-03	3.52E-04	2.66E-03	1.37E-04	6.61E-03
I-134	<MDA	<MDA	<MDA	<MDA	4.97E-04	6.52E-08	4.97E-04
Cs-134	<MDA	1.35E-07	<MDA	6.42E-11	3.06E-07	<MDA	4.41E-07
I-135	<MDA	3.21E-09	2.00E-08	1.56E-04	4.68E-04	4.18E-07	6.24E-04
Cs-137	2.8E-06	5.67E-07	7.14E-10	1.88E-07	1.71E-06	3.15E-10	5.32E-06
Ce-139	<MDA	<MDA	<MDA	4.39E-09	<MDA	6.82E-10	5.07E-09
La-140	<MDA	<MDA	<MDA	<MDA	7.04E-06	<MDA	7.04E-06
Ce-141	<MDA	<MDA	<MDA	<MDA	7.56E-11	<MDA	7.56E-11
Ce-144	6.37E-05	<MDA	<MDA	<MDA	1.06E-05	<MDA	7.43E-05
Particulates with Half Lives Less Than Eight Days							
Rb-88	1.02E-04	1.50E-02	1.54E-02	2.98E-04	1.73E-03	5.33E-04	3.31E-02
Te-132	1.32E-08	1.04E-09	1.03E-08	6.34E-09	2.44E-09	6.94E-09	3.10E-08
Cs-138	6.61E-02	1.41E-02	3.36E-05	6.73E-05	4.36E-03	1.35E-04	8.48E-02
Alpha	<MDA	9.11E-07	2.25E-06	3.78E-06	<MDA	<MDA	6.94E-06

* Data unavailable at report time.

<MDA - Less than minimum detectable activity.

3.0 RADIOACTIVE SOLID WASTE SHIPMENTS

Shipments off site of solid waste for burial during this reporting period were as follows:

<u>Date</u>	<u>Volume (Ft.³)</u>	<u>Total Activity (Ci)</u>
07-11-78	58 (1)	17
07-18-78	58 (1)	18.2
08-02-78	736	0.274
08-30-78	85 (1)	130
09-08-78	85 (1)	380
09-15-78	58	3.84
09-20-78	58	3.69
10-24-78	939.2	0.918
12-05-78	90	9.1
	<hr/> 2,167.2	<hr/> 563.02

(1) Involved spent resin

4.0 NEW AND SPENT FUEL SHIPMENTS AND RECEIPTS

During this reporting period, a total of 36 new fuel assemblies were received from Westinghouse Electric Corporation for Unit 1. Thirty-six (36) new assemblies were also received for Unit 2.

No spent fuel assemblies were shipped from Unit 1 or Unit 2.

5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING

Radiological environmental monitoring conducted by Point Beach Nuclear Plant for the period July 1, 1978, through December 31, 1978, consisted of air filters, gamma dose, vegetation, Lake water, well water, milk, shoreline silt, and soil samples collected and analyzed in accordance with Technical Specification 15.4.10.

Minor amounts of Cs-137 have been occasionally noted in milk samples as expected from the atmospheric nuclear weapons tests conducted by the Chinese within the last few years. The most recent Chinese detonation on December 14, 1978, did not produce any immediately noticeable fallout but can be expected to result in increased airborne activity accompanying the mixing of atmospheric layers this coming spring.

All other measurements obtained this period are well within the normal range, and no unusual results or significant departures from the normal were noted.

<u>No.</u>	<u>Sample Type</u>	<u>Low</u>	<u>Average*</u>	<u>High</u>	<u>Units</u>
<u>TLD's</u>					
31	Quarterly	0.61	1.14 ± 0.54	1.63	mR/week
<u>Air Filters</u>					
156	Gross Beta	<0.01	$<0.061 \pm 0.066$	0.20	pCi/m ³
156	Radioiodine	---	all <0.03	---	pCi/m ³
12	Gamma Scan:				
	Ce-144	<0.01	$<0.02 \pm 0.02$	0.03	pCi/m ³
	Cs-137	<0.001	$<0.002 \pm 0.002$	0.003	pCi/m ³
	Zr-Nb-95	<0.001	<0.001	0.002	pCi/m ³
	Others	---	all <0.001	---	pCi/m ³
<u>Lake Water</u>					
30	Gross Beta	<1	$<4 \pm 4$	8	pCi/l
30	Gamma Scan	---	all <10	---	pCi/l
10	Tritium	0.4	$<0.8 \pm 2.4$	3.9	pCi/ml
10	Sr-89	---	all <5	---	pCi/l
10	Sr-90	<1	<1	<2	pCi/l
<u>Well Water</u>					
2	Gross Beta	3	4	5	pCi/l
2	Gamma Scan	---	all <10	---	pCi/l
2	Tritium	---	all <0.5	---	pCi/ml
2	Sr-89	---	all <5	---	pCi/l
2	Sr-90	---	all <1	---	pCi/l

<u>No.</u>	<u>Sample Type</u>	<u>Low</u>	<u>Average*</u>	<u>High</u>	<u>Units</u>
<u>Milk</u>					
18	Radioiodine	---	all <0.5	---	pCi/l
18	Sr-89	---	<5	<7**	pCi/l
18	Sr-90	<1	<2.8 + 3.2	6	pCi/l
18	Gamma Scan:				
	Cs-137	<5	<7.9 + 10.9	24	pCi/l
	Others	---	all <5	---	pCi/l
<u>Algae</u>					
3	Gross Beta	<1	<5	10	pCi/g (wet)
3	Gamma Scan	---	all <1	---	pCi/g (wet)
<u>Vegetation (July & Oct.)</u>					
16	Gross Beta	<1	<3.4 + 4.5	8	pCi/g (wet)
16	Gamma Scan	---	all <1	---	pCi/g (wet)
<u>Soil</u>					
8	Gross Beta	<2	<2	3	pCi/g (dry)
8	Gamma Scan:				
	Cs-137	<1	<1	1	pCi/g (dry)
	Others	---	all <1	---	pCi/g (dry)
<u>Shoreline Silt</u>					
4	Gross Beta	<2	<2	3	pCi/g (wet)
4	Gamma Scan	---	all <1	---	pCi/g (wet)
<u>Fish</u>					
5	Gross Beta	2	2	3	pCi/g (wet)
5	Gamma Scan	---	all <1	---	pCi/g (wet)

* 95% confidence interval given when applicable. Whenever samples below the detection limit are included in computation of the average, the average is shown as a "less than" value.

** Low chemical yield for one milk sample resulted in poorer sensitivity.

6.0 NON-RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

In accordance with Amendment Nos. 29 and 33 to Facility Operating License Nos. DPR-24 and DPR-27, dated November 4, 1977, the Environmental Technical Specifications for the Point Beach Nuclear Plant Unit Nos. 1 and 2 were modified to allow temporary suspension of the non-radiological environmental monitoring program. Licensees were required to analyze the results of the five years of monitoring and compare to preoperational and historical data to assess trends in environmental impact over the period of the study and submit a summary report to the NRC. This summary report was submitted on July 3, 1978, and is referenced in lieu of the semiannual report specified by 16.6.2.a.

7.0 NON-RADIOACTIVE CHEMICAL RELEASES

7.1 Scheduled Chemical Waste Releases

Scheduled chemical waste releases to the circulating water system for the period of 07-01-78 to 12-31-78, included 2,841,948 gallons of neutralized clear water waste. The waste water contained 481.4 pounds of suspended solids and 148,926 pounds of dissolved solids.* When averaged over the reporting period, these discharges represented 37.62% of the Technical Specification limit for dissolved solids and 0.250% of the Technical Specification limit for suspended solids.**

The concentration increases of chemical waste during period of chemical releases ranged from 1.24 to 7.83 ppm dissolved solids and from 1.08E-03 to 7.48E-02 ppm suspended solids.**

Plant chemical records indicated that the following amounts of chemicals were released in the form of neutralized waste:

Sodium	44,379 pounds
Sulfate	103,849 pounds

* Chemical releases calculated are based upon neutralized tank analysis prior to discharge.

** Based on calculations during times of actual discharges.

7.2 Miscellaneous Chemical Waste Releases

Miscellaneous chemical waste releases to the circulating water system from the retention pond for the period of 07-01-78 to 12-31-78 included 2,360,000 gallons of clear water waste. The waste water contained 258 pounds of suspended solids and 15,491 pounds of dissolved solids.* When averaged over the reporting period, these discharges were insignificant with respect to Technical Specification limits.

Retention pond analysis and plant chemical records indicate that the following amounts of chemicals were released in the form of clear water waste from the retention pond.

Sodium	6,420 pounds
Chloride	9,909 pounds
Phosphate	25 pounds

* Chemical release calculations are based on retention pond analysis during the period 07-01-78 to 12-31-78.

8.0 CIRCULATING WATER SYSTEM OPERATIONS

The circulating water system operation during this reporting period for periods of plant operation is described in Table 8-1.

9.0 LEAK TESTING OF RADIOACTIVE SOURCES

During the reporting period, all applicable sealed radioactive sources were leak tested according to Technical Specification Requirement 15.4.12. Results of the leak testing showed no removable contamination greater than 0.005 microcuries from sealed radioactive sources.

TABLE 8-1

CIRCULATING WATER SYSTEM OPERATION

		<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
Average Volume Cooling Water Discharge, Million Gal/Day	UNIT 1	554.4	554.4	527.8(1)	480.8(1)	554.4	351.1
	UNIT 2	554.4	554.4	559.7	500.4	554.9	348.4
Average Cooling Water Intake Temperature Degrees F	UNIT 1	48.5	50.0	61.9	47.9	42.7	36.4
	UNIT 2	48.5	50.0	60.9	47.3	42.7	36.4
Average Cooling Water Discharge Temperature Degrees F	UNIT 1	68.2	69.7	80.3	66.0	62.0	65.2
	UNIT 2	65.8	67.1	78.6	67.2	60.7	63.6
Average Ambient Temperature Degrees F	UNIT 1	47.2	48.5	60.5	47.5	42.6	35.8
	UNIT 2	(2)	(2)	(2)	(2)	(2)	(2)

(1) Unit 1 was shut down for refueling from September 20, 1978, to October 14, 1978.

(2) Instrumentation out-of-service.