WISCONSIN ELECTRIC

POWER COMPANY

POINT BEACH NUCLEAR PLANT

UNIT NOS. 1 AND 2

Semiannual

Monitoring Report

January 1, 1983 through June 30, 1983

IE25
0/40

rec'd
8/30/83

U.S. Nuclear Regulatory Commission
Docket Nos. 50-266 and 50-301
Facility Operating License Nos.
DPR-24 and DPR-27

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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 1.09 Curies which included 0.087 Curies of processed radioactive waste and primary coolant system letdown, 0.210 Curies of Unit 1 steam generator blowdown, and 0.793 Curies of Unit 2 steam generator blowdown. There was no detectable activity in retention pond effluent (other than tritium). The total tritium release for this reporting period was 180.00 Curies, which included 175.00 Curies of processed radioactive waste and primary coolant system letdown, 2.91 Curies of Unit 1 steam generator blowdown, 1.22 Curies of Unit 2 stea generator blowdown, and 0.87 Curies of retention pond effluent. All radioactive liquid releases to Lake Michigan were made through the circulating water discharge.

TABLE 1-1

RADIOACTIVE LIQUID CIRCULATING WATER RELEASE SUMMARY
PERIOD OF JANUARY 1, 1983 TO JUNE 30, 1983

	January	February	March	April	May	June	Total
Total Activity Released, (Ci)							
Gamma Scan	5.74E-02	2.46E-02	8.65E-01	6.56E-02	3.56E-02	4.03E-02	1.09E+00 (3)
Gross Alpha	<MDA	3.55E-06	<MDA	7.81E-07	1.70E-07	(2)	(2)
Tritium	8.71E+00	3.22E+01	4.83E+01	5.80E+01	1.07E+01	2.18E+01	1.80E+02
Total Volumes Released (Gal)							
Processed Waste	2.64E+04	3.53E+04	1.09E+05	2.06E+05	9.79E+04	1.17E+05	5.92E+05
Steam Generator Blowdown, U1	2.66E+06	2.33E+06	2.54E+06	2.95E+06	3.12E+06	3.02E+06	1.66E+07
Steam Generator Blowdown, U2	2.68E+06	2.35E+06	2.23E+06	(1)	(1)	(1)	7.26E+06
Retention Pond	1.55E+06	1.51E+06	4.47E+05	1.95E+06	2.49E+06	1.86E+06	9.81E+06
Total	6.91E+06	6.22E+06	5.32E+06	5.10E+06	5.72E+06	5.00E+06	3.43E+07
Volume of Dilution Water, (cc)	3.71E+13	3.39E+13	4.78E+13	4.65E+13	6.65E+13	6.44E+13	2.96E+14
Average Diluted Discharge Concentration (µCi/cc)							
Gross Gamma	1.54E-09	7.26E-10	1.81E-08	1.41E-09	5.35E-10	6.27E-10	
% MPC	9.80E-02	8.66E-02	2.32E+00	1.76E-01	4.12E-02	3.78E-02	
Gross Alpha	<MDA	1.05E-13	<MDA	9.94E-15	2.56E-15	(2)	
% MPC		3.49E-04		3.31E-05	8.53E-06	(2)	
Tritium	2.35E-07	9.49E-07	1.01E-06	1.25E-06	1.61E-07	3.39E-07	
% MPC	7.82E-03	3.16E-02	3.37E-02	4.16E-02	5.36E-03	1.13E-02	
Maximum Discharge Concentration During Release Period, (µCi/cc)							
Gross Gamma	1.90E-09	1.11E-08	1.33E-07	1.16E-08	6.85E-10	1.64E-09	
Tritium	1.67E-04	2.08E-05	1.93E-04	2.24E-05	8.02E-06	5.07E-05	

(1) = Unit 2 refueling shutdown from March 25, 1983 to July 1, 1983.
(2) = Data unavailable at time of report writing.
(3) = Total does not include strontium results. Generally has a negligible effect.

TABLE 1-2

ISOTOPIC COMPOSITION OF CIRCULATING WATER DISCHARGES
PERIOD OF JANUARY 1, 1983 TO JUNE 30, 1983

Nuclides Released	January (Curies)	February (Curies)	March (Curies)	April (Curies)	May (Curies)	June (Curies)	Total (Curies)
Tritium	8.71E+00	3.22E+01	4.83E+01	5.80E+01	1.07E+01	2.18E+01	1.80E+02
I-131	4.33E-03	5.60E-03	2.72E-01	1.89E-02	3.93E-03	3.26E-03	3.08E-01
I-132	2.09E-03	2.09E-03	1.64E-02	3.78E-03	3.88E-03	3.69E-03	3.19E-02
I-133	8.03E-03	8.45E-03	1.51E-01	9.98E-03	1.01E-02	7.48E-03	1.95E-01
I-134	1.48E-04	7.48E-04	1.53E-03	1.69E-03	1.66E-03	2.23E-03	8.01E-03
I-135	1.00E-03	3.13E-03	4.36E-02	8.36E-03	1.09E-02	9.05E-03	7.61E-02
Xe-133	1.02E-03	2.33E-04	3.11E-02	1.62E-02	2.55E-04	1.15E-04	4.89E-02
Xe-135	7.68E-04	2.03E-05	3.56E-03	2.77E-04	9.79E-04	1.58E-03	7.19E-03
Xe-131M	<MDA	<MDA	<MDA	8.74E-04	<MDA	<MDA	8.74E-04
Cr-51	<MDA	<MDA	<MDA	2.01E-04	<MDA	<MDA	2.01E-04
Sb-125	<MDA	<MDA	<MDA	<MDA	<MDA	4.14E-06	4.14E-06
F-18	4.94E-04	1.09E-03	5.24E-04	<MDA	1.33E-04	8.70E-05	2.33E-03
Cs-134	4.36E-04	8.83E-04	1.35E-01	2.64E-03	1.54E-03	3.05E-03	1.44E-01
Cs-137	6.19E-04	1.64E-04	2.04E-01	2.25E-03	1.65E-03	2.39E-03	2.11E-01
Nb-95	<MDA	1.19E-06	<MDA	<MDA	<MDA	<MDA	1.19E-06
Co-58	8.17E-05	2.43E-05	3.03E-05	2.93E-05	2.53E-05	5.52E-04	7.43E-04
Cs-136	<MDA	<MDA	6.09E-03	<MDA	<MDA	<MDA	6.09E-03
Mn-54	<MDA	<MDA	<MDA	<MDA	1.40E-04	7.29E-05	2.13E-04
Co-60	6.13E-04	7.00E-05	1.62E-04	6.94E-05	3.37E-04	4.53E-04	1.70E-03
Na-24	<MDA	<MDA	<MDA	2.54E-04	<MDA	<MDA	2.54E-04
Cs-138	<MDA	2.09E-03	<MDA	1.30E-04	<MDA	1.51E-03	3.73E-03
Rb-88	3.77E-02	<MDA	<MDA	<MDA	<MDA	4.79E-03	4.25E-02
Sr-89	<MDA	4.22E-05	5.99E-05	5.68E-06	3.90E-07	(1)	(1)
Sr-90	5.40E-05	5.10E-05	7.02E-05	3.76E-05	6.39E-05	(1)	(1)
TOTAL	5.75E-02	2.47E-02	8.65E-01	6.56E-02	3.57E-02	4.03E-02	1.09E+00(2)

(1) = Data unavailable at time of report writing.

(2) = Total does not include strontium results. Generally has a negligible effect.

TABLE 1-3
SUBSOIL SYSTEM DRAINS
TRITIUM SUMMARY

JANUARY 1 TO JUNE 30, 1983

	LOCATION				
	S-1	S-3	S-9	S-10	TOTALS
First Quarter					
H^3 (μCi/cc)	5.80E-07	2.19E-06	No Sample	≦MDA	-
Aver. Flow, gpd	7776	7233	No Flow	17257	-
Second Quarter					
H^3 (μCi/cc)	(1)	(1)	No Sample	(1)	-
Aver. Flow, gpd	9908	3088	No Flow	21205	-
Semiannual Totals					
Total Released, Ci	(1)	(1)	0.0	(1)	(1)
Total flow, gal	1.60E+06	9.32E+05	0.0	3.48E+06	6.01E+06

(1) = Data unavailable at report time.

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 exhaust and turbine building ventilation exhaust.

There were no gas decay tanks released during this report period.

TABLE 2-1

RADIOACTIVE AIRBORNE RELEASE SUMMARY
PERIOD OF JANUARY 1, 1983 TO JUNE 30, 1983

	January	February	March	April	May	June	Total
Total Curies Released (Excluding Tritium)	4.27E+01	6.02E+01	1.90E+02	7.66E+01	4.17E+01	3.81E+01	4.49E+02
Total Xe-133 Equivalent Curies Released (1)	5.04E+02	5.63E+02	5.67E+03	1.51E+04	1.40E+03	4.95E+02	2.38E+04
Average Release Rate (Curies/Second) (2)	1.88E-04	2.33E-04	2.12E-03	5.84E-03	5.21E-04	1.91E-04	
Percent of Annual Technical Specification Limits (3)	9.41E-02	1.16E-01	1.06E+00	2.92E+00	2.61E-01	9.55E-02	
Maximum Hourly Average Release Rate (Curies/Second) (4)	5.94E-04	1.15E-03	2.40E-03	1.56E-02	2.07E-03	1.51E-03	
Monthly Average Site Boundary Concentration (μCi/cc) (2)	2.82E-10	3.49E-10	3.18E-09	8.76E-09	7.82E-10	2.87E-10	

(1) All gaseous particulate releases are converted to Xe-133 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:1.5E-06 sec/m3. Maximum Technical Specification limits are 2.0 Ci/sec Xe-133 based on X/Q:1.5E-06 sec/m3.

(4) Expressed as Xe-133 equivalent.

TABLE 2-2
RADIOACTIVE AIRBORNE RELEASE SUMMARY
PERIOD OF JANUARY 1, 1983 TO JUNE 30, 1983

Nuclides Released	January (Curies)	February (Curies)	March (Curies)	April (Curies)	May (Curies)	June (Curies)	Total (Curies)
Tritium	1.69E+02	2.80E+01	2.92E+02	3.39E+01	2.31E+01	1.14E+01	5.58E+02
Noble Gases							
Xe-133	1.11E+01	1.54E+01	1.38E+02	3.31E+01	8.61E+00	1.01E+01	2.16E+02
Kr-85M	3.20E+00	4.70E+00	4.94E+00	3.79E+00	2.85E+00	2.33E+00	2.18E+01
Kr-88	5.81E+00	8.01E+00	9.22E+00	7.24E+00	5.44E+00	4.47E+00	4.02E+01
Xe-133M	3.99E-01	5.71E-01	2.08E+00	5.06E-01	2.37E-01	2.88E-01	4.08E+00
Xe-135	1.25E+01	1.72E+01	1.90E+01	1.57E+01	1.18E+01	1.00E+01	8.63E+01
Xe-138	4.26E+00	6.17E+00	7.42E+00	7.32E+00	5.93E+00	5.27E+00	3.69E+01
Kr-87	2.69E+00	3.92E+00	4.52E+00	3.88E+00	2.81E+00	2.39E+00	2.02E+01
Xe-135M	1.39E+00	2.34E+00	2.65E+00	2.34E+00	1.83E+00	1.62E+00	1.22E+01
Ar-41	3.81E-01	4.69E-01	5.44E-01	4.05E-01	2.87E-01	2.44E-01	2.33E+00
Kr-85	9.83E-01	1.49E+00	1.89E+00	1.76E+00	1.84E+00	1.30E+00	9.26E+00
Particulates with Half-Lives Less than Eight Days							
F-18	5.22E-10	<MDA	<MDA	<MDA	<MDA	<MDA	5.22E-10
Cs-136	6.57E-11	<MDA	4.48E-08	<MDA	<MDA	<MDA	4.48E-08
Cs-138	2.15E-06	2.96E-06	1.80E-05	<MDA	8.61E-04	5.42E-14	8.84E-04
Rb-88	4.55E-04	6.96E-04	1.31E-03	1.21E-09	1.57E-02	8.52E-06	1.82E-02
Particulates with Half-Lives Greater than Eight Days and Iodines							
I-131	1.07E-04	8.71E-05	2.36E-03	7.00E-03	5.12E-04	1.16E-04	1.02E-02
I-132	8.99E-06	<MDA	1.91E-04	5.52E-04	<MDA	<MDA	7.53E-04
I-133	3.17E-05	4.10E-05	3.29E-04	1.30E-05	9.30E-06	7.41E-06	4.32E-04
I-134	<MDA	3.02E-08	1.64E-08	<MDA	<MDA	<MDA	4.66E-08
I-135	1.72E-05	2.19E-08	1.02E-07	<MDA	<MDA	<MDA	1.73E-05
Sr-89	<MDA	<MDA	<MDA	(1)	(1)	(1)	(1)
Sr-90	<MDA	<MDA	<MDA	(1)	(1)	(1)	(1)
Ce-141	2.40E-07	<MDA	<MDA	1.28E-07	<MDA	<MDA	3.69E-07
Ba-133	<MDA	<MDA	2.60E-06	<MDA	<MDA	<MDA	2.60E-06
Sb-125	<MDA	<MDA	<MDA	3.06E-07	<MDA	<MDA	3.06E-07
Ru-103	<MDA	<MDA	1.87E-08	2.32E-07	<MDA	<MDA	2.51E-07
Cs-134	6.60E-07	4.47E-06	2.01E-06	1.78E-06	1.66E-06	2.06E-06	1.26E-05
Cs-137	9.80E-07	1.28E-05	9.20E-06	3.29E-06	4.98E-06	3.55E-06	3.48E-05
Zr-95	<MDA	<MDA	<MDA	<MDA	<MDA	5.34E-08	5.34E-08
Nb-95	<MDA	<MDA	<MDA	4.18E-07	6.71E-08	3.28E-07	8.13E-07
Co-58	<MDA	<MDA	5.69E-08	3.45E-06	5.10E-06	2.57E-06	1.12E-05
Co-60	1.57E-05	3.83E-07	1.22E-06	3.32E-05	2.64E-05	3.30E-05	1.10E-04
Alpha	<MDA	7.58E-11	1.49E-11	<MDA	2.37E-06	<MDA	2.37E-06

(1) = Data unavailable at report time.

3.0 RADIOACTIVE SOLID WASTE SHIPMENTS

Shipments offsite of solid waste for burial during this reporting period were as follows.

Date	Volume (Ft^3)	Total Activity (Ci)
01-06-83	548.0	0.193
01-18-83	354.5	0.038
01-28-83	62.0	1.046
02-04-83	62.0	0.668
02-10-83	62.0	0.480
02-15-83	641.3	0.242
02-17-83	62.0	0.333
02-24-83	62.0	0.353
03-03-83	62.0	0.420
03-08-83	135.0	2.144
03-15-83	62.0	0.662
03-29-83	62.0	0.678
04-01-83	85.0	48.550 (1)
04-13-83	349.0	0.384
04-22-83	621.5	1.090
04-26-83	157.0	9.700
04-27-83	105.0	11.020
04-27-83	180.0	1.760
04-29-83	627.5	1.308
05-05-83	641.2	1.400
05-06-83	105.0	5.530
05-16-83	85.0	88.500 (1)
05-23-83	157.0	54.100
05-25-83	262.5	0.435
06-03-83	683.6	2.030
06-15-83	344.0	0.317
06-16-83	555.0	1.323
06-22-83	105.0	9.200
06-24-83	543.6	1.555
TOTALS	7781.7 (Ft^3)	245.5 (Ci)

(1) Involved spent resin.

4.0 NEW & SPENT FUEL SHIPMENTS AND RECEIPTS

During this reporting period, a total of 40 new fuel assemblies were received from Westinghouse Electric Corporation for Unit 2. The new fuel assemblies received for Unit 2 were used for the Spring of 1983 refueling.

No spent fuel shipments were made.

5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING

Radiological environmental monitoring conducted by Point Beach Nuclear Plant from January 1, 1983, through June 30, 1983, consisted of air filters, gamma dose, vegetation, lake water, well water, milk, shoreline silt, soil, algae, and fish samples collected and analyzed in accordance with Technical Specification 15.4.10.

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

No.	Sample Type	Low	Average*	High	Units
	TLDs				
44	Quarterly	0.90	1.16 ± 0.26	1.51	mR/wk
	Air Filters				
149	Gross Beta	0.00	0.015 ± 0.013	0.03	pCi/m^3
149	Radioiodine	---	all <0.03	---	pCi/m^3
12	Gamma Scan	---	all <0.01	---	pCi/m^3
	Milk				
18	Radioiodine	---	all <0.5	---	pCi/l
18	Sr-89	---	all <5	---	pCi/l
18	Sr-90	1.1	1.9 ± 1.2	2.9	pCi/l
18	Gamma Scan	---	all <5	---	pCi/l
	Lake Water				
30	Gross Beta	2.1	3.5 ± 1.8	5.6	pCi/l
30	Gamma Scan	---	all <10	---	pCi/l
10	Tritium	<0.5	<0.6 ± 0.4	1.02	pCi/ml
10	Sr-89	---	all <5	---	pCi/l
10	Sr-90	---	all <1	---	pCi/l
	Well Water				
2	Gross Beta	<2.0	<3.1	4.1	pCi/l
2	Gamma Scan	---	both <10	---	pCi/l
2	Tritium	---	both <0.5	---	pCi/ml
2	Sr-89	---	Both <5	---	pCi/l
2	Sr-90	---	both <1	---	pCi/l
	Vegetation				
8	Gross Beta	7.2	10.8 ± 5.9	14.0	pCi/g (dry)
8	Gamma Scan	---	all <1	---	pCi/g (dry)

No.	Sample Type	Low	Average*	High	Units
	Soil				
8	Gross Beta	11.4	20.6 ± 19.4	31.1	pCi/g (dry)
8	Gamma Scan:				
	Cs-137	<1	<1.3 ± 1.8	3.1	pCi/g (dry)
	Others	---	all <1	---	pCi/g (dry)
	Algae				
2	Gross Beta	9.7	10.4	11.0	pCi/g (dry)
2	Gamma Scan	---	both <5	---	pCi/g (dry)
	Fish				
6	Gross Beta	9.8	12.4 ± 4.5	14.8	pCi/g (dry)
6	Gamma Scan	---	all <1	---	pCi/g (dry)
	Shoreline Silt				
5	Gross Beta	5.4	13.6 ± 8.3	27.6	pCi/g (dry)
5	Gamma Scan	---	all <1	---	pCi/g (dry)

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

6.0 NON-RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

In accordance with Amendment Nos. 29 and 33 to Facility Operating Licenses DPR-24 and DPR-27, respectively, dated November 4, 1977, the Environmental Technical Specifications for the Point Beach Nuclear Plant, Units 1 and 2, were modified to allow temporary suspension of the non-radiological environmental monitoring program pending NRC review of the summary report of the five years of monitoring. As a result, the semiannual report specified by Item 16.6.2.a of the Technical Specification is not applicable.

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 January 1, 1983, to June 30, 1983, included 4,101,719 gallons of neutralized clear water waste. The waste water contained 468 pounds of suspended solids and 208,394 pounds of dissolved solids.*

The concentration increases of chemical waste in the circulating water system during the period of chemical releases ranged from 0.224 to 8.541 ppm dissolved solids and from 0.001 to 0.046 ppm suspended solids.**

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

Sodium	62,080 pounds
Sulfate	146,080 pounds

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

** Based on calculations during times of actual discharges for each individual neutralizing tank.

7.2 Miscellaneous Chemical Waste Releases

Miscellaneous chemical waste releases to the circulating water system from the retention pond for the period of January 1, 1983 to June 30, 1983, included 9,810,000 gallons of clear water waste. The waste water contained 1,159 pounds of suspended solids and 64,855 pounds of dissolved solids.*

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

Sodium	12,140 pounds
Chloride	15,943 pounds
Phosphate	53 pounds

The balance of the dissolved solids were in the form of soluble calcium and magnesium compounds resulting from the plant makeup water cold lime softening process.

* Chemical release calculations are based on retention pond analyses during the period January 1, 1983 to June 30, 1983.

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

Results of leak testing according to Technical Specification requirement 15.4.12 showed <0.005 μCi from all applicable sealed radioactive sources for the past reporting period..

TABLE 8-1

CIRCULATING WATER SYSTEM OPERATION

		January	February	March	April	May	June
Average Volume Cooling Water Discharge, Million Gal/Day	UNIT 1	316.5	319.7	421.2	409.3	567.0	566.5
	UNIT 2	308.8	312.8	471.1(1)	(1)	(1)	(1)
Average Cooling Water Intake Temperature Degrees F	UNIT 1	38.0	37.4	38.1	39.7	46.9	48.3
	UNIT 2	40.3	39.2	39.1(1)	(1)	(1)	(1)
Average Cooling Water Discharge Temperature Degrees F	UNIT 1	62.0	61.0	55.5	58.8	60.3	62.2
	UNIT 2	72.2	70.8	59.7(1)	(1)	(1)	(1)
Average Ambient Lake Temperature Degrees F	UNIT 1	37.7	37.6	39.1	39.3	45.6	47.2
	UNIT 2	(2)	(2)	(2)	(2)	(2)	(2)

(1) Unit 2 shut down for refueling and steam generator sleeving from 3-25-83 to 07-01-83.

(2) Instrumentation was out-of-service.