PHILADELPHIA ELECTRIC COMPANY

PHILADELPHIA

PEACH BOTTOM ATOMIC POWER STATION
Unit Nos. 2 and 3
Docket Nos. 50-277 & 50-278

SEMI-ANNUAL EFFLUENT RELEASES REPORT

NO. 15

JANUARY 1, 1983 THROUGH JUNE 30, 1983

Submitted to
The United States Nuclear Regulatory Commission
Pursuant to
Facility Operating License No. DPR-44 & 56

IE25 1/1

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Preparation Directed By:
R. S. Fleischmann, II, Superintendent
Peach Bottom Atomic Power Station

I. INTRODUCTION

In accordance with the Unique Reporting Requirements of Technical Specification 6.9.3., this report summarizes the Effluent Release Data for Peach Bottom Atomic Power Station Units 2 and 3 for the period January 1, 1983 thru June 30, 1983. The notation P and N are used to denote positive and negative exponents to the base 10.

The release of radioactive materials during the reporting period were within the Technical Specification limits. Specifically, the average liquid radioactive release for the reporting period was 4.47% of the permissible limit; the maximum noble gas release was 8.93% of the permissible limit and; the average iodine release was 0.307% of the permissible release.

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TABLE A

PEACH BOTTOM UNITS 2 & 3 - 1983 LIQUID RADIOACTIVE RELEASE DATA

	JAN.	FEB.	MAR..	APR.	MAY.	JUNE	TOTAL
Gross Activity ($\beta\gamma$) Total Curies Except Tritium	7.02N2	2.50N1	5.37N1	1.44N1	1.47N1	6.36N1	1.79
Average µCi/ml Gross Activity (except Tritium) at Point of Release	1.02N8	2.21N8	4.97N8	1.21N8	1.58N8	1.31N8	(2) 1.82N8
Total Curies of Tritium	9.39N1	1.34	1.46	2.40	1.95	3.64	1.17P1
Average µCi/ml Tritium at Point of Release	1.36N7	1.19N7	1.35N7	2.02N7	2.10N7	7.52N8	(2) 1.19N7
Total Curies, Alpha	$\leq$1.04N6	$\leq$2.84N6	5.18N6	2.19N6	1.64N6	1.21N4	$\leq$1.34N4
Average µCi/ml Alpha at Point of Release	$\leq$1.51N13	$\leq$2.51N13	4.80N13	1.84N13	1.77N13	2.50N12	(2) $\leq$1.36N12
Total Curies of Dissolved Noble Gases	1.64N2	7.38N3	2.91N2	3.68N2	3.38N2	5.41N2	1.78N1
Average µCi/ml of Noble Gases at Point of Release	2.38N9	6.53N10	2.69N9	3.09N9	3.64N9	1.12N9	(2) 1.81N9
Maximum µCi/ml Released (except Tritium) - at Point of Release	6.49N9	4.37N8	5.11N7	6.57N8	5.88N8	4.39N7	(3) 5.11N7
Total Volume of Waste: Gallons:	1.85P5	4.52P5	4.92P5	7.71P5	5.60P5	1.60P6	4.06P6
Liters:	7.01P5	1.71P6	1.86P6	2.92P6	2.27P6	6.05P6	1.55P7
Total Volume Dilution: Gallons:	1.82P9	2.98P9	2.87P9	3.15P9	2.45P9	1.28P10	2.61P10
Liters:	6.88P9	1.13P10	1.08P10	1.19P10	9.28P9	4.84P10	9.82P10
% of Tech. Spec. Curie Limit (1)	1.05%	3.75%	8.05%	2.16%	2.20%	9.54%	(2) 4.47%

(1). Based on Tech. Spec. 3.8.B.2
(2). Average for 6 month period
(3). Maximum for 6 month period

TABLE B

PEACH BOTTOM UNITS 2 & 3 - 1983 ISOTOPIC ANALYSIS OF LIQUID RADIOACTIVE RELEASES (In Curies)

ISOTOPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	Ci TOTAL
Strontium-89	1.82N4	4.32N4	1.01N3	7.32N5	1.13N4	9.08N4	2.72N3
Strontium-90	8.20N6	2.19N5	4.28N5	1.27N5	6.06N6	4.42N5	1.35N4
Cesium-134	1.26N3	2.06N2	4.34N2	2.11N2	7.74N3	2.61N2	1.20N1
Cesium-137	2.37N3	4.23N2	8.07N2	2.42N2	1.17N2	5.32N2	2.14N1
Iodine-131	6.93N4	1.14N2	7.42N2	1.94N2	2.06N2	4.21N3	1.31N1
Cobalt-58	1.71N3	3.52N3	7.01N3	1.59N4	5.04N4	2.02N3	1.49N2
Cobalt-60	4.39N3	1.39N2	4.22N2	4.98N3	9.58N3	3.00N2	1.05N1
Zinc-65	2.68N2	1.20N1	1.22N1	2.37N2	5.19N2	2.23N1	5.67N1
Manganese-54	*	6.72N5	1.57N3	*	7.22N5	8.59N4	2.57N3
Chromium-51	1.67N3	1.47N3	5.04N3	*	*	3.37N3	1.16N2
Zirconium-95	*	*	*	*	*	*	*
Manganese-56	*	*	*	*	*	*	*
Lanthanum-140	5.34N4	*	7.63N4	5.29N4	4.10N4	1.30N3	3.54N3
Niobium-95	4.21N5	*	*	7.56N5	*	*	1.18N4
Sodium-24	2.95N3	2.04N2	4.49N2	5.35N3	1.29N3	1.27N1	2.02N1
Yttrium-91M	*	*	7.17N4	1.61N4	3.81N5	4.96N4	1.41N3
Xenon-135M	8.86N4	2.67N3	3.51N3	9.63N5	*	7.64N3	1.48N2
Iodine-133	2.41N4	2.71N3	2.48N2	2.90N4	1.08N3	9.14N3	3.83N2

TABLE B (Continued)

PEACH BOTTOM UNITS 2 & 3 - 1983 ISOTOPIC ANALYSIS OF LIQUID RADIOACTIVE RELEASES (In Curies)

ISOTOPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	Ci TOTAL
Iodine-135	*	5.79N4	3.03N3	*	*	3.86N3	7.47N3
Strontium-92	*	1.05N4	2.56N4	8.20N5	*	5.36N5	4.97N4
Technetium-99m	3.26N4	5.49N4	5.89N3	9.64N5	1.81N4	6.75N3	1.38N2
Xenon-133M	*	*	*	3.77N4	*	*	3.77N4
Xenon-133	3.98N3	1.80N3	1.19N2	2.79N2	2.90N2	2.17N2	9.63N2
Xenon-135	1.14N2	2.91N3	7.37N3	8.32N3	4.75N3	2.48N2	5.96N2
Phosphorus-32	2.53N3	1.49N2	5.96N2	3.44N3	3.63N3	1.21N3	8.53N2
Iron-55	4.17N5	3.76N5	1.99N3	7.35N3	2.86N3	7.87N3	2.01N2
Nickel-63	4.59N5	5.14N4	4.43N4	1.99N4	2.95N4	4.96N2	5.11N2
Barium-140	*	2.19N4	1.02N3	*	*	1.21N4	1.36N3
Neptunium-239	*	*	*	*	*	*	*
Iodine-132	*	6.05N5	6.73N4	*	*	1.24N3	1.97N3
Tellurium-132	*	*	*	*	*	*	*
Xenon-131M	*	*	4.16N3	4.11N4	*	*	6.54N3
Krypton-85M	*	*	2.17N3	1.89N4	2.28N5	*	2.38N3
Iodine-134	*	*	*	*	*	5.15N4	5.15N4
Copper-64	6.76N3	*	*	*	*	*	6.76N3

TABLE B (Continued)

PEACH BOTTOM UNITS 2 & 3 - 1983 ISOTOPIC ANALYSIS OF LIQUID RADIOACTIVE RELEASES (In Curies)

ISOTOPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	Ci TOTAL
Strontium-91	*	*	*	*	*	*	*
Ruthenium-103	*	*	*	*	*	*	*
Molybdenum-99	*	*	*	*	*	*	*
Cadmium-109	*	*	5.07N3	*	*	*	5.07N3
Antimony-124	*	2.03N4	*	*	3.20N5	*	2.35N4
Silver-110m	*	*	*	1.78N4	*	*	1.78N4
Manganese-56	*	*	*	*	*	3.73N4	3.73N4
TOTALS	6.88N2	2.61N1	5.55N1	1.49N1	1.46N1	6.07N1	1.79

*Less than minimum detectable.

TABLE C

PEACH BOTTOM UNITS 2 & 3 - 1983 GASEOUS RADIOACTIVE RELEASE DATA

	JAN	FEB.	MAR.	APRIL	MAY.	JUNE	TOTAL
Mixed Noble Gases (Ci)	3.80P3	2.24P3	1.55P3	3.33P3	3.32P3	4.53P3	1.88P4
% of Tech. Spec. Limit (1)	.456	.411	.307	.390	.269	.392	.364
Iodine-131 (Ci)	2.64N3	1.80N3	1.03N2	6.62N3	7.44N3	1.56N3	3.04N2
% of Tech. Spec. Limit (2)	.206	.172	.784	.183	.347	.149	.307
Particulates >8 Day Half Life (Ci)	2.92N4	4.50N4	5.07N4	6.90N4	3.07N4	5.26N4	2.77N3
Particulate Alpha (Ci)	7.57N7	6.70N7	9.18N7	7.01N7	5.76N7	3.16N7	3.94N6
% of Tech. Spec. Limit (2)	.006	.001	.010	.003	.001	.004	.004
Tritium (Ci) (3)	3.03	2.42	2.42	1.64	1.31	1.31	1.21P1
Max. Noble Gas Release Rate (uCi/sec)	2.81P4	1.65P4	8.70P3	2.00P4	1.75P4	4.34P3	2.81P4
Date:	1/29	2/14	3/23	5/3	5/20	6/29	1/29
% of Tech. Spec. Limit for Maximum Noble Gas Release (1)	8.93	5.15	2.63	6.03	5.20	2.34	8.93
Maximum % of Tech. Spec. Limit (1)	8.93	5.15	4.08	6.03	5.20	8.55	8.93

(1) Basis: Tech. Spec. 3.8.C.1
(2) Basis: Tech. Spec.3.8.C.2
(3) Quarterly analysis used for monthly estimate.

TABLE D

PEACH BOTTOM UNITS 2 & 3 - 1983 ISOTOPIC ANALYSIS OF GASEOUS RADIOACTIVE EFFLUENTS (In Curies)

ISOTOPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	Ci TOTAL
Krypton-85m	1.10P1	7.51	2.42	1.25P1	2.69P1	2.63P1	8.66P1
Xenon-133	3.02P3	1.46P3	1.23P3	2.69P3	2.31P3	3.29P3	1.40P4
Xenon-135	6.00P2	3.12P2	2.11P2	5.17P2	9.18P2	1.07P3	3.63P3
Krypton-88	1.90P1	1.75	2.98	6.32	*	3.18P1	6.19P1
Xenon-138	9.00	4.18	*	*	*	*	1.32P1
Xenon-133m	1.02P2	9.53P1	2.29P1	7.37P1	4.13P1	5.47P1	3.90P2
Krypton-87	1.77P1	8.11	2.93	4.64	3.71	1.82P1	5.53P1
Xenon-135m	6.65	4.12	7.10P1	*	8.18	2.17P1	1.12P2
No I.D.	1.37P1	7.63	8.55	3.11P1	1.29P1	2.06P1	9.45P1
Total	3.80P3	1.90P3	1.55P3	3.34P3	3.32P3	4.53P3	1.84P4
Iodine-131	2.64N3	1.80N3	1.03N2	6.62N3	7.44N3	1.56N3	3.04N2
Iodine-133	6.02N2	4.82N2	4.82N2	7.68N2	6.14N2	6.14N2	3.56N1
Iodine-135	3.83N2	3.06N2	3.06N2	4.75N2	3.80N2	3.80N2	2.23N1
Total	1.01N1	8.06N2	8.91N2	1.31N1	1.07N1	1.01N1	6.09N1
Strontium-89	1.51N4	1.30N4	1.13N4	1.85N4	9.10N5	2.10N4	8.80N4

TABLE D (Continued)

PEACH BOTTOM UNITS 2 & 3 - 1983 ISOTOPIC ANALYSIS OF GASEOUS
RADIOACTIVE EFFLUENTS (In Curies)

ISOTOPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	Ci TOTAL
Strontium-90	2.81N6	5.41N6	4.47N6	4.97N6	4.21N6	8.00N7	2.2[illegible]
Rubidium-89	*	*	*	*	4.55N4	*	4.55N4
Cesium-134	*	*	2.26N5	3.46N5	1.14N5	*	6.86N5
Cesium-137	3.56N5	*	8.12N5	5.70N5	8.04N6	*	1.82N4
Lanthanum-140	7.55N5	1.57N4	1.15N4	2.23N4	1.33N4	2.40N4	9.44N4
Cobalt-58	*	*	*	*	*	*	*
Cobalt-60	*	*	2.08N5	2.76N5	5.27N6	*	5.37N5
Zinc-65	*	9.39N5	8.32N5	3.89N5	3.62N6	*	2.20N4
Manganese-54	*	*	*	*	*	*	*
Strontium-91	1.24N4	2.47N4	1.07N4	2.94N4	1.84N4	2.74N4	1.23N3
Cadmium-109	*	*	*	*	*	*	*
Chromium-51	*	*	*	*	*	*	*
Sodium-24	5.51N5	4.40N5	*	*	*	7.41N5	1.73N4
Cesium-138	1.12N2	9.14N3	5.47N3	9.05N3	5.19N3	8.91N3	4.90N2
Barium-140	1.12N4	2.20N4	1.81N4	3.41N4	1.83N4	3.14N4	1.35N3
Yttrium-91m	8.30N4	1.15N3	9.85N4	1.05N3	9.27N4	1.87N3	6.81N3
Technetium-99m	5.82N5	*	*	*	*	3.84N5	9.66N5

TABLE D (Continued)

PEACH BOTTOM UNITS 2 & 3 - 1983 ISOTOPIC ANALYSIS OF GASEOUS RADIOACTIVE EFFLUENTS (In Curies)

ISOTOPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	Ci TOTAL
Barium-139	1.38N3	4.30N3	1.95N3	3.54N3	2.16N3	3.33N3	1.67N2
Xenon-133	*	*	*	*	*	1.62N4	1.62N4
TOTAL	1.40N2	1.55N2	9.13N3	1.48N2	9.36N3	1.54N2	7.82N2

*Less than minimum detectable.

TABLE E

PEACH BOTTOM UNITS 2 & 3 - 1983 SOLID RADIOACTIVE WASTE SHIPMENT

	JAN.	FEB.	MARCH	APR.	MAY.	JUNE	TOTAL
Number of shipments	32	29	33	28	24	30	176
Volume of waste $(ft)^3$	5.18P3	9.87P3	8.90P3	7.93P3	6.45P3	6.03P3	4.44P4
Activity, Curies	4.73P2	6.72P3	1.14P3	4.22P2	2.84P2	3.51P3	1.25P4
Shipping dates (# of shipments)	B 12/29 (1)	A 1/31 (1)	A 2/28 (1)	A 3/31 (1)	A 4/29(1)	A 5/31 (1)	
	A 1/3 (1)	A 2/1 (2)	A 3/1 (1)	A 4/1 (1)	B 4/30 (1)	A 6/1 (2)	
A. Disposition - All	A 1/4 (3)	A 2/2 (2)	A 3/2 (1)	B 4/1 (1)	A 5/2 (1)	B 6/2 (1)	
waste shipped by	A 1/5 (1)	A 2/3 (2)	A 3/3 (2)	B 4/2 (1)	A 5/3 (1)	A 6/3 (1)	
Hittman Nuclear	A 1/6 (1)	A 2/4 (1)	A 3/4 (1)	A 4/4 (1)	A 5/4 (1)	A 6/6 (2)	
and Development	A 1/7 (2)	A 2/7 (1)	B 3/5 (1)	A 4/5 (1)	A 5/5 (2)	B 6/6 (1)	
Corporation in trucks	A 1/10 (1)	A 2/8 (1)	A 3/7 (1)	A 4/6 (1)	A 5/6 (1)	A 6/7 (1)	
to the Chem Nuclear	A 1/11 (2)	A 2/9 (1)	A 3/8 (1)	A 4/8 (1)	B 5/6 (1)	A 6/8 (1)	
Corporation, Barnwell,	A 1/12 (1)	A 2/10 (1)	A 3/9 (1)	A 4/11 (2)	A 5/9 (1)	A 6/9 (1)	
South Carolina.	A 1/13 (2)	A 2/11 (1)	A 3/10 (2)	A 4/12 (2)	B 5/11 (1)	B 6/9 (1)	
B. Disposition - All	A 1/14 (1)	A 2/14 (1)	A 3/11 (1)	B 4/13 (1)	A 5/13 (1)	A 6/10 (1)	
waste shipped by	A 1/17 (1)	A 2/15 (2)	B 3/12 (1)	A 4/14 (1)	A 5/16 (1)	B 6/11 (1)	
Hittman Nuclear	A 1/18 (2)	A 2/16 (1)	A 3/14 (1)	B 4/14 (1)	B 5/17 (1)	A 6/13 (1)	
and Development	A 1/19 (1)	A 2/17 (2)	A 3/15 (1)	A 4/18 (1)	A 5/17 (1)	A 6/14 (1)	
Corporation on trucks	A 1/20 (2)	A 2/18 (1)	A 3/16 (2)	A 4/19 (1)	A 5/19 (2)	A 6/15 (1)	
to U.S. Ecology, Inc.,	A 1/21 (1)	B 2/19 (1)	A 3/17 (1)	A 4/20 (1)	A 5/23 (1)	A 6/16 (1)	
Richland, Washington.	A 1/24 (1)	B 2/21 (1)	A 3/18 (1)	A 4/21 (1)	B 5/23 (1)	A 6/17 (1)	
Shipments are logged	A 1/25 (1)	A 2/22 (1)	B 3/19 (1)	B 4/21 (1)	A 5/24 (1)	A 6/20 (1)	
according to the month	A 1/26 (2)	A 2/23 (1)	A 3/21 (1)	A 4/22 (1)	A 5/26 (2)	A 6/21 (1)	
received at destination,	A 1/27 (2)	A 2/24 (2)	A 3/22 (2)	B 4/23 (1)	B 5/26 (1)	A 6/23 (2)	
which sometimes differs	A 1/28 (1)	A 2/25 (1)	B 3/23 (1)	A 4/25 (1)	A 5/27 (1)	B 6/23 (1)	
from the month in which	B 1/28 (1)	A 2/26 (2)	A 3/23 (1)	B 4/25 (1)		A 6/24 (2)	
it was shipped.	B 1/29 (1)		A 3/24 (2)	A 4/26 (1)		B 6/27 (2)	
			A 3/25 (1)	A 4/27 (2)		A 6/28 (1)	
			A 3/26 (1)	A 4/28 (1)		A 6/29 (1)	
			A 3/28 (1)				
			A 3/29 (1)				
			A 3/30 (1)				

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

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PHILADELPHIA, PA. 19101

(215) 841-4000

August 30, 1983

Docket Nos. 50-277
50-278

Dr. Thomas E. Murley, Administrator
Region 1
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

SUBJECT: Report of Semi-Annual Effluent Releases No. 15
January 1, 1983, through June 30, 1983
Peach Bottom Atomic Power Station Unit Nos. 2 & 3

Dear Dr. Murley:

Enclosed are two copies of the Semi-Annual Effluent Releases Report No. 15, January 1, 1983 - June 30, 1983, for Peach Bottom Atomic Power Station Unit Nos. 2 and 3.

This report is being submitted in compliance with the Technical Specifications of Operating Licensees DPR-44 and DPR-56 and to fulfill the requirements of Regulatory Guide 10.1.

Very truly yours,

W. M. Alden
Engineer-In-Charge
Licensing Section
Nuclear Generation Division

GHS:vdw

Attachments

cc: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

A. R. Blough, Site Inspector

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