

PEACH BOTTOM ATOMIC POWER STATION

THERMAL MAPPING REPORT NO. 84-11

FOR

NOVEMBER 3, 1984

FOR

THERMAL MONITORING REQUIREMENTS

UNITS NO. 2 AND 3

PHILADELPHIA ELECTRIC COMPANY

8504160340 850404
PDR ADOCK 05000277
R PDR

SUMMARY

On November 3, 1984 one cooling tower was in operation and the river flow was less than 15,000 cfs, therefore, thermal plume mapping was performed.

The following table lists conditions on November 3, 1984:

River Flow (cfs)	:	7500
Heat Discharge (BTU/hr)	:	2.02×10^{10}
# of C.W. Pumps Operating	:	2
# of Cooling Towers	:	1
Temp. Discharge Canal °F ⁽¹⁾	:	69.1
Temp. State Line °F ⁽²⁾	:	63.5
Temp. Holtwood Dam °F	:	63.7

$$\begin{aligned}\Delta T \text{ Plant} &= [(STA23 - STA1 - TCL)] 1.8 \\ &= [(17.5 - 16.9 - 2.2)] 1.8 \\ &= 0^\circ F\end{aligned}$$

- (1) Bulk temperature of water discharged to Conowingo Pond from Discharge Canal.
- (2) Pennsylvania/Maryland State Line.

BZ/mb/03288503

TABLEBOAT SURVEY INFORMATION

SURVEY DATE 11/3/84

TIME:

Survey Start (EST) 0830

State Line (EST) 1000

Survey Finish (EST) 1115

HYDRAULIC DATA:

Pond Elevation Start (Ft.) 107.75

Pond Elevation Finish (Ft.) 107.97

Natural Flow (24 hr. ave., CFS) 7500

Conowingo Inflow (24 hr. ave., CFS) 4700

Conowingo Dam Draft (24 hr. ave., CFS) 100

PBAPS Power Output:

Unit 2: Thermal (MW) 0

Electrical (MW) -5.76

Unit 3: Thermal (MW) 1358.00

Electrical (MW) 387.64

METEOROLOGICAL DATA:

Time (EST) 0830-0845

Air Temperature (°F) 37

Dew Point (°F) 20

Precipitation (24 hr. total, in) none

Wind Speed (mph) 6

Cloud Over clear

Location: weather station #1A

Wind Direction 40°

WATER TEMPERATURE (SURVEY)

PBAPS Discharge	°C, (°F)	20.6	(69.2)
Intake	°C, (°F)	16.7	(62.1)
ΔT	°C, (°F)	3.9	(7.0)
Pond Surface Max.	°C, (°F)	20.7	(69.3)
Min.	°C, (°F)	16.3	(61.3)
Pond Bottom Max.	°C, (°F)	20.6	(69.1)
Min.	°C, (°F)	16.1	(61.0)
No. of C.W. Pumps Operating		2	
No. of Cooling Towers Operating		1	

BZ/mb/03288501

CONOWINGO DAM



MT. JOHNSON ISLAND

68 PEACH BOTTOM
ATOMIC POWER
STATION

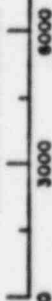
SURFACE

DEPTH 5 FT.

DEPTH 10 FT.

PLANT POWER: 41 %

HORIZONTAL SCALE (FT.)



AT STATE LINE = 0

HORIZONTAL ISOTHERMS

CONOWINGO POND

DATE 11-3-84

TIME 0830-1115