

PEACH BOTTOM ATOMIC POWER STATION

THERMAL MAPPING REPORT NO. 85-1

FOR

JULY 17, 1985

FOR

THERMAL MONITORING REQUIREMENTS

UNITS NO. 2 AND 3

PHILADELPHIA ELECTRIC COMPANY

8508130115 850808
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R PDR

SUMMARY

For several days during the week of July 15, 1985 there were less than 3 cooling towers in operation and the river flow was less than 15,000 cfs, therefore, thermal plume mapping was performed.

The following table lists condition on July, 20, 1985

River Flow (cfs)	: 11,500
Heat Discharge (BTU/hr)	: 2.05×10^9
# of C.W. Pumps Operating	: 4
# of Cooling Towers	: 0
Temp. Discharge Canal °F ⁽¹⁾	: 86.0
Temp. State Line °F ⁽²⁾	: 84.9
Temp. Holtwood Dam °F	: 82.2

$$\begin{aligned}T \text{ Plant} &= [(STA23-STA1-TCL)] 1.8 \\&= [(29.4-27.8-2.4)] 1.8 \\&= 0^\circ\text{F}\end{aligned}$$

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

TABLE
BOAT SURVEY INFORMATION

SURVEY DATE 7/17/85

TIME:

Survey Start (EST)	0847
State Line (EST)	1106
Survey Finish (EST)	1302

HYDRAULIC DATA:

Pond Elevation Start (Ft.)	106.52
Pond Elevation Finish (Ft.)	107.74
Natural Flow (24 hr. ave., CFS)	11,200
Conowingo Inflow (24 hr. ave., CFS)	11,500
Conowingo Dam Draft (24 hr. ave., CFS)	16,250

PBAPS Power Output:

Unit 2: Thermal (MW)	2116
Electrical (MW)	14,426.4
Unit 3: Thermal (MW)	0
Electrical (MW)	-433.6

METEOROLOGICAL DATA:

Time (EST)	1110
Air Temperature (°F)	75
Dew Point (°F)	52°
Precipitation (24 hr. total, in)	NONE
Wind Speed (mph)	6
Cloud Over	NONE
Location:	1A
Wind Direction	350

WATER TEMPERATURE (SURVEY)

PBAPS Discharge	°C, (°F)	28.18	(82.72)
Intake	°C, (°F)	27.16	(80.88)
T	°C, (°F)	1.02	(1.84)
Pond Surface Max.	°C, (°F)	28.6	(83.48)
Min.	°C, (°F)	26.3	(79.34)
Pond Bottom Max.	°C, (°F)	28.4	(83.12)
Min.	°C, (°F)	25.4	(77.72)
No. of C.W. Pumps Operating		5	
No. of Cooling Towers Operating		3	

RJS/dg/07318506

CONOWINGO DAM



MT. JOHNSON ISLAND

PEACH BOTTOM
ATOMIC POWER
STATION

SURFACE

DEPTH 5 FT.

DEPTH 10 FT.

PLANT POWER: 64.5%

HORIZONTAL SCALE (FT.)



AT STATE LINE = 0

FIGURE
HORIZONTAL ISOTHERMS
CONOWINGO POND
DATE 7/17/85
TIME 0900-1300