

Peach Bottom Atomic Power Station

Thermal Mapping Report No. 81-2

FOR

July 22, 1981

FOR

Thermal Monitoring Requirements

Units No. 2 and 3

Philadelphia Electric Company

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SUMMARY

On July 22, 1981 less than three cooling towers were in operation and river flows were less than 15,000 cfs therefore thermal plume mapping was performed.

The following table lists conditions on July 22:

Date	:	July 22, 1981
River Flow (cfs)	:	9,100
Heat Discharged (BTU/hr)	:	3.1×10^9
# of C.W. Pumps Operating	:	1
# of Cooling Towers	:	1
Temp Discharge Canal °F ⁽¹⁾	:	92.3
Temp State Line °F ⁽²⁾	:	83.7
Temp Holtwood Dam °F	:	81.5

(1) Bulk temperature of water discharged to Conowigno Pond from discharge canal.

(2) Pennsylvania/Maryland State Line.

TABLE

BOAT SURVEY INFORMATION

SURVEY DATE

TIME:

Survey Start (EST)	0710
State Line (EST)	0900
+ Survey Finish (EST)	1050

HYDRAULIC DATA:

+ Pond Elevation Start (Ft.)	106.40
+ Pond Elevation Finish (Ft.)	107.53
Natural Flow (24 hour ave., CFS)	9,100
Conowingo Inflow (24 hr. ave., CFS)	11,975
Conowingo Dam Dratt (24 hr. ave., CFS)	20,900

PBAPS Power Output:

Unit 2: Thermal (MW)	3153
Electrical (MW)	1009.5
Unit 3: Thermal (MW)	0
Electrical (MW)	-7.8

METEOROLOGICAL DATA:

Time (EST)	0710-0725
Air Temperature ($^{\circ}$ F)	75
Relative Humidity (%)	65
Precipitation (24 hour total, in)	0
Wind Speed (mph)	12
Cloud Over	LIGHT
Location:	BOAT STA. #7
Wind Direction	N

WATER TEMPERATURE (SURVEY)

PBAPS Discharge	$^{\circ}$ C, ($^{\circ}$ F)	33.5	(92.3)
Intake	$^{\circ}$ C, ($^{\circ}$ F)	27.56	(81.6)
ΔT	$^{\circ}$ C, ($^{\circ}$ F)	5.94	(10.7)
Pond Surface Max.	$^{\circ}$ C, ($^{\circ}$ F)	33.5	(92.3)
Min.	$^{\circ}$ C, ($^{\circ}$ F)	27.4	(81.32)
Pond Bottom Max.	$^{\circ}$ C, ($^{\circ}$ F)	34.6	(94.28)
Min.	$^{\circ}$ C, ($^{\circ}$ F)	27.3	(81.14)
No. of C.W. Pumps Operating		1	
No. of Cooling Towers Operating		1	

CONOWINGO DAM



MT. JORDAN ISLAND

PEACH BOTTOM ATOMIC POWER STATION

SURFACE

DEPTH 5 FT.

DEPTH 10 FT.

FIGURE
HORIZONTAL ISOTHERMS
CONOWINGO POND
DATE 7/22/81
TIME 0710-1050

PLANT POWER: 98.7%

HORIZONTAL SCALE (FT.)

ΔT AT STATE LINE = C° F

0 3000 6000

