

Peach Bottom Atomic Power Station

Thermal Mapping Report No. 80-4

For

August 7, 1980

For

Thermal Monitoring Requirements

Units No. 2 and 3

Philadelphia Electric Company

0000180 431

Summary

On August 6 less than three cooling towers were in operation and river flows were less than 15,000 cfs therefore thermal plume mapping was ordered and was performed on August 7th.

The following table lists conditions on August 6, and August 7th.

Date	:	8/6/80	8/7/80
River Flow (cfs)	:	8500	7300
Heat Discharged (BTU/hr)	:	1.15×10^9	3.41×10^9
# of C.W. Pumps Operating	:	4	4
# of Cooling Towers	:	2	3
Temp Discharge Canal °F ⁽¹⁾	:	89	89
Temp State Line °F ⁽²⁾	:	-	82.6
Temp Holtwood Dam °F	:	-	86.9

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

(2) Bulk temperature of water at State Line.

TABLE
BOAT SURVEY INFORMATION

SURVEY DATE	04/07/30
TIME:	
Survey Start (EST)	0700
Status Line (EST)	0800
Survey Finish (EST)	0920

HYDRAULIC DATA:

Pond Elevation Start (Ft.)	106.67
Pond Elevation Finish (Ft.)	107.15
Natural Flow (24 hour ave., CFS)	7,300
Conowingo Inflow (24 hrs. ave., CFS)	10,300
Conowingo Dam Draft (24 hr. ave., CFS)	9,975

PRAPS Power Output:

Unit 2: Thermal (MW)	0
Electrical (MW)	-15.3
Unit 3: Thermal (MW)	3281.9
Electrical (MW)	1028.6

METEOROLOGICAL DATA:

Time (EST)	0645 0700
Air Temperature (*F)	80
Relative Humidity (%)	72
Precipitation (24 hour total, in)	0
Wind Speed (mph)	2
Cloud Over	Hazy
Location	Boat Sta. # 7
Wind Direction	NW

WATER TEMPERATURE (SURVEY)

PRAPS Discharge	*C, (*F)	31.7 (89.06)
Intake	*C, (*F)	28.4 (83.12)
ΔT	*C, (*F)	3.3 (5.94)
Pond Surface Max.	*C, (*F)	31.6 (88.8)
Min.	*C, (*F)	28.2 (82.7)
Pond Bottom Max.	*C, (*F)	31.8 (89.2)
Min.	*C, (*F)	28.0 (82.4)
No. of C.W. Pumps Operating		4
No. of Cooling Towers Operating		3

CORNINGO DAM



MT. JOHNSON ISLAND

PEAN BUTTON ATOMIC POWER STATION

SURFACE

DEPTH 5 FT.

DEPTH 10 FT.

FIGURE
HORIZONTAL ISOTHERMS
CONOWINGO POND
DATE 08-07-80
TIME 0700-9200

PLANT POWER: 100 %

HORIZONTAL SCALE (FT)

AT STATE LINE = 0' F

