

50-277
50-278

Peach Bottom Atomic Power Station

Thermal Mapping Report No. 83-1

For

November 1, 1983

For

Thermal Monitoring Requirements

Units No. 2 and 3

Philadelphia Electric Company

8312020317 831101
PDR ADOCK 05000277
PDR

COOL
VI

SUMMARY

On November 1, 1983 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 November 1, 1983:

Date	:	November 1, 1983
River Flow (cfs)	:	5,600
Heat Discharged (BTU/hr)	:	1.19×10^9
# of C.W. Pumps Operating:		3
# of Cooling Towers	:	1-2
Temp Discharge Canal °F ⁽¹⁾	:	68.2
Temp State Line °F ⁽²⁾	:	59.2
Temp Holtwood Dam °F	:	53.7

$$\begin{aligned}\Delta T \text{ Plant} &= [(STA 23 - STA 1 - TCL)] 1.8 \\ &= [(15.1 - 13.1 - 2.5)] 1.8 \\ &= 0 \text{ } ^\circ\text{F}\end{aligned}$$

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

(2) Pennsylvania/Maryland State Line.

Note: Station 1 is located upstream of PBAPS and Station 23 is located at the state line.

TABLE

BOAT SURVEY INFORMATION

SURVEY DATE	11/1/82
TIME:	
Survey Start (EST)	1130
State Line (EST)	1300
Survey Finish (EST)	1420
HYDRAULIC DATA:	
Pond Elevation Start (Ft.)	108.53
Pond Elevation Finish (Ft.)	108.49
Natural Flow (24 hour ave., CFS)	5,600
Conowingo Inflow (24 hrs. ave., CFS)	5,500
Conowingo Dam Draft (24 hr. ave., CFS)	6,000
PBAPS Power Output:	
Unit 2: Thermal (MW)	0
Electrical (MW)	-11.03
Unit 3: Thermal (MW)	2925.5
Electrical (MW)	985.4
METEOROLOGICAL DATA:	
Time (EST)	1130
Air Temperature (°F)	53
Dew Point	41
Precipitation (24 hour total, in)	0
Wind Speed (mph)	12
Cloud Over	Overcast
Location:	River Tower
Wind Direction	142°SE

WATER TEMPERATURE (SURVEY)

PBAPS Discharge	°C, (°F)	20.1 (68.2)
Intake	°C, (°F)	12.6 (54.7)
A T	°C, (°F)	7.5 (13.5)
Pond Surface Max.	°C, (°F)	20.2 (68.4)
Min.	°C, (°F)	12.7 (54.9)
Pond Bottom Max.	°C, (°F)	14.8 (58.6)
Min.	°C, (°F)	12.5 (54.5)
No. of C.W. Pumps Operating		3
No. of Cooling Towers Operating		1-2

R/1



MT. JOHNSON
ISLAND

CONOWINGO
DAM

SURFACE

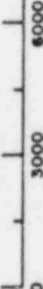
68 PEACH BOTTOM
ATOMIC POWER
STATION

DEPTH 5 FT.

DEPTH 10 FT.

PLANT POWER: 95.5 %

HORIZONTAL SCALE (FT.)



ΔT AT STATE LINE = 0°F

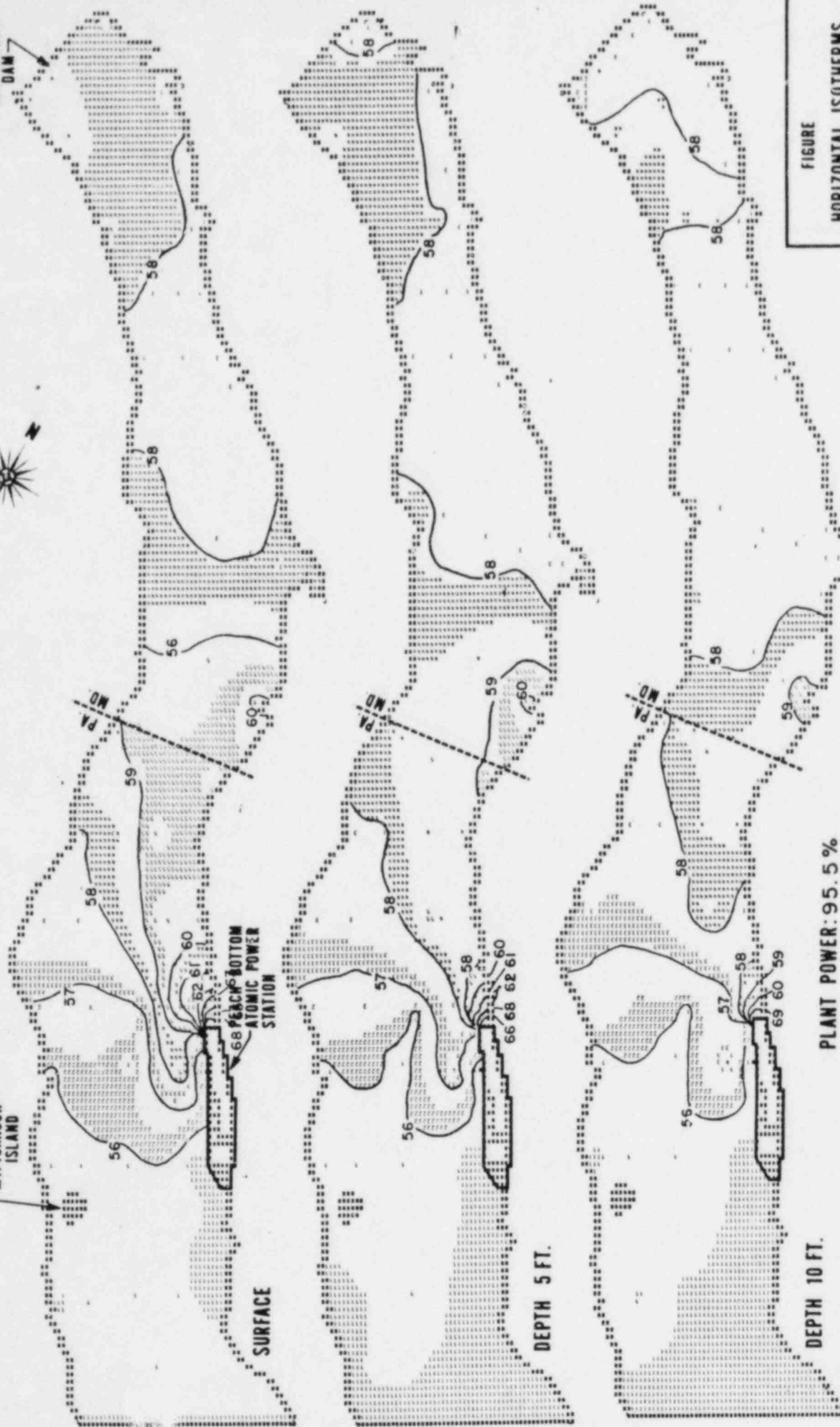
FIGURE

HORIZONTAL ISOTHERMS

CONOWINGO POND

DATE 11-1-83

TIME 1130 - 1420



PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

November 29, 1983

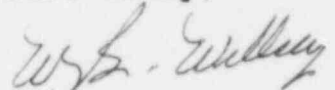
Mr. Thomas A. Ippolito
Operation Reactors Branch 3
Division of Reactor Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Ippolito:

Enclosed is a copy of the Thermal Mapping Report 83-1
covering the isotherm surveys for November 1, 1983.

The information has been completed in compliance with the
reporting requirements set forth in Appendix B to the Peach
Bottom Operating License Environmental Technical Specification
and Bases.

Yours truly,



W. B. Willsey
Director
Environmental Affairs

WBW:htr
Enclosure

cc: Dr. Thomas E. Murley
Regional Administrator
Office of Inspection and Enforcement
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Cool
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