

Peach Bottom Atomic Power Station

Thermal Mapping Report No. 81-5

For

September 21, 1981

For

Thermal Monitoring Requirements

Units No. 2 and 3

Philadelphia Electric Company

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P PDR

SUMMARY

On September 21, 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 September 21, 1981:

Date	:	9/21/81
River Flow (cfs)	:	14,200
Heat Discharged (BTU/hr)	:	7.43×10^8
# of C.W. Pumps Operating:		3
# of Cooling Towers	:	2
Temp Discharge Canal °F ⁽¹⁾	:	73.4
Temp State Line °F ⁽²⁾	:	71.2
Temp Holtwood Dam °F	.	N/A

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

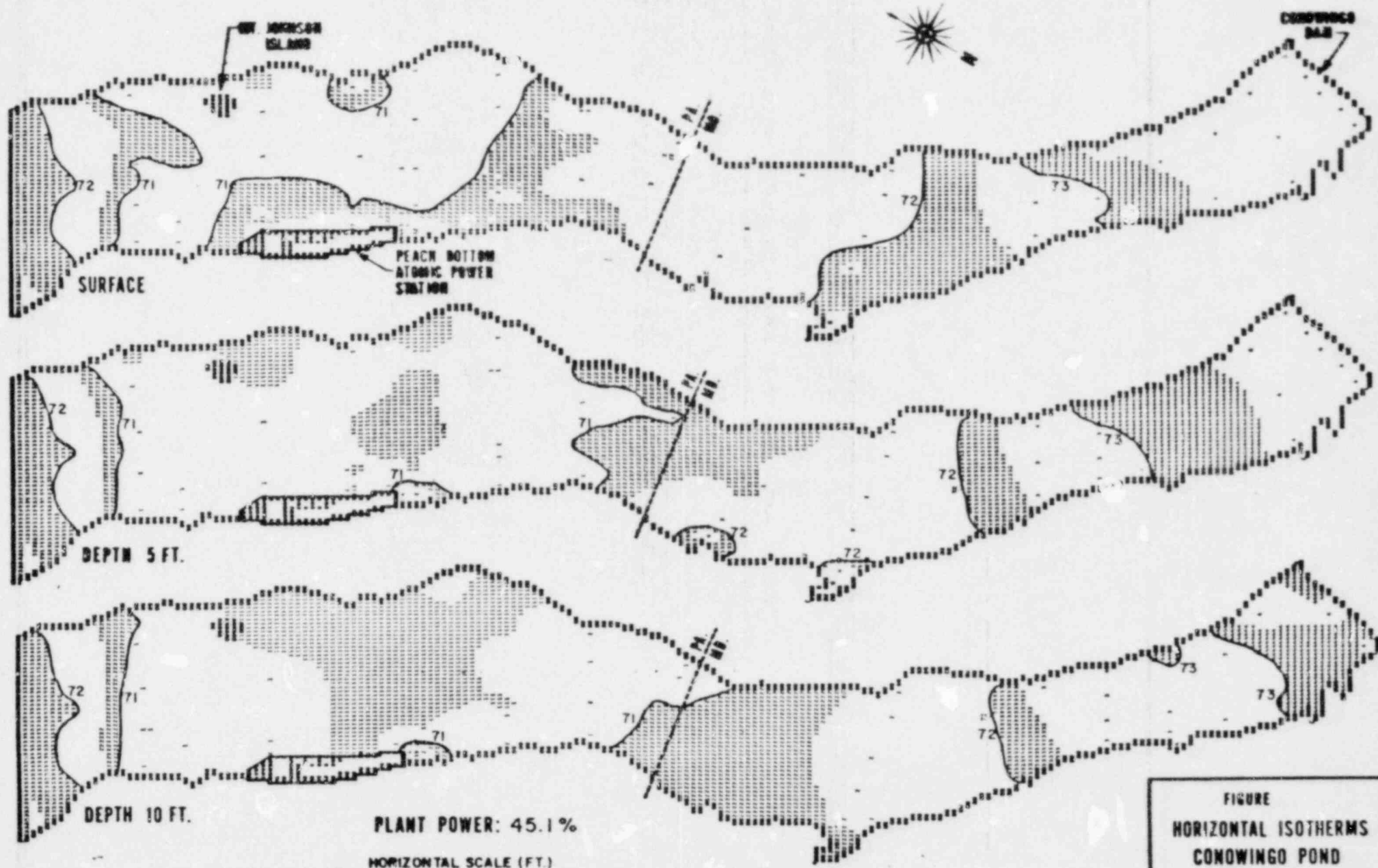
(2) Pennsylvania/Maryland State Line.

TABLE
BOAT SURVEY INFORMATION

SURVEY DATE		9/21/81
TIME:		
Survey Start (EST)		1030
State Line (EST)		1200
Survey Finish (EST)		1430
HYDRAULIC DATA:		
Pond Elevation Start (Ft.)		106.84
Pond Elevation Finish (Ft.)		107.55
Natural Flow (24 hour ave., CFS)		14,200
Conowingo Inflow (24 hrs. ave., CFS)		14,651
Conowingo Dam Draft (24 hr. ave., CFS)		7,575
PRAPS Power Output:		
Unit 2: Thermal (MW)		1,411.8
Electrical (MW)		373.2
Unit 3: Thermal (MW)		0
Electrical (MW)		-10.8
METEOROLOGICAL DATA:		
Time (EST)		1200-1215
Air Temperature (°F)		70
Relative Humidity (%)		42
Precipitation (24 hour total, in)		NONE
Wind Speed (mph)		3
Cloud Over		NONE
Location:		Boat Station #7
Wind Direction		150°

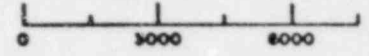
WATER TEMPERATURE (SURVEY)

PRAPS Discharge	°C, (°F)	23.0 (73.4)
Intake	°C, (°F)	21.9 (71.4)
ΔT	°C, (°F)	1.1 (1.98)
Pond Surface Max.	°C, (°F)	23.3 (73.94)
Min.	°C, (°F)	21.1 (69.98)
Pond Bottom Max.	°C, (°F)	23.1 (73.58)
Min.	°C, (°F)	20.7 (69.26)
No. of C.W. Pumps Operating		3
No. of Cooling Towers Operating		2



PLANT POWER: 45.1%

HORIZONTAL SCALE (FT.)



ΔT AT STATE LINE = -5.2 °F

FIGURE
 HORIZONTAL ISOOTHERMS
 CONOWINGO POND
 DATE 9-21-81
 TIME 1030-1430