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Carl A. Sorling
Charles H. Northrup
Philip E. Hanna
George W. Cullen
Thomas L. Cochran
Patrick V. Reilly
Richard E. Hart
William S. Hanley
R. Gerald Barrie
Stephen A. Tague
Michael A. Myers
C. Clark Germano
Garry D. Schwartz

Sorling, Northrup, Hanna, Cullen
and Cochran, Ltd.

Attorneys at Law

820 Illinois Building

Springfield, Illinois 62701

Area Code 217

Telephone 544-1141

Sorling, Catron and Hardin

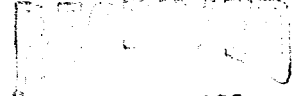
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B. Lacey Catron, Jr.

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John H. Hardin

Attorney



MAY 31 1977

May 26, 1977

FILED IN 15-1010

PCB77-158

Miss Christian L. Moffett
Clerk, Pollution Control Board
309 West Washington Street
Chicago, Illinois 60606

Dear Miss Moffett:

Enclosed are an original and nine copies of Petition of Central Illinois Public Service Company for a Regulatory Hearing contemplated by Rule 203(i)(10)(cc), Chapter 3, Rules and Regulations, Illinois Pollution Control Board. Ten copies of the demonstration (consisting of over 300 pages) are being mailed separately.

Central Illinois Public Service Company's consultant is presently preparing an Addendum to Section 8 of the demonstration, and this will be mailed to the Board and the Agency as soon as it is available.

Yours truly,

Thomas L. Cochran
Thomas L. Cochran

tlc:pmy
enclosures

CENTRAL ILLINOIS PUBLIC SERVICE)	
COMPANY,)	
)	
Petitioner,)	
)	
vs.)	PCB No.
)	
ILLINOIS POLLUTION CONTROL BOARD.)	

PETITION FOR REGULATORY HEARING
 UNDER RULE 203(i)(10)(cc), CHAPTER 3,
 RULES AND REGULATIONS, ILLINOIS
 POLLUTION CONTROL BOARD

Now comes Central Illinois Public Service Company, an Illinois corporation (hereinafter called "CIPS"), and for its petition herein states as follows:

1. Petitioner is an Illinois public utility producing and selling electricity in the State of Illinois.
2. CIPS has a power station located near Coffeen, Illinois, in Montgomery County, Illinois, which has two coal-fired cyclone boilers supplying steam to two turbine generator units with a total capability of 945,000 kilowatts.
3. CIPS constructed and completed in 1965 a lake on property owned by CIPS adjacent to its Coffeen station to provide that steam-electric generating facility with cooling water for its turbine condensers.
4. On or about February 21, 1977, petitioner filed an application to reactivate a wastewater treatment works operating permit in connection with its Coffeen Power Station.

5. Petitioner has compiled data and information sufficient to demonstrate to the Board that its artificial, man-made cooling lake at Coffeen is and will continue to be environmentally acceptable within the meaning and intent of Rule 203(i)(10) if a regulation is adopted establishing petitioner's requested thermal standard.

6. Attached hereto as Exhibit 1 is the introduction to said demonstration. Ten copies of said demonstration are being mailed to the Board under separate cover.

7. Petitioner proposes and requests the Board to establish a specific thermal standard for its Coffeen Lake such that under typical operating conditions, as defined in the aforesaid demonstration, the temperature measured at the outside edge of the mixing zone in Coffeen Lake shall not exceed 98° F during more than 8.2% of the hours in the 12-month period ending with any month and shall at no time exceed 108° F. Attached hereto as Exhibit 2 is a copy of the proposed regulations pertaining to such thermal standard.

8. Since 1965 there has been no evidence developed known to CIPS showing that its Coffeen Lake has not been and is not now environmentally acceptable.

9. The alternatives to the above proposed regulation are the abandonment of the largest power plant in the CIPS system or the installation of cooling towers. The tremendous additional capital and

operating costs resulting from the use of cooling towers are shown
in the CIPS demonstration mentioned above.

CENTRAL ILLINOIS PUBLIC SERVICE
COMPANY

By Sorling, Northrup, Hanna, Cullen
and Cochran, Ltd., its Attorneys

By 
For the Corporation

Sorling, Northrup, Hanna, Cullen
and Cochran, Ltd.
820 Illinois Building
Springfield, Illinois 62701
Telephone: (217) 544-1144

INTRODUCTION

1. Purpose of Demonstration. The Illinois Pollution Control Board has promulgated regulations which establish general thermal water quality standards applicable to all waters of the State. The regulations provide, however, that if a discharger is able to demonstrate satisfactorily to the Board that an artificial cooling lake, although receiving a heated effluent, is environmentally acceptable, the Board may establish specific thermal water quality standards for the artificial cooling lake. The environmentally acceptable evaluation includes examination of the artificial cooling lake's: (1) capability for supporting shellfish, fish and wildlife; (2) capability for recreational uses; and (3) technologically feasible and economically reasonable methods for controlling the thermal component of the discharge's effluent.

The ecological, technological and economic information provided herein demonstrates that Coffeen Lake, an artificial cooling lake, is presently and will continue to be environmentally acceptable. This document is, therefore, intended to be the basis of the Board's establishing the specific thermal standards requested by Central Illinois Public Service (CIPS) Company as the applicable thermal standards for Coffeen Lake.

2. Requested Thermal Standards. Central Illinois Public Service (CIPS) Company requests the Illinois Pollution Control Board

to establish a specific thermal standard for Coffeen Lake such that under typical operating conditions the temperature measured at the outside edge of the mixing zone in Coffeen Lake shall not exceed 98° F during more than 8.2% of the hours in the 12-month period ending with any month and shall at no time exceed 108° F. This request is based on typical actual operating conditions experienced at Coffeen Power Station from 1965 through 1976. The temperature of the condenser cooling water is continuously monitored near the outside edge of the mixing zone and the results are permanently retained.

3. Overview of Organization of Demonstration. Information included in this thermal demonstration is organized to allow the reader to assess: (1) Coffeen Power Station and its Generation History; (2) Coffeen Lake; (3) Rationale for Requested Temperature Limitation; (4) Determination of Ecological Impact; (5) Technical Feasibility and Economic Reasonableness of Coffeen Lake; and (6) Future Wastewater Effluent Controls at Coffeen Power Station.

The information assembled for the purposes of this demonstration encompass all of the available information pertaining to Coffeen Lake since its inception as a cooling lake in 1965 until the present.

4. General Description of Plant. Lake Coffeen was formed by placing a dam across the mouth of McDavid Branch of the East Fork of Shoal Creek at a point approximately three miles directly south of Coffeen, Illinois. The site encompasses about 3,200 acres of land,

of which approximately 1,100 acres is occupied by the horseshoe shaped Coffeen Lake having a spillway elevation of 590 feet.

Planning for Coffeen Power Station began in 1958. Construction started in 1962 and the 350,000 KW Unit No. 1 went into service in 1965. A second unit of 595,000 KW was placed in service in 1972 giving the station a total generating capacity of 945,000 KW. At this rate of 945 Gross Megawatts, a maximum of $4,375 \times 10^6$ BTU/hr of waste heat is dissipated. Both Units 1 and 2 have two circulating water pumps each with a flow rate of 163.2 cfs and 281.8 cfs respectively. After passing through the condenser, the cooling water is discharged into the Lake via a 17 foot diameter discharge pipe which empties into an open flume. The total length from the intake structure to the discharge structure into Coffeen Lake is approximately 4,038 feet.

The circulation path from the discharge structure to the intake structure is about 4.1 miles. The circulation pattern for the cooling water in the lake is in a clockwise direction.

ILLINOIS POLLUTION CONTROL BOARD

_____, 1977

IN THE MATTER OF WATER QUALITY)
AND EFFLUENT STANDARDS AMEND-) PCB No.
MENTS, COOLING LAKES)

ORDER

The following new Regulation is hereby adopted as part of Chapter 3: Water Pollution, and the existing Regulations of Chapter 3 amended in conformity therewith:

Rule 203(i)(10):

(ee)

(1) Coffeen Lake:

The thermal discharge to Coffeen Lake under typical operating conditions shall not result in a temperature measured at the outside edge of the mixing zone in Coffeen Lake to exceed 98° F during more than 8.2% of the hours in the 12-month period ending with any month, and shall at no time exceed 108° F.

Exhibit 2