



Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to Post Office Box 767
Chicago, Illinois 60601

REGULATORY BOARD FILE COPY
April 4, 1977



Mr. Dennis L. Ziemann, Chief
Operating Reactors - Branch 2
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Dresden Station Units 2 and 3
Information Concerning Lake Blowdown
NRC Docket Nos. 50-237 and 50-249

- References (a): D. L. Ziemann letter to R. L. Bolger dated January 11, 1977.
- (b): G. A. Abrell letter to D. L. Ziemann dated February 4, 1977.
- (c): M. S. Turbak letter to D. L. Ziemann dated February 18, 1977.
- (d): M. S. Turbak letter to D. L. Ziemann dated March 10, 1977.

Dear Mr. Ziemann:

Reference (a) listed several questions concerning the proposed change from 50,000 gpm to 500,000 gpm blowdown from Dresden Station Units 2 and 3. We hereby submit the last of the responses to those questions.

Response to Question 1.b.

Environmental monitoring (thermal) of the DesPlaines, Kankakee, and Illinois Rivers began in 1968. Since that time, the station has utilized several different modes of operation, those being:

1. Operation of Unit 1 prior to start-up of Units 2 and 3.
2. Operation of Unit 1, which uses a once-through cooling system, while Units 2 and 3 are operating without the cooling lake (lake bypass); the blowdown is equal to 1,000,000 gpm.

3. Operation of Unit 1 while Units 2 and 3 are using the cooling lake as a trimming device; the augmented blowdown is equal to 500,000 - 1,000,000 gpm.
4. Operation of Unit 1 while Units 2 and 3 use the cooling lake on a closed cycle basis; the blowdown is equal to 50,000 gpm.

Since the study began, we have failed to note any short or long term thermal effects in different trophic components of the Illinois River aquatic ecosystem. The data, recorded since 1968, and contained in the Nalco E.S. Environmental Monitoring Reports (1969 - 1975)*, supports this position.

*Nalco E.S. Environmental Monitoring Reports - Industrial Bio-Test Laboratories, Inc. Preoperational environmental monitoring (thermal) of the Illinois River near Dresden Nuclear Power Station, July, 1969-June, 1970.

Industrial Bio-Test Laboratories, Inc. Environmental monitoring (thermal) of the DesPlaines, Kankakee and Illinois Rivers near the Dresden Nuclear Power Station, January-December, 1972.

Industrial Bio-Test Laboratories, Inc. Environmental monitoring (thermal) of the DesPlaines, Kankakee and Illinois Rivers near the Dresden Nuclear Power Station, January-December, 1973.

Industrial Bio-Test Laboratories, Inc. Environmental monitoring (thermal) of the DesPlaines, Kankakee and Illinois Rivers near the Dresden Nuclear Power Station, January-December, 1974.

Johnson, B. G. and Beer, L. P., 1972. Environmental monitoring (thermal) of the DesPlaines, Kankakee and Illinois Rivers near Dresden Nuclear Power Station, Industrial Bio-Test Laboratories, Inc.

Nalco Environmental Sciences. Environmental monitoring (thermal) of the DesPlaines, Kankakee and Illinois Rivers near the Dresden Nuclear Power Station, January-December, 1975.

Response to Question 1.C.(1)

Values for Station Intake Velocities at the Trash Bars When Blowdown is 500,000 gpm from Units 2 and 3 is as follows:

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Unit 1

@ ≈ 200,000 gpm intake flow

| <u>Elevation</u> | <u>Velocity @ Bar Racks</u> (ft/sec.) |
|------------------|--|
| 503' Low W.L. | 0.9 |
| 505' Norm. W.L. | 0.8 |
| 508' High W.L. | 0.7 |

Units 2 & 3

@ 1,060,000 gpm intake flow

| <u>Elevation</u> | <u>Velocity @ Bar Racks</u> (ft/sec.) |
|------------------|--|
| 503' Low W.L. | 1.0 |
| 505' Norm. W.L. | 0.9 |
| 508' High W.L. | 0.9 |

Response to Question 1.C.(2)

A detailed account and description of the impingement and entrainment effects appears in Sections 5.2 and 5.1 respectively of the attached Dresden Station Cooling Water Intake Impact Report. The summary of this report as it appears in Section 6.0 concludes that the plant intake as designed and operated has no detectable adverse effects on the fish population in the DesPlaines or Kankakee Rivers.

One (1) signed original and 39 copies of this letter are provided for your use.

Very truly yours,



M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors