

REGULATORY OPERATIONS, REGION III

A. RO Inspection Report No. 050-237/72-05
050-249/72-03

Transmittal Date : November 30, 1972

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C. Incident Notification From: _____
(Licensee & Docket No. (or License No.))

Transmittal Date : _____

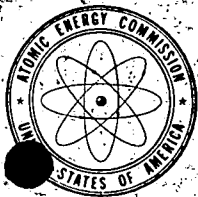
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UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

TELEPHONE
(312) 858-2660

November 30, 1972

Commonwealth Edison Company
ATTN: Mr. Byron Lee, Jr.
Assistant to the President
P. O. Box 767
Chicago, Illinois 60690

Docket No. 50-237
Docket No. 50-249

Gentlemen:

This refers to the inspection conducted by Mr. Dance on October 13 and 26, 1972, of operations at Dresden Units 2 and 3, authorized by AEC Operating Licenses No. DPR-19 and No. DPR-25, and to the discussion of our findings held by the inspector with Messrs. Diederich, Goedjen, and Burke of your staff at the conclusion of the inspection. A copy of our report of this inspection is enclosed.

Areas examined during the inspection are described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with plant personnel, and observations by the inspector.

No items of noncompliance with AEC requirements were identified within the scope of this inspection.

In accordance with Section 2.790 of the AEC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the AEC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. If such an application is submitted, it must identify the basis for which information is claimed to be proprietary. The application should be prepared so that proprietary information identified is contained in a separate part of the document, since the application will also be placed in the Public Document Room. If we do not receive an application to withhold information, or are not otherwise contacted within the specified period, the report will be placed in the Public Document Room with a copy of this letter.

1084.2

November 30, 1972

Unless you wish to make application to withhold information, no reply to this letter is necessary; however, should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

Boyce H. Grier
Regional Director

Enclosure:

RO Inspection Report No. 050-237/72-05
and No. 050-249/72-05

cc: W. P. Worden, Plant Superintendent - w/o encl.

bcc: RO:Chief, RT&OB
RO:Chief, RCB
RO:HQ (4)
Licensing (4)
DR Central Files
PDR
Local PDR
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U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

RO Inspection Report No. 050-237/72-05
RO Inspection Report No. 050-249/72-05

Licensee: Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dresden Units 2 and 3
Morris, Illinois

License Nos. DPR-19
and DPR-25
Category: C

Type of Licensee: BWR, 809 Mwe

Type of Inspection: Special - Announced

Dates of Inspection: October 13 and 26, 1972

Dates of Previous Inspection: October 3 - 6 and 10, 1972

Principal Inspector: H. C. Dance

H. C. Dance

11/24/72
(Date)

Accompanying Inspector: L. L. Beratan

Other Accompanying Personnel: None

Reviewed By: *G. Fiorelli*
G. Fiorelli, Chief
Reactor Operations Branch

11/24/72
(Date)

1084.4

SUMMARY OF FINDINGS

Enforcement Action: None

Licensee Action on Previously Identified Enforcement Action: None

Unusual Occurrences

A 50-foot section of the earth dike for the 1275 acre Unit 2/3 cooling lake failed on October 13, 1972. Flooding was limited to the immediate area with runoff to the Kankakee River. No release of radioactivity was involved. The cooling lake was installed for environmental considerations and serves no nuclear safety function.

Other Significant Findings: None

Management Interview

- A. On October 13, 1972, the inspector met with Mr. Diederich and discussed the following:
1. In addition to notifying the appropriate local, state, and federal agencies following the dike failure, the station took and is continuing action to reduce the thermal input to the river.
 2. The lake will not be refilled until an engineering evaluation has been completed.
- B. On October 26, 1972, inspectors Beratan and Dance met with Messrs. Goedjen and Zar, who provided assurance that a thorough engineering evaluation and repair of the dike was being conducted. Mr. Goedjen stated that the surveillance plan for the lake was being formulated and would be made available to the inspector.
- C. On October 26, inspectors Beratan and Dance also met with Mr. Burke at the site. Mr. Burke stated that additional borings were being taken and evaluated. Corrective action will be taken as required to assure the dike integrity.

REPORT DETAILS

1. Personnel Contacted

Commonwealth Edison Company (CE)

G. Diederich, Supervisor, Technical Staff
M. Goedjen, Chief Mechanical and Structural Engineer
L. Burke, Construction Representative
S. Mlady, Construction Engineer

Sargent and Lundy, Engineers

M. Zar, Manager, Structural Engineering

2. Site Inspection on October 13, 1972

- a. Review of Shift Engineer's Log of October 13 indicated that the station's initial notification of the event was by telephone at 4:35 a.m., from the Joliet Load Dispatcher and a local resident. Upon verification, the immediate response included the following actions. Unit 2/3 cooling water effluent gate to the river was fully opened, lift pumps to the lake were shut down, and lake effluent gates fully opened. Notification was made to the Will County Sheriff Department, Joliet Load Dispatcher, and to station management. Subsequent notification of state and federal agencies was reported to have been made by the corporate office in accordance with the Generating Stations Emergency Plan.

- b. Station records indicated the following:

<u>Time</u>	<u>Lake Elevation (ft)</u>	<u>Unit 2 River Inlet Temp, °F</u>	<u>Unit 2/3 River Effluent Temp, °F</u>
12:01 am	524	62	68
4:45 am	522	62	68
7:00 am	---	65	76
9:00 am	520	74	86
11:00 am	---	71	87
11:30 am	---	70	86
1:00 pm	517.5	--	--

- c. Unit 2 operation had been reduced from 600 Mwe to 460 Mwe by 12:00 pm to minimize cooling water heated discharges to the Illinois River. Subsequently it was decided to proceed with the shutdown of Unit 2 for planned maintenance. Load drop was initiated at 1:15 pm. Unit 1 was not operating at the time of the above incident and Unit 3 was operating at 790 Mwe.
- d. Rock was observed being dumped on each side of the dike failure to prevent additional washout. This rock was later removed in the dike repair.
- e. The licensee's analysis of a sample taken of the lake water at the dike failure point confirmed that the lake water did not contain any radioactivity above background. Later telephone information from the licensee stated that three other samples, lake inlet, lake outlet, and Unit 2/3 effluent, also indicated background.
- f. One home in the vicinity of the break was flooded to about eight inches depth and required evacuation.
- g. The bulk of flood water from the dike crossed County Line Road and flowed through an open field to the Kankakee River. Some flow reached the Kankakee River via the west side of County Line Road.

3. Corporate and Site Inspection on October 26, 1972

Review of the dike repair plans and the CE engineering evaluation was performed by our RO Technical Assistance Branch representative. His comments are included as Appendix A.

Attachment:
Appendix A

DIKE FAILURE OF THE COOLING WATER POND - DRESDEN STATION - COMMONWEALTH EDISON COMPANY, DOCKET NOS. 50-10, 50-237, AND 50-249

Hugh Dance, principal inspector, RO:III, and I went to the Engineering Department of Commonwealth Edison Company, and met with Mr. Merle H. Goedjen, Chief Mechanical and Structural Engineer, and his consultant, Mr. Max Zar, Partner, Sargent & Lundy, Engineers. The purpose of this meeting was to discuss the Dresden station dike failure and to determine the cause and the proposed fix. We also discussed the proposed long term surveillance program to prevent future failure of the dikes and to minimize damage to life, property and the environment. We later made a site visit to see the extent of the present failure and the repair effort.

Mr. Zar showed slides of the failed section of the dike taken from the air. The breach in the dike occurred over a length of approximately 100 feet along the north side of the lake paralleling the Kankakee River and opposite Bardwell Island, see fig. 1. Upon reviewing the aerial photograph of the plant site it was noted that the failed section of the dike crossed over an old filled stream bed or drainage ditch which had eroded the limestone bedrock to a considerable depth below the adjacent bedrock level. This old channel had filled with sand, gravel and soil over the years. The original exploration for the dike failed to reveal this anomaly in the bedrock. A boat slip for a proposed marina had been dredged into the river bank opposite the failed section of the dike. The deeply bedded sand and gravel layer in the eroded channel provide the seepage path for the water in the lake. As the fines were washed out and the permeability increased, the foundation soils became less stable and resulted in the dike failure.

The repair consists of removing all permeable soils from the failed section and beyond, down to bedrock and replacing it with an impermeable clay soil fill. The breached section of the dike is being reconstructed using a selected, test controlled compacted material. Particular attention is being given to keying the old and new dike sections together. Additional borings are being made along the dikes to make certain that all permeable soil layers have been intercepted by the clay cut off wall which is part of the dike design.

To insure that there is a positive cut off along the north dike a sheet pile cut off wall is being driven behind the inside face through the top of the dike into the bedrock. It is estimated that the total length of the sheet pile wall will be approximately 4000 feet. This length may be modified as additional boring information becomes available.

Mr. Goedjen was asked what effect failure of the dike in other areas would have on the Midwest Fuel Facility plant. It was pointed out that the lake elevation is 522 feet and the plant grade at Midwest is 530 feet, therefore, failure of the dikes around the lake would present no problem to the Midwest Fuel Facility plant.

Mr. Goedjen was asked what the surveillance program for the dikes would be during the operating life of the plant. His reply was that a surveillance program had been developed but was being reworked in light of the recent failure.

While at the plant site Mr. Leo Burke, Construction Manager, stated that numerous new borings were being taken to be certain that all permeable soil layers are intercepted by the cut off wall. It was observed at the site that the limestone bedrock is overlain by a sandstone layer of variable thickness and that in many places the sheet pile wall will fetch up in the sandstone rather than in the limestone. Pressure grouting may be required to provide positive cut off in some locations.

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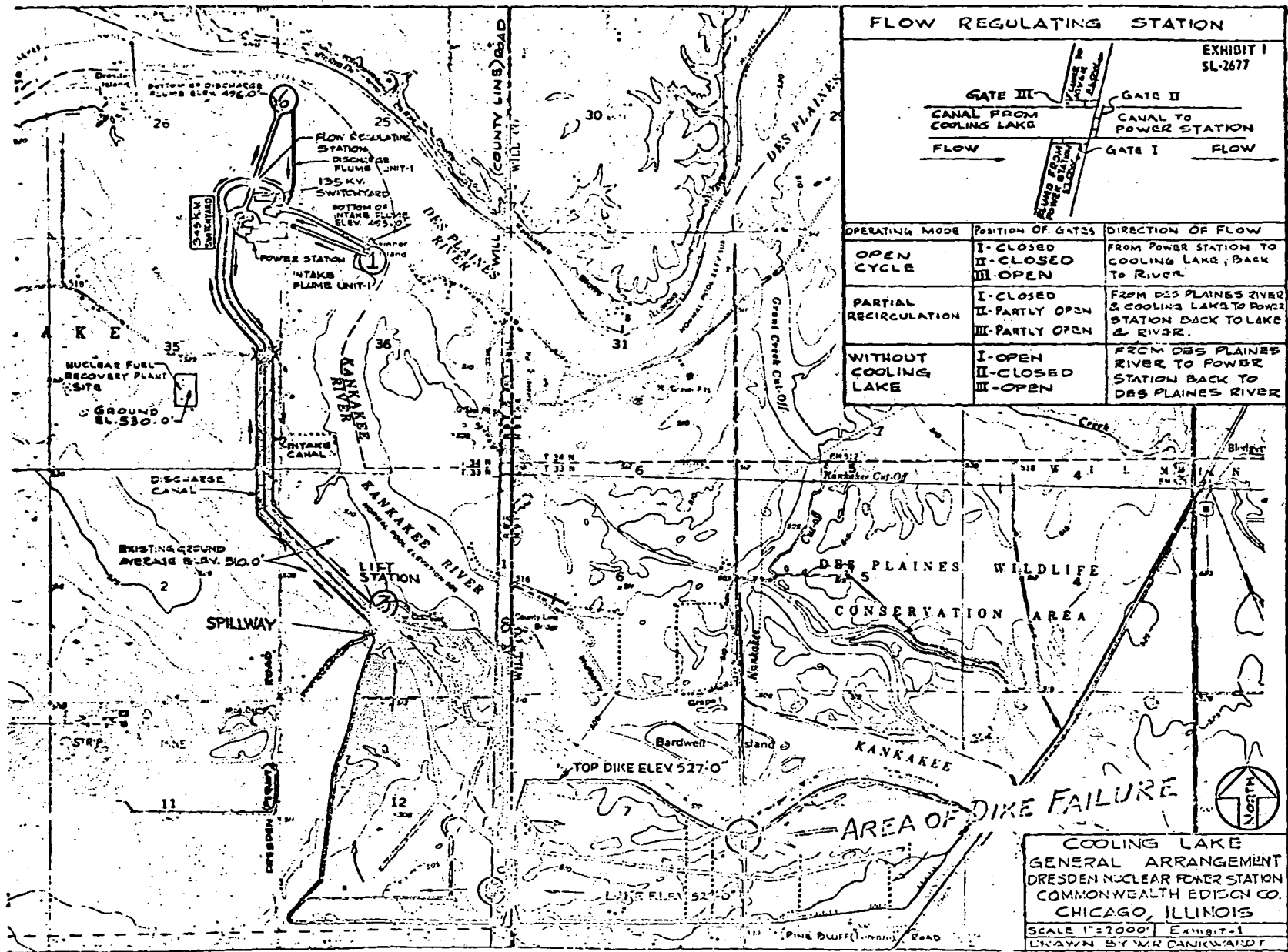


Fig. 1

JAN 10 1973

D. L. Ziemann, Chief, Operating Reactors Branch #2, L

COMMONWEALTH EDISON COMPANY (DRESDEN 2 & 3) - DOCKET NOS. 50-237
AND 50-249

The enclosed report of inspections of the subject facilities on October 3-6 and 10, 1972, is forwarded for information. Five items of noncompliance with Technical Specification requirements were identified during the inspection. Enforcement action with respect to these items is under review by RO Headquarters.

J. G. Keppler
J. G. Keppler, Chief,
Reactor Testing and Operations
Branch
Directorate of Regulatory Operations

Enclosure:
RO Inspection Report Nos.
050-249/72-04 and
050-237/72-04

- cc: L. R. Rogers, RS
- R. S. Boyd, L (2)
- R. C. DeYoung, L (2)
- D. J. Skovholt, L (2)
- D. R. Muller, L
- H. R. Denton, L (2)
- R. L. Tedesco, L
- R. H. Vollmer, L
- J. M. Hendrie, L
- R. W. Houston, L
- P. A. Morris, RO, w/o encl.
- H. D. Thornburg, RO, w/o encl.
- R. H. Engelken, RO, w/o encl.
- J. P. O'Reilly, RO:I
- J. G. Davis, RO:II
- B. H. Grier, RO:III
- J. W. Flora, RO:IV
- R. W. Smith, RO:V

50-237/249 insp

OFFICE ▶	G. Fiorelli, RO:III, w/o encl. RO			
SURNAME ▶	DR. Central Files	RJM	JGKep	
DATE ▶		1/8/73		