

REGULATORY BOARD FILE COPY

AUGUST 29 1980

Docket File
50-315

Docket Nos. 50-315
and 50-316

Mr. John Dolan, Vice President
Indiana and Michigan Electric Company
Post Office Box 18
Bowling Green Station
New York, New York 10004

Dear Mr. Dolan:

The Commission has issued the enclosed Amendment No. ⁴⁰ to Facility Operating License No. DPR-58 and Amendment No. ²³ to Facility Operating License No. DPR-74, respectively. The amendments consist of changes to the Technical Specifications in response to your letters dated April 6, 1979 (as supplemented September 13, 1979), November 2, 1979 and April 3, 1980.

These amendments revise the Appendix A Technical Specifications to increase the minimum water temperature of the Unit No. 1 refueling water storage tank to 70°F and revise the Appendix B Technical Specifications to administratively eliminate the requirement for further thermal discharge plume studies and to administratively revise the scour studies to reflect the Unit No. 1 design modification proposed to repair damage caused by the high velocity plant discharges.

In accordance with the provisions of Environmental Technical Specifications Section 4.1.1.4 the NRC staff has reviewed and hereby approves the corrective action you have proposed in your April 6, 1979 letter as supplemented on September 13, 1979, to correct the deficiencies found in the Unit No. 1 scour bed protection. As required by ETS Section 4.1.1.4, as revised, you are to conduct studies to verify the adequacy of this modified scour bed and report the results in the Annual Operating Report. At least one full year of operating with the modified scour bed shall be covered in these studies, as is considered with ETS Section 4.1.1.4, as revised. No further approval is required to adopt this modification to the Unit No. 2 scour protection.

8009240078

CP
ED

OFFICE						
SURNAME						
DATE						

Mr. John Dolan
Indiana and Michigan Electric Company - 2 -

Copies of the Safety Evaluation and Environmental Impact Appraisal
and the Notice of Issuance and Negative Declaration are also enclosed.

Sincerely,

Original Signed by
Steen A. Varga for

Steen A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosures:

1. Amendment No. ⁴⁰ to DPR-58
2. Amendment No. ²³ to DPR-74
3. Safety Evaluation and Environmental
Impact Appraisal
4. Notice of Issuance and
Negative Declaration

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my 8/29/80
*SEE PREVIOUS YELLOW FOR CONCURRENCES

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~~01/11/80~~
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01/18/80

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SURNAME	SMiner:jb	CSParish	SAVarga	INNovak	BLACK	WBBivins
DATE	07/21/80	07/17/80	8/18/80	8/14/80	8/22/80	8/12/80

Docket Nos. 50-315
and 50-316

Mr. John Dolan, Vice President
Indiana and Michigan Electric Company
Post Office Box 18
Bowling Green Station
New York, New York 10004

Dear Mr. Dolan:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-58 and Amendment No. to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your letters dated April 6, 1979 (as supplemented September 13, 1979) and November 2, 1979.

These amendments revise the Appendix A Technical Specifications to increase the minimum water temperature of the Unit No. 1 refueling water storage tank to 70°F and revise the Appendix B Technical Specifications to administratively eliminate the requirement for further thermal discharge plume studies during the winter and spring periods and to administratively revise the scour studies to reflect the Unit No. 1 design modification proposed to repair damage caused by the high velocity plant discharges.

In accordance with the provisions of Environmental Technical Specifications Section 4.1.1.4 the NRC staff has reviewed and hereby approves the corrective action you have proposed in your April 6, 1979 letter as supplemented on September 13, 1979, to correct the deficiencies found in the Unit No. 1 scour bed protection. As required by ETS Section 4.1.1.4, as revised, you are to conduct studies to verify the adequacy of this modified scour bed and report the results in the Annual Operating Report. At least one full year of operating with the modified scour bed shall be covered in these studies, as is considered with ETS Section 4.1.1.4, as revised. No further approval is required to adopt this modification to the Unit No. 2 scour protection.

7/1

OFFICE
SURNAME
DATE

Mr. John Dolan,
Indiana and Michigan Electric Company - 2 -

Copies of the Safety Evaluation and Environmental Impact Appraisal and
the Notice of Issuance and Negative Declaration are also enclosed.

Sincerely,

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:

1. Amendment No. to DPR-58
2. Amendment No. to DPR-74
3. Safety Evaluation and Environmental Impact Appraisal
4. Notice of Issuance and Negative Declaration

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Mr. John Dolan

- 2 -

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:

1. Amendment No. to DPR-58
2. Amendment No. to DPR-74
3. Safety Evaluation
4. Notice of Issuance

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 29, 1980

Docket Nos. 50-315
and 50-316

Mr. John Dolan, Vice President
Indiana and Michigan Electric Company
Post Office Box 18
Bowling Green Station
New York, New York 10004

Dear Mr. Dolan:

The Commission has issued the enclosed Amendment No. 40 to Facility Operating License No. DPR-58 and Amendment No. 23 to Facility Operating License No. DPR-74, respectively. The amendments consist of changes to the Technical Specifications in response to your letters dated April 6, 1979 (as supplemented September 13, 1979), November 2, 1979 and April 3, 1980.

These amendments revise the Appendix A Technical Specifications to increase the minimum water temperature of the Unit No. 1 refueling water storage tank to 70°F and revise the Appendix B Technical Specifications to administratively eliminate the requirement for further thermal discharge plume studies and to administratively revise the scour studies to reflect the Unit No. 1 design modification proposed to repair damage caused by the high velocity plant discharges.

In accordance with the provisions of Environmental Technical Specifications Section 4.1.1.4 the NRC staff has reviewed and hereby approves the corrective action you have proposed in your April 6, 1979 letter as supplemented on September 13, 1979, to correct the deficiencies found in the Unit No. 1 scour bed protection. As required by ETS Section 4.1.1.4, as revised, you are to conduct studies to verify the adequacy of this modified scour bed and report the results in the Annual Operating Report. At least one full year of operating with the modified scour bed shall be covered in these studies, as is considered with ETS Section 4.1.1.4, as revised. No further approval is required to adopt this modification to the Unit No. 2 scour protection.

8009240084

Mr. John Dolan
Indiana and Michigan Electric Company - 2 -

August 29, 1980

Copies of the Safety Evaluation and Environmental Impact Appraisal
and the Notice of Issuance and Negative Declaration are also enclosed.

Sincerely,

for Joseph D. Hughes
Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosures:

1. Amendment No. 40 to DPR-58
2. Amendment No. 23 to DPR-74
3. Safety Evaluation and Environmental
Impact Appraisal
4. Notice of Issuance and
Negative Declaration

cc: w/enclosures
See next page

Mr. John Dolan
Indiana and Michigan Electric Company

- 3 -

August 29, 1980

cc: Mr. Robert W. Jurgensen
Chief Nuclear Engineer
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Mr. Wade Schuler, Supervisor
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Mr. William R. Rustem (2)
Office of the Governor
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Lansing, Michigan 48913

Honorable James Benenek, Mayor
City of Bridgman, Michigan 49106

Director, Technical Assessment Division
Office of Radiation Programs (AW-459)
U. S. Environmental Protection Agency
Crystal Mall #2
Arlington, Virginia 20460

U. S. Environmental Protection Agency
Federal Activities Branch
Region V Office
ATTN: EIS COORDINATOR
230 South Dearborn Street
Chicago, Illinois 60604

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William J. Scanlon, Esquire
2034 Pauline Boulevard
Ann Arbor, Michigan 48103



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

INDIANA AND MICHIGAN ELECTRIC COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 40
License No. DPR-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana and Michigan Electric Company (the licensee) dated April 6, 1979 (as supplemented on September 13, 1979), and November 2, 1979, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-58 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 40, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

for Joseph D. Neighbors
Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 29, 1980

ATTACHMENT TO LICENSE AMENDMENT NO.40

FACILITY OPERATING LICENSE NO. DPR-58

DOCKET NO. 50-315

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided for document completeness.

Pages

3/4 1-16
3/4 1-17
3/4 5-10
B3/4 5-3 (added)

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be OPERABLE:

- a. A boric acid storage system and associated heat tracing with:
 1. A minimum contained volume of 835 gallons,
 2. Between 20,000 and 22,500 ppm of boron, and
 3. A minimum solution temperature of 145°F.
- b. The refueling water storage tank with:
 1. A minimum contained volume of 9690 gallons,
 2. A minimum boron concentration of 1950 ppm, and
 3. A minimum solution temperature of 70°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water source OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one borated water source is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 1. Verifying the boron concentration of the water,
 2. Verifying the water level of the tank, and
 3. Verifying the boric acid storage tank solution temperature when it is the source of borated water.
- b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water and the outside air temperature is < 70°F.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.2.8 Each of the following borated water sources shall be OPERABLE:

- a. A boric acid storage system and associated heat tracing with:
 1. A minimum contained volume of 5170 gallons,
 2. Between 20,000 and 22,500 ppm of boron, and
 3. A minimum solution temperature of 145°F.
- b. The refueling water storage tank with:
 1. A minimum contained volume of 350,000 gallons of water,
 2. A minimum boron concentration of 1950 ppm, and
 3. A minimum solution temperature of 70°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With the boric acid storage system inoperable, restore the storage system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to at least 1% $\Delta k/k$ at 200°F; restore the boric acid storage system to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.
- b. With the refueling water storage tank inoperable, restore the tank to OPERABLE status within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.1.2.8 Each borated water source shall be demonstrated OPERABLE:

REACTIVITY CONTROL SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- a. At least once per 7 days by:
 - 1. Verifying the boron concentration in each water source,
 - 2. Verifying the water level of each water source, and
 - 3. Verifying the boric acid storage system solution temperature.
- b. At least once per 24 hours by verifying the RWST temperature when the outside air temperature is less than 70°F.

REACTIVITY CONTROL SYSTEMS

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

GROUP HEIGHT

LIMITING CONDITION FOR OPERATION

3.1.3.1 All full length (shutdown and control) rods which are inserted in the core, shall be OPERABLE and positioned within ± 12 steps (indicated position) of their bank demand position.

APPLICABILITY: MODES 1* and 2*

ACTION:

- a. With one or more full length rods inoperable due to being immovable as a result of excessive friction or mechanical interference or known to be untrippable, determine that the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is satisfied within 1 hour and be in HOT STANDBY within 6 hours.
- b. With more than one full length rod inoperable or misaligned from the bank demand position by more than ± 12 steps (indicated position), be in HOT STANDBY within 6 hours.
- c. With one full length rod inoperable or misaligned from its group step counter demand height by more than ± 12 steps (indicated position), POWER OPERATION may continue provided that within one hour either:
 1. The rod is restored to OPERABLE status within the above alignment requirements, or
 2. The rod is declared inoperable and the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is satisfied. POWER OPERATION may then continue provided that:
 - a) An analysis of the potential ejected rod worth is performed within 3 days and the rod worth is determined to be $\leq 0.75\% \Delta k$ at zero power and $\leq 0.38\% \Delta k$ at RATED THERMAL POWER for the remainder of the fuel cycle, and
 - b) The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is determined at least once per 12 hours, and

*See Special Test Exceptions 3:10.2 and 3.10.4.

EMERGENCY CORE COOLING SYSTEMS

HEAT TRACING

LIMITING CONDITION FOR OPERATION

3.5.4.2 At least two independent channels of heat tracing shall be OPERABLE for the boron injection tank and for the heat traced portions of the associated flow paths.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With only one channel of heat tracing on either the boron injection tank or on the heat traced portion of an associated flow path OPERABLE, operation may continue for up to 30 days provided the tank and flow path temperatures are verified to be $\geq 145^{\circ}\text{F}$ at least once per 8 hours; otherwise, be in HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.4.2 Each heat tracing channel for the boron injection tank and associated flow path shall be demonstrated OPERABLE:

- a. At least once per 31 days by energizing each heat tracing channel, and
- b. At least once per 24 hours by verifying the tank and flow path temperatures to be $\geq 145^{\circ}\text{F}$. The tank temperature shall be determined by measurement. The flow path temperature shall be determined by either measurement or recirculation flow until establishment of equilibrium temperatures within the tank.

EMERGENCY CORE COOLING SYSTEMS

REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.5.5 The refueling water storage tank (RWST) shall be OPERABLE with:

- a. A minimum contained volume of 350,000 gallons of borated water.
- b. A minimum boron concentration of 1950 ppm, and
- c. A minimum water temperature of 70°F.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the refueling water storage tank inoperable, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 The RWST shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 1. Verifying the water level in the tank, and
 2. Verifying the boron concentration of the water.
- b. At least once per 24 hours by verifying the RWST temperature when the outside air temperature is less than 70°F.

EMERGENCY CORE COOLING SYSTEMS

BASES

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 8.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The ECCS analyses to determine F_0 limits in Specifications 3.2.2 and 3.2.6 assumed a RWST water temperature of 70°F. The temperature value of the RWST water determines that of the spray water initially delivered to the containment following LOCA. It is one of the factors which determines the containment back-pressure in the ECCS analyses, performed in accordance with the provisions of 10 CFR 50.46 and Appendix K to 10 CFR 50.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

INDIANA AND MICHIGAN ELECTRIC COMPANY

DOCKET No. 50-316

DONALD C. COOK NUCLEAR PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 23
License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana and Michigan Electric Company (the licensee) dated April 6, 1979 (as supplemented September 13, 1979, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-74 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 23, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

for Joseph E. Neighlors
Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 29, 1980

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NO. DPR-58

AMENDMENT NO. 23 TO FACILITY OPERATING LICENSE NO. DPR-74

DOCKET NOS. 50-315 AND 50-316

Revise Appendix A as follows:

Remove Pages

Insert Pages

ETS 4.1-1
ETS 4.1-2
ETS 4.1-3
ETS 4.1-4
ETS 4.1-5
ETS 4.1-6
ETS 4.1-8
ETS 4.1-9

4 ENVIRONMENTAL SURVEILLANCE

4.1 ECOLOGICAL SURVEILLANCE

Applicability and Objective of Environmental Surveillance

The nonradiological environmental monitoring program applies to the monitoring of lake water temperature distribution, Plant discharge of chemicals, lake bottom scouring, beach erosion, biological variables in Lake Michigan and on the Plant site itself, to the specifications for onsite and offsite restoration and maintenance of transmission line rights-of-way.

The objectives of the program are to determine (1) the relationship between the thermal plant discharge and the physical and biological characteristics of the lake water masses in the vicinity of the Plant site; (2) the aquatic ecology of this portion of the lake (South-eastern corner of Lake Michigan from the St. Joseph River to Trail Creek in Michigan City, Indiana); (3) the effects of the operation of the Donald C. Cook Nuclear Plant on the physical, chemical, and biological variables of this portion of Lake Michigan and the Plant site including the beach; and (4) to minimize adverse impacts on terrestrial and aquatic biota within and adjacent to transmission rights-of-way.

4.1.1 ABIOTIC

4.1.1.1 Biocides

A program for measuring or calculating the chlorine residual at the point of discharge to the lake is given in Specification 2.2.1.

4.1.1.2 Thermal Characteristics

This section has been deleted.

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ETS 4.1-3

Amendment No. 40, Unit No. 1
Amendment No. 23, Unit No. 2

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Basis

The beach erosion monitoring program will attempt to verify the contention that ice building mechanisms will operate to repair any ice-melting caused by the discharge plume. In addition, monitoring enables determination of beach and near shore erosion direct effects of Plant discharges and direct or indirect effects of scour bed or protective pilings placed on shore or in the lake.

4.1.1.4 Scour Studies

Objectives

The scour monitoring program is intended to determine the adequacy of the scour bed bottom protection and to ensure that significant long- or short-term scour does not result from the high velocity Plant discharge or from sediment displacement, by along-shore currents, in areas adjacent to the scour bed.

Specification

A sounding study shall be conducted at 100 foot intervals from a point near the beach approximately 300 feet south of the discharge scour bed to a point 300 feet north of the extremity of the same scour bed. Sounding lines shall run parallel to the actual pipelines, essentially east-west, from the near shore, terminating about 400 feet west of the intake cribs. Readings shall be taken by a continuous recording fathometer (or instruments of equal or better accuracy) whose accuracy shall be at least to within a foot.

The sounding grid shall comprise a rectangle approximately 1,400 feet wide by 2,400 feet long, or shall encompass an area, larger or smaller, deemed necessary by the licensee to meet the objectives stated above. Baseline surveys shall be conducted following issuance of an operating license, but prior to testing of cooling water circulating pumps for Unit No. 1; thereafter a survey shall be run at approximately 6-month intervals until at least 1 full year following the startup of Unit No. 2 and for at least one full year following modifications or major repair of the scour bed protection.

Studies conducted to verify the adequacy of the scour bed (or modifications thereto) in preventing bottom scouring by the high velocity Plant discharge shall also describe the effects of the scour

bed on any movement, or displacement, of material moved by alongshore currents in the vicinity and to the south and north of the scour beds. Results of all monitoring or special studies necessary for model verification and demonstration of the effect of scour beds on along shore transport of sediment shall be reported in the annual Operating Reports.

If bottom scouring or erosion resulting from the high velocity discharge and/or implacement of the protective scour bed occurs, and if judged to be significant by the staff, 1) the licensee shall submit plans for corrective action to the staff for approval and 2) implementation of any approved action shall be met by the time schedule specified.

Should the scour study indicate loss of function of the scour bed, the licensee would initiate an Engineering investigation to repair the bottom protection in an appropriate fashion. The licensee shall submit plans for corrective action to the Office of Nuclear Reactor Regulation for review and approval.

A schematic view of the scour study area is shown in Figure 4.1.1.4-1.

Reporting Requirements

As specified above and in Section 5.4.

Basis

After extensive study, a jet diffuser system was developed, with a jet velocity of 13-ft/sec selected on the basis of experimentation with a hydraulic model, to reduce the temperatures in the thermal-affected zone and to minimize the exposure of entrained organisms to heated lake water. Because of the relatively high velocity of the cooling water at the exit ports of the discharge structure, an extensive scour protective bed has been installed. The subject scour studies are to verify that there are no scour problems resulting from Plant discharges or implacement of the riprap scour bed in the lake.

4.1.1.5 Groundwater

Objective

To monitor the movement of chemicals introduced into the groundwater from the onsite absorption field. The hydraulic properties of groundwater such as direction and velocity of flow will also be monitored.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION AND ENVIRONMENTAL IMPACT APPRAISAL

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NO. DPR-58

AND AMENDMENT NO. 23 TO FACILITY OPERATING LICENSE NO. DPR-74

INDIANA AND MICHIGAN ELECTRIC COMPANY

DONALD C. COOK NUCLEAR PLANT UNIT NOS. 1 AND 2

DOCKET NOS. 50-315 AND 50-316

INTRODUCTION

By letter dated April 6, 1979, as supplemented on September 13, 1979, the Indiana and Michigan Electric Company (the licensee) proposed two environmental related changes for the D. C. Cook Nuclear Plant. One proposal was to extend a thermal plume study period beyond the allowed time window (April 15 to May 15) on into June. The second proposal dealt with a modification of the Unit No. 1 discharge scour bed protection to correct a deficiency.

By letter dated November 2, 1979, the licensee proposed a revision to the Appendix A Technical Specifications for Unit No. 1 to increase the minimum water temperature of the refueling water storage tank (RWST) to 70°F to be consistent with the Unit No. 1 reload safety analysis performed by Exxon.

By letter dated April 3, 1980 the licensee provided a summary report of the thermal plume monitoring effort completed to date, a comparison of the measurements with model predictions and a justification for not requiring any further measurements. In addition a copy of the facility's NPDES Permit (No. MI0005827) was attached.

Some modifications to the licensee's proposals were necessary to meet our requirements. These modifications were discussed with and agreed to by the licensee.

DISCUSSION AND EVALUATION

SAFETY RELATED PROPOSAL

1. Refueling Water Storage Tank Operating Temperature - Unit No. 1

In its letter dated November 2, 1979, the licensee proposed seven changes to the Technical Specifications of their Unit Nos. 1 and 2 licenses. Proposed change number six which is the only one being dealt with in this evaluation, would increase the RWST operating temperature on Unit No. 1 from 35°F to 70°F. The original minimum temperature limit of 35°F was to prevent freezing in the tank and related liners, however,

during the Unit No. 1 Reload Safety Analysis performed by Exxon Nuclear Company, the minimum safety injection water was assumed to be 70°F. The RWST water temperature also determines the initial spray water temperature delivered to the containment following a loss of coolant accident (LOCA). Spray water temperature is one of the factors in the emergency core cooling system analysis which determines the containment back-pressure following a LOCA. We agree that the minimum RWST temperature should be increased to 70°F to be consistent with the completed analyses. The changes to the Technical Specification as proposed by the licensee, are acceptable. Likewise, Limiting Condition for Operation (LCO) 3.1.2.8.b.3 and Surveillance Requirement 3.1.2.8.b.3 of the Unit No. 1 Appendix A Technical Specifications should be changed to show a minimum temperature of 70°F for the RWST solution temperature.

A similar correction is not required for the Unit No. 2 Technical Specifications which already appropriately show the minimum allowable RWST temperature to be 80°F which is consistent with the LOCA analysis for Unit No. 2.

ENVIRONMENTALLY RELATED PROPOSALS

2. Thermal Plume Measurements of Water Discharge - Unit Nos. 1 and 2

We initially requested that the licensee validate the predictive model used to assess the impacts of the thermal discharge from the plant. The test requirements were covered in the Environmental Technical Specification ETS 4.1.1.2. The validation was to be accomplished by comparing the model predictions to four actual plumes measured during fall, winter, spring and summer. The plumes were measured during summer and fall of 1978. The winter measurement was missed due to dangerous ice conditions and, that spring, the plant was at low power due to refueling. The latter condition precluded meaningful measurements.

The licensee proposed in its April 6, 1979 letter a delay of the spring monitoring until later in the year; essentially proposing a second summer measurement. The staff considered this to be an unacceptable substitution noting the dissimilarity between spring and summer lake conditions.

With regard to the missing winter measurements, the licensee advised the staff that winter conditions at the site created hazardous conditions on the lake. They doubted that a data set could be collected without endangering the boat crew. We have considered the conditions described and concur that whatever value might accrue from the data is offset by the potential for injury or loss of life.

Subsequently, the licensee submitted a model validation study which utilizes all available operational data. The licensee compared predicted and actual plumes and concluded that the model has been adequately validated and supports the environmental impact assessments which relied on the model prediction. We reviewed the report and have not identified any significant discrepancies.

In addition, the State permits for plant operation, based in part on the assessment of thermal impact, have already been issued. Thus, while we note that the licensee has not met the letter of the initial environmental T.S. with regard to thermal monitoring, we now consider the additional monitoring unnecessary. We, therefore, concur with the licensee's request that the monitoring requirement be deleted from the Technical Specifications.

3. Modifications to the discharge scour bed protection for Unit 1

By letter dated April 6, 1979 and as supplemented by letter dated September 13, 1979, the licensee has proposed a modification to the Unit No. 1 discharge structure scour bed to alleviate a scouring problem in the area immediately in front of the discharge jets. This area was originally constructed with a riprap bed. However, the high velocity discharge, especially during times of heavy surface waves, eroded a position of the scour bed and created a hole in the grout apron.

The licensee attempted to correct the problem by replacing the riprap in the scoured out area. It was again scoured out. The licensee proposes, as a permanent solution to the problem, to replace the eroded portion of the riprap scour bed with a concrete one, poured in place under water. The licensee has agreed to periodically inspect this scour bed and report its findings to the NRC. We have reviewed the design bases and find the proposed plan acceptable.

ETS Section 4.1.1.4 should be appropriately revised to reflect the fact that the scour bed is now more than of riprap construction and to accommodate the need for further studies in the event major modifications are made as proposed by the licensee. The licensee has agreed to such revisions of ETS Section 4.1.1.4.

In reaching our conclusion that the proposed modification is acceptable, we also considered whether operating with the modified scour bed protections would alter the conclusions made in our earlier environmental evaluations on this plant. These considerations are presented below.

In the August 1973 Final Environmental Statement (FES) for D. C. Cook Units 1 and 2, we discussed the potential for scouring the lake bottom from the high velocity offshore discharge (Section III.D.1.b(4), page III-22). The FES recognized that placement of the scour bed around the discharge jets would displace or eliminate those benthic organisms occupying the area of the scour bed (Section V.C.2.c(1), page V-22). Serious bottom scouring was not expected to occur in the immediate discharge area, thus direct effects of sediment scour, long-term increase in turbidity, and damage to benthic organisms were all expected to be minimal. The recent changes to the scour bed resulting from station discharges have occurred in the area where previous displacement of benthic organisms occurred, thus no significant impact to benthics in that area should result. A permanent solution to the scour problem is warranted to maintain the minimum conditions of turbidity and associated effects to biota evaluated in the FES. The placement of concrete in the immediate scour bed should ensure that long term effects are kept to a minimum level. The proposed changes and any resulting effects therefore appear to fall within the range of effects previously reviewed and found to be acceptable in the FES.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: August 29, 1980

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NOS. 50-315 AND 50-316INDIANA AND MICHIGAN ELECTRIC COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE
AND NEGATIVE DECLARATION

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 40 to Facility Operating License No. DPR-58, and Amendment No. 23 to Facility Operating License No. DPR-74 issued to Indiana and Michigan Electric Company (the licensee), which revised Technical Specifications for operation of Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2 (the facilities) located in Berrien County, Michigan. The amendments are effective as of the date of issuance.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration. No request for a hearing or petition for leave to intervene was filed following notice of the proposed action.

The Commission has prepared an environmental impact appraisal for the revised Technical Specifications and has concluded that an environmental

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impact statement for this particular action is not warranted because there will be no environmental impact attributable to the action other than that which has already been predicted and described in the Commission's Final Environmental Statement for the facility dated August 1973.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement or negative declaration need not be prepared in connection with these amendments.

For further details with respect to this action, see (1) the applications for amendments dated April 6, 1979 (as supplemented September 13, 1979) and November 2, 1979, (2) Amendment Nos. 40 and 23 to License Nos. DPR-58 and DPR-74, and (3) the Commission's related Safety Evaluation and Environmental Impact Appraisal. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and at the Maude Reston Palenske Memorial Library, 500 Market Street, St. Joseph, Michigan 49085. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Division of Licensing.

Dated at Bethesda, Maryland, this 29th day of August, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

J. D. Neighbors
J. D. Neighbors, Acting Chief
Operating Reactors Branch #1
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