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JUN 2 1976

Docket No. 50-315

Indiana & Michigan Electric Company
Indiana & Michigan Power Company
ATTN: Mr. John Tillinghast
Vice President
P. O. Box 18
Bowling Green Station
New York, New York 10004

Gentlemen:

On May 14, 1976, you requested by telephone a change in the Technical Specifications for the Donald C. Cook Nuclear Plant, Unit 1. On May 15, 1976, we authorized the requested change and sent via telecopy to the Donald C. Cook Nuclear Plant a written confirmation of the telephoned authorization.

We have since received your written request for the change, dated May 17, 1976.

In our written confirmation, we stated that copies of the license amendment, Federal Register Notice, and Safety Evaluation for the Technical Specification change would be sent to you when completed. We have completed these documents and a copy of each is enclosed with this letter. Also enclosed is the original of the telecopied letter of authorization for the change.

Sincerely,

Original signed by
K. Kniel

Karl Kniel, Chief
Light Water Reactors Branch 2
Division of Project Management

Enclosures:
1. Original Authorization of Tech Spec Change
2. Safety Evaluation
3. License Amendment No. 15
4. Federal Register Notice

OFFICE	LWR-2 RaB	LWR-2 KK	OELD SATeboy			
SURNAME	RBenedict:ng	KKniel				
DATE	5/17/76	5/19/76	5/28/76			

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

ccs:
Mr. Robert Hunter
Vice President
American Electric Power Service Corporation
2 Broadway
New York, New York 10004

Gerald Charnoff, Esquire
Shaw, Pittman, Potts & Trowbridge
910 17th Street, NW
Washington, D. C. 20006

Businessmen for the Public Interest
Suite 1001
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Chicago, Illinois 60602

Mr. D. John Beck
Division of Intergovernmental Relations
Executive Office of the Governor
Lansing, Michigan 49813

Mr. Oral Hurt, Director
Bureau of Engineering
State Board of Health
1330 West Michigan Street
Indianapolis, Indiana 46206

Mr. Wade Schuler, Supervisor
Lake Township
Baroda, Michigan 49101

Honorable W. Mabry, Mayor
City of Bridgman
Michigan 49104

Mr. Gary Williams
Federal Activities Branch
Environmental Protection Agency
1 N. Wacker Drive
Chicago, Illinois 60606

INDIANA AND MICHIGAN ELECTRIC COMPANY

INDIANA AND MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT 1

FACILITY OPERATING LICENSE

Amendment No. 15
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 and Indiana and Michigan Power Company (the licensees) dated May 17, 1976, 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; and

   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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.

OFFICE ➔	LWR 2	LWR 2	LWR 2	OELD		
SURNAME ➔	SERVICE	Benedict	KKniel	SA Brooke		
DATE ➔	5/ /76	5/ /76	5/ /76	5/28/76		

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of May 15, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
K. Kniel

Karl Kniel, Chief
Light Water Reactors Branch 2
Division of Project Management

Attachment:
Change to the Technical
Specifications

JUN 2 1976

OFFICE ➤						
SURNAME ➤						
DATE ➤						

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

May 15, 1976

Docket No. 50-315

Indiana and Michigan Electric Company
Indiana and Michigan Power Company
P.O. Box 18, Bowling Green Station
New York, New York 10004

Gentlemen:

This confirms our telephoned authorization given today May 15, 1976 for a change in the Technical Specifications for the Donald C. Cook, Unit 1 facility as requested by your request of May 14, 1976. Facility Operating License No. DPR-58 is amended on this date, May 15, 1976 by making the following technical specification change: Change paragraph a) under ACTION c.2. of Specification 3.1.3.1 to read:

"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"

Copies of the license amendment, Federal Register Notice and Safety Evaluation for this technical specification change will be sent to you when completed.

Sincerely,
R. C. DeYoung
Assistant director, division of Project Management

SAFETY EVALUATION BY OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 15 TO LICENSE NO. DPR-58

INDIANA & MICHIGAN ELECTRIC COMPANY

INDIANA & MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-315

In a telephone conversation on May 14, 1976, between Mr. Steve Milioti of the licensee's organization and Mr. Robert Benedict of the NRC staff, the licensee requested a change to the Technical Specifications, Appendix A of Facility Operating License DPR-58. The requested change would revise Technical Specification 3.1.3.1, ACTION Item C.2.a) by changing the ejected rod worth limits of 0.35% Δk and 0.31% Δk to 0.75% Δk and 0.38% Δk respectively. The licensee stated that the original values were in error and should be changed to be in accordance with those given in WCAP-8165, "Fuel Densification - Donald C. Cook Nuclear Plant Units 1 and 2," June 1973.

Technical Specification 3.1.3.1 applies to inoperable control rods and requires that, under certain conditions, an analysis be made of the potential ejected rod worth to assure that the assumptions used in the accident analysis for a rod ejection accident are not exceeded.

The mechanical failure of a control rod drive mechanism housing would result in the ejection of a rod cluster assembly. The consequences of this would be a rapid reactivity insertion together with an adverse core power distribution, possibly leading to localized fuel damage.

Although mechanical provisions have been made to make this accident extremely unlikely, Westinghouse has analyzed the consequences of such an event. Methods used in the analysis are reported in WCAP-7588 "An Evaluation of the Rod Ejection Accident in Westinghouse Pressurized Water Reactors Using Spatial Kinetics Method," Revision 1, which we have reviewed and accepted by letter to Westinghouse dated August 28, 1973. This report demonstrates that the "adiabatic" model used in the accident analysis is conservative relative to a three-dimensional kinetics calculation.

The ejected rod worths and reactivity coefficients used in the analysis have been reported in WCAP-8165, "Fuel Densification - Donald C. Cook Nuclear Plant Units 1 and 2," June 1973, and have been reviewed and are reasonable. The Westinghouse criteria for gross damage of fuel are a clad temperature of 2700 degrees Fahrenheit and an energy disposition of 225 calories per gram at beginning of life and 200 calories per gram for irradiated fuel. We find these criteria acceptable and conservative in relation to our criteria of 280 calories per gram as described in Regulatory Guide 1.77.

Four cases were analyzed: the beginning of cycle at 102% and zero power and the end of cycle at 102% and zero power. The worst case was the beginning of life 102% power case which resulted in a clad temperature of 2585 degrees Fahrenheit and 208 calories per gram energy disposition As a result, gross fuel damage would not occur. The corresponding ejected rod worth is 0.38% Δk. For the zero power case, a rod worth of 0.75% Δk is not large enough for fuel or clad limits to be exceeded at any time of life.

A conservative analysis shows that less than 10% of the fuel goes through departure from nucleate boiling. It was conservatively assumed that 10% of the fuel rods experienced cladding failure when estimating the radiological consequences of this accident.

The assumption and methods of analysis used by Westinghouse are in accordance with Regulatory Guide 1.77. We conclude that the predicted consequences of a postulated rod ejection accident are acceptable and, therefore, that the requested changes to the Technical Specifications may be authorized.

The staff has concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of an accident, and does not involve a significant decrease in a safety margin, the change does 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 operation will be conducted in compliance with the Commission's regulations and the issuance of this change will not be inimical to the common defense and security or to the health and safety of the public.

ORIGINAL SIGNED BY R.C.DEYOUNG

R. C. DeYoung, Assistant Director for
Light Water Reactors
Division of Project Management

May 15, 1976

We have determined that the change does 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 change involves an action that is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR § 51.5(d)(4), that an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of this change.

5/10/76

R. C. DeYoung, Assistant Director
for Light Water Reactors
Division of Project Management

UNITED STATES
NUCLEAR REGULATORY COMMIS N
WASHINGTON, D. C. 20555

INDIANA AND MICHIGAN ELECTRIC COMPANY

INDIANA AND MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT 1

FACILITY OPERATING LICENSE

Amendment No. 15
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 and Indiana and Michigan Power Company (the licensees) dated May 17, 1976, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of May 15, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

Karl Kniel, Chief
Light Water Reactors Branch 2
Division of Project Management

Attachment:
Change to the Technical
Specifications

Date of Issuance:
June 2, 1976

CHANGE TO TECHNICAL SPECIFICATIONS

LICENSE NO. DPR-58

MAY 15, 1976

Change paragraph a) under ACTION C.2 of Specification 3.1.3.1 to read:

"An analysis of the potential ejected rod worth is performed within 3 days and the rod worth is determined to be $\leq$ 0.75% Δk at zero power and $\leq$ 0.38% Δk at RATED THERMAL POWER for the remainder of the fuel cycle, and"

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-315

INDIANA AND MICHIGAN ELECTRIC COMPANY
INDIANA AND MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT UNIT 1

NOTICE OF ISSUANCE OF AMENDMENT TO
FACILITY OPERATING LICENSE

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 15 to Facility Operating License No. DPR-58 issued to Indiana and Michigan Electric Company and Indiana and Michigan Power Company. The amendment revises the Technical Specifications for operation of the Donald C. Cook Nuclear Plant Unit 1 located in Berrien County, Michigan, and is effective as of May 15, 1976.

The amendment changes certain Technical Specifications to correct original errors in the limits of control rod worth for ejected control rods.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings required by the Act and the Commission's rules and regulations in 10 CFR Chapter I. These findings are set forth in the license amendment. Prior public notice of this amendment is not required because the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that, pursuant

to 10 CFR § 51.5(d)(4), an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated May 17, 1976, (2) Amendment No. 15 to License No. DPR-58, (3) the Commission's letter to the licensee dated May 15, 1976, and (4) the Commission's related safety evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW, Washington, D. C., and at the St. Joseph Public Library, 500 Market Street, St. Joseph, Michigan 49085. A copy of items (2), (3), and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management.

Dated at Bethesda, Maryland, this 2nd day of June 1976.

FOR THE NUCLEAR REGULATORY COMMISSION:

Karl Kniel, Chief
Light Water Reactors Branch 2
Division of Project Management