

OCT 6 1975

Docket No. 50-301

Wisconsin Electric Power Company
Wisconsin Michigan Power Company
ATTN: Mr. Sol Burstein
Executive Vice President
231 West Michigan Street
Milwaukee, Wisconsin 53201

Docket
ORB#3 Rdg
OELD
NDube
BJones (w/4 encls)
JMMcGough
JSaltzman
SATEets
JSWetmore
Glear
BScharf (15)

T.JCarter
PCollins
SVarga
CHebron
ACRS (16)
TBAbernathy
AESTeen
DEisenhut
Gray fiel
Extra cps (5)
SKari
WOMiller

Gentlemen:

The Commission has issued the enclosed Amendment No. 13 to Facility Operating License No. DPR-27 for the Point Beach Nuclear Plant Unit No. 2. The amendment also includes Change No. 19 to the Technical Specifications in accordance with your application dated July 15, 1975.

The amendment modifies the Technical Specifications to permit operation of the Point Beach Nuclear Plant Unit No. 2 core Cycle 2 to a cumulative fuel residence time of 24,000 Effective Full Power Hours.

The enclosed amendment responds only to the proposed change for core Cycle 2 residence time stated in the Technical Specifications as described in your request of July 15, 1975. The proposed changes to the Administrative Section of the Technical Specifications are still under consideration and action will be taken at a later date.

Copies of the Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

151

George Lear, Chief
Operating Reactors Branch #3
Division of Reactor Licensing

Enclosures:

1. Amendment No. 13
2. Safety Evaluation
3. Federal Register Notice

cc: See next page

CTR

DRoss

9/24/75

PR

OR 2

KRG

KRG/for

OFFICE>	ORB#3	ORB#3	ORB#3	OELD EX 11-15	RL:AD/ORS	ActD:DRL
SURNAME>	SATEets:kmf	JWetmore	GLEar	Ketchen	KRGoller	RSBoyd
DATE>	9/11/75	9/24/75	9/26/75	10/3/75	10/3/75	10/3/75

Wisconsin Michigan and Wisconsin Electric Power Company

cc: w/enclosure

Bruce W. Churchill, Esquire
Shaw, Pittman, Potts Trowbridge & Madden
Barr Building
910 17th Street, N. W.
Washington, D. C. 20006

Mr. William F. Eich, Chairman
Public Service Commission
of Wisconsin
Hill Farms State Office Building
Madison, Wisconsin 53702

Mr. Gary Williams
Federal Activities Branch
Environmental Protection Agency
Region V Office
One North Wacker Drive - Room 822
Chicago, Illinois 60606

Mr. Arthur M. Fish
Document Department
University of Wisconsin - Stevens Point Library
Stevens Point, Wisconsin 54481

Docket No. 50-301

OCT 6 1975

Wisconsin Electric Power Company
Wisconsin Michigan Power Company
ATTN: Mr. Sol Burstein
Executive Vice President
231 West Michigan Street
Milwaukee, Wisconsin 53201

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JMMcGough	Gray file
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GLear	
BScharf (15)	

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OFFICE➤	ORB#3	ORB##	ORB##	OELD	RL:AD/ORs	ActD:DRL
SURNAME➤	SATeets:kmf	JWetmore	GLear		KRGpiller	RBoyd
DATE➤	9/11/75	9/ /75	9/ /75	9/ /75	9/ /75	9/ /75

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

WISCONSIN ELECTRIC POWER COMPANY
WISCONSIN MICHIGAN POWER COMPANY

DOCKET NO. 50-301

POINT BEACH NUCLEAR PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 13
License No. DPR-27

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Wisconsin Electric Power Company and Wisconsin Michigan Power Company (the licensees) dated July 15, 1975, 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.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B. of Facility License No. DPR-27 is hereby amended to read as follows:

"(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensees shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 19."



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

FOR THE NUCLEAR REGULATORY COMMISSION

Karl R. Galler /for

Roger S. Boyd, Acting Director
Division of Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Change No. 19 to
Technical Specifications

Date of Issuance: OCT 6 1975

ATTACHMENT TO LICENSE AMENDMENT NO. 13

CHANGE NO. 19 TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-27

DOCKET NO. 50-301

Replace pages 15.2.1-1 and 15.2.1-3 with the attached revised pages.

15.2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

15.2.1 SAFETY LIMIT, REACTOR CORE

Applicability:

Applies to the limiting combinations of thermal power, reactor coolant system pressure, and coolant temperature during operation.

Objective:

To maintain the integrity of the fuel cladding.

Specification:

1. The combination of thermal power level, coolant pressure, and coolant temperature shall not exceed the limits shown in Figure 15.2.1-1. The safety limit is exceeded if the point defined by the combination of reactor coolant system average temperature and power level is at any time above the appropriate pressure line.
2. The cumulative fuel residence time for fuel region 2 of core cycle 2 for Unit No. 2 shall be limited to 24,000 effective full power hours (EFPH) under design operating conditions, with a primary system pressure of 2,000 psia.

This combination of hot channel factors is higher than that calculated at full power for the range from all control rods fully withdrawn to maximum allowable control rod insertion. The control rod insertion limits are covered by Specification 15.3.10-1. Somewhat worse hot channel factors could occur at lower power levels because additional control rods are in the core. However, the control rod insertion limits dictated by Figure 15.3.10-1 insure that the DNB ratio is always greater at part power than at full power. Additional peaking factors to account for local peaking due to fuel rod axial gaps and reduction in fuel pellet stack length have been included in the calculation of the curves shown in Figure 15.2.1-1.

Figure 15.2.1-1 also includes an allowance for an increase in the enthalpy rise hot channel factor at reduced power based on the expression:

$$F_{\Delta H}^N = 1.58 [1 + 0.2 (1-P)] \text{ where } P \text{ is the fraction of rated power.}$$

The hot channel factors are also sufficiently large to account for the degree of malpositioning of part-length rods that is allowed before the reactor trip set points are reduced and rod withdrawal block and load runback may be required. Rod withdrawal block and load runback occur before reactor trip setpoints are reached.

The Reactor Control and Protective System is designed to prevent any anticipated combination of transient conditions that would result in a DNB ratio of less than 1.30.

The cumulative fuel residence time for fuel region 2 of core cycle 2 is limited to 24,000 EFPH to assure no fuel clad flattening without prior review by the Regulatory staff. The residence time of 24,000 EFPH is based on predicted minimum time to clad flattening for an operating pressure of 2000 psi. Beyond the residence time of 24,000 EFPH for the region 2 fuel of core Cycle 2, an assumption of clad flattening is presently required. Prior to attaining 24,000 EFPH, the licensee will provide the additional analysis required for operation beyond 24,000 EFPH.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 13 TO LICENSE NO. DPR-27

(CHANGE NO. 19 TO THE TECHNICAL SPECIFICATIONS)

WISCONSIN ELECTRIC POWER COMPANY
WISCONSIN MICHIGAN POWER COMPANY

POINT BEACH NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-301

Introduction

By letter dated July 15, 1975, Wisconsin Electric Power Company (WEPCO) requested a change to the Technical Specifications appended to Facility License DPR-27 for Point Beach Nuclear Plant Unit 2. The requested change would permit operation of Point Beach Unit 2 core Cycle 2 to a cumulative fuel residence time of 24,000 Effective Full Power Hours (EFPH).

Discussion

On August 30, 1974, WEPCO submitted a license amendment application to incorporate changes to the Technical Specifications for operation of Point Beach Unit 2 core Cycle 2. Included in the changes was a proposed cumulative fuel residence time of 24,000 EFPH. This residence time was based on a calculated minimum time to clad flattening of 24,000 EFPH for the limiting core region (Region 2). This calculated minimum time to clad flattening was obtained by using the revised clad flattening model presented in Westinghouse Topical Report WCAP-8381(1), dated July, 1974. Since, at that time, we had not reviewed and approved WCAP-8381, we performed an independent and conservative analysis of the minimum time to clad flattening for Region 2 in core Cycle 2. Based on our independent and conservative analysis, we concluded that a minimum time to clad flattening of 20,000 EFPH would provide a conservative margin of safety. Therefore we authorized Point Beach Unit 2 to operate in core Cycle 2 to 20,000 EFPH with the understanding that this limit could be extended at a later date, if the Westinghouse revised clad flattening model was approved by the Nuclear Regulatory Commission (NRC).

(1) R. A. George, et. al, "Revised Clad Flattening Model", WCAP-8381, July, 1974. This is a non-proprietary version of WCAP-8377 of the same title and author.



Subsequent to the licensing actions just discussed, the revised clad flattening model described in WCAP-8381 was approved by the NRC. Therefore, by letter dated July 15, 1975, WEPCO requested an extension of the Point Beach Unit 2 core Cycle 2 fuel residence time to 24,000 EFPH. Our evaluation of WEPCO's request follows.

Evaluation

The existing Technical Specifications for Point Beach Unit 2 limit the core Cycle 2 fuel residence time to 20,000 EFPH. This fuel residence time is based on a NRC calculation of the minimum time to clad flattening for the limiting region in core Cycle 2 (Region 2 fuel assemblies). The NRC calculation utilized a simplified and very conservative clad flattening model.

The proposed change would authorize a fuel residence limit of 24,000 EFPH. This limit is based on a calculated minimum time to clad flattening for Region 2 fuel assemblies obtained by using the calculational techniques described in Westinghouse Topical Report WCAP-8381, "Revised Clad Flattening Model".

WCAP-8381 describes the details of an analytical model that predicts the minimum time to clad flattening and the flattened fuel rod frequency (i.e., the number of flattened rods) for pressurized fuel rods. This revised model differs from previous Westinghouse models in that: (1) clad flattening is predicted to occur when the maximum cladding stress reaches the temperature dependent yield stress for unirradiated clad material, (2) fuel densification is assumed to behave as described in WCAP-8219⁽²⁾, (3) the effect of a finite rather than an infinite gap length is included, and (4) a statistical analysis of fuel rod ovality and fuel rod power is utilized. This revised model has been used to predict the minimum time to clad flattening at various other facilities, including H. B. Robinson and Point Beach Unit 1, and measurements made for these facilities have confirmed that the predictions are conservative.

Based on our review of the Westinghouse revised clad flattening model, we have concluded that it is an acceptable method for calculating the minimum time to clad flattening for Point Beach Unit 2. Moreover, we agree that Region 2 is the limiting core region for Cycle 2 and thus the fuel residence limit of 24,000 EFPH would provide a sufficient margin of safety to assure that clad flattening will not occur in any of the core regions during Cycle 2. Therefore, we have concluded that the proposed change is acceptable.

(2) J. A. Hellman, "Fuel Densification Experimental Results and Model for Reactor Application", WCAP-8219, October, 1973.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: OCT 6 1975

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-301

WISCONSIN ELECTRIC POWER COMPANY
WISCONSIN MICHIGAN POWER COMPANY

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. 13 to Facility Operating License No. DPR-27 issued to Wisconsin Electric Power Company and Wisconsin Michigan Power Company, which revised Technical Specifications for operation of the Point Beach Nuclear Plant Unit No. 2, located in the Town of Two Creeks, Manitowoc County, Wisconsin. The amendment is effective as of its date of issuance.

The amendment modifies the Technical Specifications to permit operation of Point Beach Nuclear Plant Unit No. 2 core Cycle 2 to a cumulative fuel residence time of 24,000 Effective Full Power Hours.

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 as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Notice of Proposed Issuance of Amendment to Facility Operating License in connection with this action was published in the FEDERAL REGISTER on August 29, 1975 (40 F.R. 39445). No request for a hearing or petition for leave to intervene was filed following notice of the proposed action.

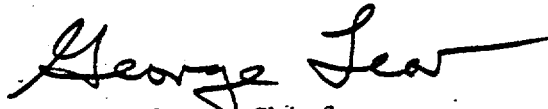
For further details with respect to this action, see (1) the application for amendment dated July 15, 1975, (2) Amendment No. 13 to License No. DPR-27, with Change No. 19, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public

Document Room, 1717 H Street, N. W., Washington, D. C. and at the Document Department, University of Wisconsin - Stevens Point Library, Stevens Point, Wisconsin 54481.

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: Director, Division of Reactor Licensing.

Dated at Bethesda, Maryland, this 6th day of October, 1975.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script that reads "George Lear". The signature is written in dark ink and is positioned above the printed name and title.

George Lear, Chief
Operating Reactors Branch #3
Division of Reactor Licensing