

July 31, 1989

Docket Nos. 50-266  
and 50-301

Mr. C. W. Fay, Vice President  
Nuclear Power Department  
Wisconsin Electric Power Company  
231 West Michigan Street, Room 308  
Milwaukee, Wisconsin 53201

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WSwenson	GPA/PA
JHannon	ARM/LFMB
OGC-WF1	LKokajko

Dear Mr. Fay:

SUBJECT: AMENDMENT NOS. 123 AND 126 TO FACILITY OPERATING LICENSE NOS. DPR-24  
AND DPR-27 (TACS 72819/72820)

The Commission has issued the enclosed Amendment Nos. 123 and 126 to Facility Operating License Nos. DPR-24 and DPR-27 for the Point Beach Nuclear Plant, Unit Nos. 1 and 2. The amendments revise the Technical Specifications in response to your application dated March 17, 1989.

These amendments revise Technical Specification 15.2.3.1.B(5) to eliminate the f-delta-I function from the Overpower Delta-T setpoint to increase the flexibility of operation at full power by allowing use of the full flux difference operating envelope. Please note that Technical Specification page 15.2.3-3 for Unit 2 (License No. DPR-27) will supersede that included with Amendment 123, dated May 8, 1989.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Original signed by:

Warren H. Swenson, Project Manager  
Project Directorate III-3  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 123 to DPR-24
2. Amendment No. 126 to DPR-27
3. Safety Evaluation

cc w/enclosures:  
See next page

\*see previous page for concurrence

Office:	LA/PDIII-3	PE/PDIII-3	PM/PDIII-3	PD/PDIII-3	OGC-WF1
Surname:	PKreutzer*	LKokajko/mr*	WSwenson*	JHannon*	MYoung*
Date:	05/25/89	05/26/89	05/26/89	05/26/89	06/01/89

*DFI*  
*CP-1*  
*WHS*  
*PM/PDIII-3*  
*WSWENSON*  
*7/31/89*

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difference operating envelope.

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Sincerely,

Warren H. Swenson, Project Manager  
Project Directorate III-3  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. to DPR-24
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3. Safety Evaluation

cc w/enclosures:  
See next page

Office: LA/PDIII-3  
Surname: PKreutzer  
Date: 5/25/89

PE/PDIII-3  
LKokajko/mr  
5/26/89

PM/PDIII-3  
Wswenson  
5/26/89

for: JHannon  
5/26/89

OGC-WF1  
my records  
5/1/89



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

July 31, 1989

Docket Nos. 50-266  
and 50-301

Mr. C. W. Fay, Vice President  
Nuclear Power Department  
Wisconsin Electric Power Company  
231 West Michigan Street, Room 308  
Milwaukee, Wisconsin 53201

Dear Mr. Fay:

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These amendments revise Technical Specification 15.2.3.1.B(5) to eliminate the f-delta-I function from the Overpower Delta-T setpoint to increase the flexibility of operation at full power by allowing use of the full flux difference operating envelope. Please note that Technical Specification page 15.2.3-3 for Unit 2 (License No. DPR-27) will supersede that included with Amendment 123, dated May 8, 1989.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

A handwritten signature in black ink that reads "Warren H. Swenson". The signature is fluid and cursive, with a large initial "W" and "S".

Warren H. Swenson, Project Manager  
Project Directorate III-3  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 123 to DPR-24
2. Amendment No. 126 to DPR-27
3. Safety Evaluation

cc w/enclosures:  
See next page

Mr. C. W. Fay  
Wisconsin Electric Power Company

Point Beach Nuclear Plant  
Units 1 and 2

cc:

Mr. Bruce Churchill, Esq.  
Shaw, Pittman, Potts and Trowbridge  
2300 N Street, N.W.  
Washington, DC 20037

Mr. James J. Zach, Manager  
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Wisconsin Electric Power Company  
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Two Rivers, Wisconsin 54241

Town Chairman  
Town of Two Creeks  
Route 3  
Two Rivers, Wisconsin 54241

Chairman  
Public Service Commission  
of Wisconsin  
Hills Farms State Office Building  
Madison, Wisconsin 53702

Regional Administrator, Region III  
U.S. Nuclear Regulatory Commission  
Office of Executive Director  
for Operations  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Resident Inspector's Office  
U.S. Nuclear Regulatory Commission  
6612 Nuclear Road  
Two Rivers, Wisconsin 54241



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

WISCONSIN ELECTRIC POWER COMPANY

DOCKET NO. 50-266

POINT BEACH NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 123  
License No. DPR-24

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Wisconsin Electric Power Company (the licensee) dated March 17, 1989 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.

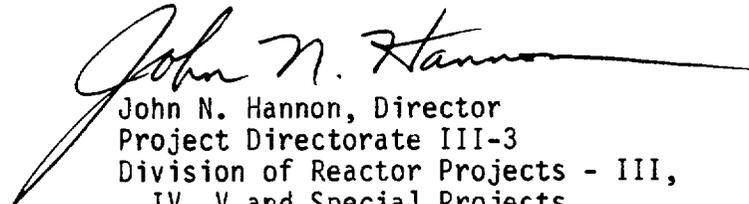
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-24 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 123, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective immediately upon issuance. The Technical Specifications are to be implemented within 20 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
John N. Hannon, Director  
Project Directorate III-3  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 31, 1989



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

WISCONSIN ELECTRIC POWER COMPANY

DOCKET NO. 50-301

POINT BEACH NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 126  
License No. DPR-27

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Wisconsin Electric Power Company (the licensee) dated March 17, 1989 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.

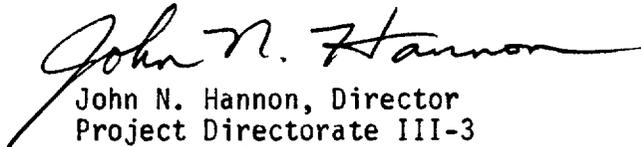
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-27 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 126, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective November 1, 1989.

FOR THE NUCLEAR REGULATORY COMMISSION



John N. Hannon, Director  
Project Directorate III-3  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 31, 1989

ATTACHMENT TO LICENSE AMENDMENT NOS. 123 AND 126  
TO FACILITY OPERATING LICENSE NOS. DPR-24 AND DPR-27  
DOCKET NOS. 50-266 AND 50-301

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

REMOVE

15.2.3-3

15.2.3-5

INSERT

15.2.3-3

15.2.3-5

(c) for each percent that the magnitude of  $q_t - q_b$  exceeds -17 percent, the  $\Delta T$  trip setpoint shall be automatically reduced by an equivalent of 2.0 percent of rated power.

(5) Overpower  $\Delta T \left( \frac{1}{1+\tau_3 S} \right)$

$$\leq \Delta T_o \left[ K_4 - K_5 \left( \frac{\tau_5 S}{\tau_5 S + 1} \right) \left( \frac{1}{1+\tau_4 S} \right) T - K_6 \left[ T \left( \frac{1}{1+\tau_4 S} \right) - T' \right] \right]$$

where

$\Delta T_o$  = indicated  $\Delta T$  at rated power, °F

T = average temperature, °F

$T' \leq$  573.9°F

$K_4 \leq$  1.089 of rated power

$K_5 =$  0.0262 for increasing T

= 0.0 for decreasing T

$K_6 =$  0.00123 for  $T \geq T'$

= 0.0 for  $T < T'$

$\tau_5 =$  10 sec

$\tau_3 =$  2 sec for Rosemont or equivalent RTD

0 sec for Sostman or equivalent RTD

$\tau_4 =$  2 sec for Rosemont or equivalent RTD

0 sec for Sostman or equivalent RTD

(6) Undervoltage -  $\geq 75$  percent of normal voltage

(7) Indicated reactor coolant flow per loop -  
 $\geq 90$  percent of normal indicated loop flow

(8) Reactor coolant pump motor breaker open

(a) Low frequency set point  $\geq 55.0$  HZ

(b) Low voltage set point  $\geq 75$  percent of normal voltage.

## Basis

The source range high flux reactor trip prevents a startup accident from subcritical conditions from proceeding into the power range. Any set point within its range would prevent an excursion from proceeding to the point at which significant thermal power is generated.<sup>(1)</sup>

The high flux low power reactor trip provides redundant protection in the power range for a power excursion beginning from low power. This trip insures that a more restrictive trip point is used for this case than for an excursion beginning from near full power.<sup>(1)</sup>

The overpower nuclear flux reactor trip protects the reactor core against reactivity excursions which are too rapid to be protected by temperature and pressure circuitry. The prescribed set point, with allowance for errors, is consistent with the trip point assumed in the accident analysis.<sup>(3)</sup>

The overpower  $\Delta T$  reactor trip prevents power density anywhere in the core from exceeding 108% of design power density, and includes corrections for change in density and heat capacity of water with temperature, and dynamic compensation for piping delays from the core to the loop temperature detectors. The specified set points meet this requirement and include allowance for instrument errors.<sup>(2)</sup>

The overtemperature  $\Delta T$  reactor trip provides core protection against DNB for all combinations of pressure, power, coolant temperature, and axial power distribution, provided only that (1) the transient is slow with respect to piping transit delays from the core to the temperature detectors, (about 4 seconds),<sup>(5)</sup> and (2) pressure is within the range between the high and low pressure reactor trips. With normal axial



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NOS. 123 AND 126 TO  
FACILITY OPERATING LICENSE NOS. DPR-24 AND DPR-27

WISCONSIN ELECTRIC POWER COMPANY  
POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

By letter dated March 17, 1989, Wisconsin Electric Power Company (the licensee) requested amendments to the Point Beach Nuclear Plant, Unit Nos. 1 and 2, operating licenses. The amendments would revise the Technical Specification (TS) 15.2.3.1.B.(5) to eliminate the f-delta-I function from the Overpower Delta-T (OPDT) setpoint to increase the flexibility of operation at full power by allowing use of the full flux difference operating envelope. The request would also change the associated TS bases for this specification.

2.0 EVALUATION

The licensee has requested that the f-delta-I function found in TS 15.2.3.1.B.(5) be removed from the OPDT setpoint calculation to increase the flexibility of plant operation at full power. Further, the licensee requested the specification bases be modified to reflect that the OPDT trip setpoint does not include corrections for axial power distribution. This latter request is necessary since the setpoint would no longer require that correction.

In TS change request 127 (dated August 26, 1988), the licensee proposed a flux difference operating envelope that allows a flux difference at full power of +9 percent. The TS-required delta flux penalty for the OPDT trip setpoint is +9.5 percent at full power. Currently, the setpoints of approximately +6.5 percent delta flux for turbine runback and approximately +7.5 percent delta flux for reactor trip are used to ensure the TS setpoint limit is not violated. These actual setpoints account for instrument calibration drift. With these conservative setpoints and the revised flux difference operating envelope, the plant cannot be operated normally with all rods out and at full power during the beginning of each fuel cycle without causing a runback or trip. The elimination of the f-delta-I function was chosen by the licensee as the preferred method of resolving this issue.

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The elimination of the f-delta-I function will allow normal operation at full power with all control rods out at any time during core life, and it will allow the flux difference operating envelope to be fully utilized. The alternative is to operate the core with control rods partially inserted to decrease the power at the top of the core. This alternative is not desirable in a pressurized water reactor (PWR) because it increases control rod exposure (causing a decrease in service life) and creates uneconomical fuel burnup patterns. Additionally, operational maneuverability during power swings and transient recoveries is limited.

The design bases of the OPDT and the Overtemperature Delta-T (OTDT) setpoints are presented in WCAP-8745-P-A, "Design Bases for the Thermal Overpower Delta-T and Thermal Overtemperature Delta-T Trip Functions," September 1986. The NRC accepted this document for referencing in a Safety Evaluation Report dated April 17, 1986.

Though the OPDT setpoint is intended to protect against fuel centerline melting in Condition II transients, the WCAP report concluded that no f-delta-I function is required to preclude fuel centerline melting during overpower events in 16x16 and 17x17 fuel plants. Moreover, the WCAP report concluded that the OPDT trip setpoints (including f-delta-I adjustment) for 14x14 and 15x15 fuel plants were established in a more conservative manner than required to prevent fuel centerline melting. Therefore, 14x14 and 15x15 fuel plants could be evaluated in accordance with the WCAP methodology to justify removal of the f-delta-I function on a plant-specific basis. Point Beach Unit Nos. 1 and 2 are 14x14 fuel plants.

Analyses on the proposed flux difference operating envelope were performed for Point Beach. Condition II events were analyzed for control bank and boration/dilution system malfunctions, which are potentially limiting during overpower events. An overpower limit of 114 percent, based on a nominal TS value of 108.9 percent, was used for all values of delta-I (i.e., no f-delta-I penalty was applied). The analyses confirmed that the resulting overpower conditions did not yield a linear power density that would cause fuel centerline melting. Therefore, the f-delta-I function could be removed from the OPDT setpoint calculation with no adverse impacts to safety.

Based upon the information above, the staff concludes that the requests to remove the f-delta-I function from the OPDT setpoint calculation and to modify the related specification bases, as stated in the March 17, 1989 letter, are acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or change an inspection or surveillance requirement. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR §51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

### 4.0 CONCLUSION

The staff has 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Lawrence E. Kokajko

Dated: July 31, 1989