July 22, 1985

Docket Nos. 50-266
and 50-301

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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:

The Commission has issued the enclosed Amendment Nos. 94 and 98 to Facility Operating License Nos. DPR-24 and DPR-27 for the Point Beach Nuclear Plant, Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application dated January 30, 1985.

These amendments change the underfrequency trip setpoint for reactor coolant pumps from 57.5 Hz to 55.0 Hz, change the related bases and correct a typographical error concerning reference to a section of the Technical Specifications.

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

Sincerely,

/S/

Timothy G. Colburn, Project Manager
Operating Reactors Branch #3
Division of Licensing

Enclosures:
1. Amendment No. 94 to DPR-24
2. Amendment No. 98 to DPR-27
3. Safety Evaluation

cc w/enclosures:
See next page

ORB#3:DL	ORB#3:DL	ORB#3:DL	OELD	AD:OR:DL
PMKreutzer	TColburn:dd	EJButcher		GCLainas
7/16/85	7/16/85	7/16/85	7/18/85	7/22/85

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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. 94
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 January 30, 1985 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.

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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. 94 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 20 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Edward J. Butcher, Acting Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 22, 1985

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. 98
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 January 30, 1985 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. 98 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 20 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Edward J. Butcher, Acting Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 22, 1985

ATTACHMENT TO LICENSE AMENDMENTS NO. 94 AND 98
TO FACILITY OPERATING LICENSE NO. DPR-24 AND DPR-27
DOCKET NOS. 50-266 AND 50-301

Revise Appendix A as follows:

Remove Pages	Insert Pages
15.2.3-3	15.2.3-3
15.2.3-7	15.2.3-7
15.3.1-3b	15.3.1-3b

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

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

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

where

ΔTo = indicated ΔT at rated power, ^oF

T = average temperature, ^oF

T' = 574.2^oF

K_4 = ≤ 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 $T < T'$

τ_5 = 10 sec

f (ΔI) as defined in (4) above,

τ_3 = 2 sec for Rosemont or equivalent RTD
= 0 sec for Sostman or equivalent RTD

τ_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% of normal voltage

the reactor coolant pump breaker opening as actuated by either high current, low supply voltage or low electrical frequency, or by a manual control switch. The significant feature of the breaker trip is the frequency setpoint, 55.0 HZ, which assures a trip signal before the pump inertia is reduced to an unacceptable value. The high pressurizer water level reactor trip protects the pressurizer safety valves against water relief. The specified set point allows adequate operating instrument error[2] and transient overshoot in level before the reactor trips.

The low-low steam generator water level reactor trip protects against loss of feedwater flow accidents. The specified set point assures that there will be sufficient water inventory in the steam generators at the time of trip to allow for starting delays for the auxiliary feedwater system.[9]

Numerous reactor trips are blocked at low power where they are not required for protection and would otherwise interfere with normal plant operations. The prescribed set point above which these trips are unblocked assures their availability in the power range where needed. Specifications 15.2.3.2.A(1) and 15.2.3.2.C have a ± 1% tolerance to allow for a 2% deadband of the P10 bistable which is used to set the limit of both items. The difference between the nominal and maximum allowed value (or minimum allowed value) is to account for "as measured" rack drift effects.

Sustained operating with only one pump will not be permitted above 10% power. If a pump is lost while operating between 10% and 50% power, an orderly and immediate reduction in power level to below 10% is allowed. The power-to-flow ratio will be maintained equal to or less than unity, which ensures that the minimum DNB ratio increases at lower flow because the maximum enthalpy rise does not increase above the maximum enthalpy rise which occurs during full power and full flow operation.

References

(1) FSAR 14.1.1
(2) FSAR, Page 14-3
(3) FSAR 14.2.6
(4) FSAR 14.3.1
(5) FSAR 14.1.2
(6) FSAR 7.2, 7.3
(7) FSAR 3.2.1
(8) FSAR 14.1.9
(9) FSAR 14.1.11

Specification 15.3.1.A.1 requires that a sufficient number of reactor coolant pumps be operable to provide core cooling in the event a loss of power occurs. The flow provided in each case will keep DNBR well above 1.30 as discussed in FFDSAR, Section 14.1.9. Therefore, cladding damage and release of fission products to the reactor coolant will not occur. Heat transfer analyses[1] show that reactor heat equivalent to 10% of rated power can be removed with natural circulation only; hence the specified upper limit of 1% rated power without operating pumps provides a substantial safety factor.

Item 15.3.1.A.1.c.(2) permits an orderly reduction in power if a reactor coolant pump is lost during operation between 10% and 15% of rated power.

Above 50% power, an automatic reactor trip will occur if either pump is lost. The power-to-flow ratio will be maintained equal to or less than 1.0, which ensures that the minimum DNB ratio increases at lower flow since the maximum enthalpy rise does not increase above its normal full-flow maximum value.[2]

Specification 15.3.1.A.3 provides limiting conditions for operation to ensure that redundancy in decay heat removal methods is provided. A single reactor coolant loop with its associated steam generator and a reactor coolant pump or a single residual heat removal loop provides sufficient heat removal capacity for removing the reactor core decay heat; however, single failure considerations require that at least two decay heat removal methods be available. Operability of a steam generator for decay heat removal includes two sources of water, water level indication in the steam generator, a vent path to atmosphere, and the Reactor Coolant System filled and vented so thermal convection cooling of the core is possible. If the steam generators are not available for decay heat removal, this Specification requires both residual heat removal loops to be operable unless the reactor system is in the refueling shutdown condition with the refueling cavity flooded and no operations in progress which could cause an increase in reactor decay heat load or a decrease in boron concentration. In this condition, the reactor vessel is essentially a fuel storage pool and removing a RHR loop from service provides conservative conditions should operability problems develop in the other RHR loop. Also, one residual heat removal loop may be temporarily out of service due to

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 94 AND 98 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

Introduction

By letter dated January 30, 1985, Wisconsin Electric Power Company (licensee) requested changes to the Appendix A Technical Specifications appended to the operating licenses for the Point Beach Nuclear Plant Units 1 and 2. The changes would modify the underfrequency trip setpoint for the reactor coolant pump trip, change the related basis and correct a typographical error wherein an incorrect technical specification number is referenced in a basis to the Technical Specifications.

Discussion and Evaluation

The underfrequency trip setpoint for the reactor coolant pumps is designed to protect the reactor against departure from nucleate boiling (DNB) in the event of reduced primary system flow resulting from electrical system disturbances which cause frequency decay.

In support of the proposed Technical Specification change for reducing the underfrequency setpoint, a reanalysis of the complete loss-of-flow transient was performed by Westinghouse. The analysis methodology and assumptions were consistent with the FSAR analysis and the same as those used for the analysis of this incident for licensing the use of Westinghouse designed 14x14 optimized fuel assemblies (OFA). The following assumptions were made in the analysis in support of the proposed Technical Specification changes:

1. Reactor coolant system (RCS) flow was assumed to decay linearly in response due to a frequency decay at a constant rate of 5 Hz per second. The 5 Hz per second decay rate has been determined to be conservative for the Wisconsin Electric system.

2. Reactor trip occurs on a RCP underfrequency signal at a setpoint of 54.5 Hz.

3. Reactor trip delay time was assumed to be 0.6 seconds.

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The analysis bounded cores consisting entirely of standard fuel, cores consisting entirely of OFA fuel, and transition cores containing both fuel types. Operation at either 2000 psia or 2250 psia was considered. The difference between the Unit 1 and Unit 2 steam generators was also taken into account in order to cover both Point Beach units. The resulting DNBR for the limiting fuel type using the Westinghouse Improved Thermal Design Procedure (ITDP) and the WRB-1 correlation minimizes at 1.65 at about 3.4 seconds following the beginning of the transient. This is well above the allowable DNBR of 1.3. Specific evaluations for standard fuel using standard methods were also performed. The Westinghouse ITDP and WRB-1 correlation were used for both OFA fueled cores and transition cores.

Based on our review, the staff finds that the proposed underfrequency trip setpoint will provide adequate margin over the accepted DNBR limit. Therefore, the licensee's proposed changes are acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. 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.

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

Date: July 22, 1985

Principal Contributors:
W. Jensen
T. Colburn