WISCONSIN PUBLIC SERVICE CORPORATION

Public Service

P.O. Box 1200, Green Bay, Wisconsin 54305

March 20, 1978

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

Gentlemen:

Docket 50-305
Operating License DPR-43
Proposed Technical Specification Amendment No. 34

Please find enclosed forty (40) copies of our proposed Amendment No. 34 to the Kewaunee Nuclear Power Plant Technical Specifications.

The proposed change revises the pressurizer heat-up and cooldown rate Technical Specifications. The maximum pressurizer cooldown rate remains at 200°F/hr. Rather than adding a separate Specification for heat-up rate as was requested by your letter of January 13, 1978, the heat-up rate limit of 200°F/hr. was just removed. The basis for this change is provided by the results of our startup tests and calculations which show that the maximum heat-up possible (maximum heater power and smallest mass of water) is less than 100°F/hr. These results are obtained by taking the measured pressurizer heat-up rate, 78.5°F/hr. and 21% level, and correcting for the maximum heat-up rate conditions, 18.3% level and 653°F, smallest mass and density. Therefore, since the maximum heat-up rate of the pressurizer at Kewaunee cannot exceed 100°F/hr., a Technical Specification limit would not be meaningful.

The second proposed change involves the monthly test requirement of Table TS 4.1-1 to test the Nuclear Power Range Signals to ΔT and bistable action to permissives, rod stop and reactor trips. The current specification implies that these bistables are tested even at power levels above where they are energized. In order to test these, it requires removing the signal from the NI channel and placing in a "dummy" signal. Such manipulations are not consistent with overall safety of the plant. The proposed amendment would change the requirements for testing the P8, P10 and 25% reactor trip bistables to quarterly when operating at power levels above these setpoints to coincide with the calibration of these channels. There is no reduction in safety

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LICENSE NO DPR-43 APPL FOR AMEND: TECH SPECS PROPOSED CHANGE CONCERNING REVISION TO THE PRESSURIZER HEAT-UP AND COOLDOWN RATE..NOTORIZED 03/20/78.

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incurred by this change, since continued accurate readings would be maintained by the quarterly calibration of the channels.

Very truly yours,

E. W. James
Senior Vice President
Power Supply & Engineering

sa

Enc.

Subscribed and Sworn to
Before Me This 20th Day
of March 1978

Jerome O Lewis
Notary Public, State of Wisconsin

My Commission Expires
February 11, 1979

b. HEATUP AND COOLDOWN LIMIT CURVES FOR NORMAL OPERATION

Specification

1. The reactor coolant temperature and pressure and system heatup and cooldown rates (with the exception of the pressurizer) shall be limited in accordance with Figures TS 3.1-1 and TS 3.1-2 for the service period up to 6.6 equivalent fullpower years.

   a. Allowable combinations of pressure and temperature for specific temperature change rates are below and to the right of the limit lines shown. Limit lines for cooldown rates between those presented may be obtained by interpolation.

   b. Figures TS 3.1-1 and TS 3.1-2 define limits to assure prevention of non-ductile failure only. For normal operation other inherent plant characteristics, e.g., pump heat addition and pressurizer heater capacity may limit the heatup and cooldown rates that can be achieved over certain pressure-temperature ranges.

2. The secondary side of the steam generator must not be pressurized above 200 psig if the temperature of the steam generator is below 70°F.

3. The pressurizer cooldown rate shall not exceed 200°F/hr. | 34
   The spray shall not be used if the temperature difference between the pressurizer and the spray fluid is greater than 320°F.

The results of the first Irradiation Capsule analysis are presented in WCAP 8908. Heatup and cooldown limit curves for normal operation of the reactor vessel are presented in Figures TS 3.1-1 and TS 3.1-2 and represent an operational time period of 6.6 effective fullpower years.

Pressure Limits

Although the pressurizer operates at temperature ranges above those for which there is reason for concern about brittle fracture, operating limits are provided to assure compatibility of operation with the fatigue analysis performed in accordance with Code requirements. In-plant testing and calculations have shown that a pressurizer heatup rate of 100°F/hr. cannot be achieved with the installed equipment; therefore, no heatup rate limit is specified. 34

REFERENCES

1. ASME Boiler and Pressure Vessel Code, "Nuclear Power Plant Components" Section III, Summer 1972 Addenda, Non-Mandatory Appendix G - "Protection Against Non-ductile Failure."

2. Standard Method for Measuring Thermal Neutron Flux by Radioactivation Techniques, ASTM designation E262-70, 1975 Book of ASTM Standards, Part 45, pp. 756-763.

3. W. S. Hazelton, S. L. Anderson, and S. E. Yanichko, "Basis for Heatup and Cooldown Limit Curves," WCAP 7924, July 1972.

4. S. E. Yanichko, S. L. Anderson, and K. V. Scott, "Analysis of Capsule V from the Wisconsin Public Service Corporation Kewaunee Nuclear Plant Reactor Vessel Radiation Surveillance Program," WCAP 8908, January 1977.

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS
(Page 1 of 3)

	Channel Description	Check	Calibrate	Test	Remarks
1.	Nuclear Power Range	S (1) EFPM (3)	D (1) EFPQ (3)	(M) (2) ***	1) Heat balance 34 2) Signal to ΔT; bistable action (permissive, rod stop, trips) 27 3) Upper and lower chambers for axial off-set using in-core detectors
2.	Nuclear Intermediate Range	*S (1)	N.A.	P (2)	1) Once/shift when in service 2) Log level; bistable action (permissive, rod stop, trips)
3.	Nuclear Source Range	*S (1)	N.A.	P (2)	1) Once/shift when in service 2) Bistable action (alarm, trips)
4.	Reactor Coolant Temperature	*S	R	M (1) M (2)	1) Overtemperature ΔT 2) Overpower ΔT
5.	Reactor Coolant Flow	S	R**	M	
6.	Pressurizer Water Level	S	R**	M	
7.	Pressurizer Pressure	S	R**	M	
8A.	4-KV Voltage & Frequency	N.A.	R	M	Reactor protection circuits only
8B.	4-KV Voltage	N.A.	R	R	Safeguards buses only 29

Table TS4.1-1 (1 of 3)

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TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS
(Page 3 of 3)

	Channel Description	Check	Calibrate	Test	Remarks
19.	Radiation Monitoring System	*D	R	M	Includes all 24 channels
20.	Boric Acid Make-Up Flow Channel	N.A.	R	N.A.	
21.	Containment Sump Level	N.A.	N.A.	R	
22.	Accumulator Level and Pressure	S	R	N.A.	
23.	Steam Generator Pressure	S	R	M	
24.	Turbine First Stage Pressure	S	A **	M	
25.	Portable Radiation Survey Instruments	*M	A	Q	
26.	Protective System Logic Channel Testing	N.A.	N.A.	M	Includes auto load sequencer
27.	Environmental Monitors	*M	N.A.	N.A.	
28.	Turbine Overspeed Protection Trip Channel	N.A.	R	M	
29.	Seismic Monitoring System	R	R	N.A.	
30.	Fore Bay Water Level	N.A.	R**	R	

A - Annually
D - Daily
M - Monthly
P - Prior to each startup if not done previous week
Q - Quarterly
R - Each refueling shutdown
S - Each shift
B/W - Every two weeks
N.A. - Not applicable
W - Weekly
EFPM - Effective Full Power Month
EFPQ - Effective Full Power Quarter

* See Specification 4.1.d
** Only if test indicates calibration required
*** Permissives P8 and P10 and the 25% reactor trip are tested quarterly.

Table TS4.1-1 (3 of 3)

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