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Nuclear Regulatory Commission  
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Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -  
TECHNICAL SPECIFICATIONS CHANGE REQUEST -  
REFUELING BORON CONCENTRATION

Attached is a proposed change to the Palisades Technical Specifications. The change of the refueling boron concentration is to ensure that the reactor core is maintained at least 5% subcritical during refueling operations and is consistent with the Limiting Conditions for Operation in the CE Standard Technical Specifications (NUREG-0212, Rev 2.). Other changes are to maintain consistency within the specifications and an expansion of the refueling boron surveillance requirements is proposed.

As required by 10CFR170.12 a check in the amount of \$150.00 is enclosed.

Kenneth W Berry *for*  
Director, Nuclear Licensing

CC Administrator, Region III, NRC  
NRC Resident Inspector - Palisades

Attachment

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CONSUMERS POWER COMPANY  
Docket 50-255  
Request for Change to the Technical Specifications  
License DPR-20

For the reasons hereinafter set forth, it is requested that the Technical Specifications contained in the Provisional Operating License DPR-20, Docket 50-255, issued to Consumers Power Company on October 16, 1972, for the Palisades Plant be changed as described in Section I below:

I. Changes

A. Section 1.1, Low Power Physics Testing

Change "260°F" to "371°F".

B. Section 1.1, Refueling Boron Concentration

Change the definition of Refueling Boron Concentration to read:

"Boron concentration sufficient to ensure that the more restrictive of the following conditions is met:

1. Either a keff of 0.95 or less (which includes a 1% delta k/k conservative allowance for uncertainties) with all control rods fully withdrawn, or
2. A boron concentration greater than or equal to 1720 ppm (which includes a 50 ppm conservative allowance for uncertainties)."

C. Section 2.3, Item 8, Basis

Change "260°F" to "371°F".

D. Section 3.3, Basis

Delete second sentence of second paragraph, and replace with:

"The limits on SIRW tank minimum volume and boron concentration ensure that in the event of a LOCA 1) sufficient water would be available within containment to permit recirculation cooling flow to the core, 2) the reactor would remain subcritical in the cold condition following a mixing of the SIRW tank and the PCS water volumes with all control rods inserted except for the most reactive control rod, and 3) sufficient water would be available to meet hydrazine concentration requirements."

E. Section 3.8.1, Paragraph g

Change the paragraph to read:

"With fuel in the reactor vessel and with the vessel head closure bolts less than fully tensioned or with the head removed, refueling

boron concentration shall be maintained in all filled portions of the primary coolant system and the refueling canal."

F. Section 3.8, Basis

Change the third sentence of the second paragraph to read:

"The boron concentration of this water is sufficient to maintain the reactor at least 5% subcritical in the cold condition with all rods withdrawn.<sup>(2)</sup>"

G. Table 4.2.1

Change footnote (7) to read:

"(7) Reference Section 5.4.2.f of the Design Features for minimum boron concentration. ( $\geq 1720$  ppm)".

Add a second line to Item 2, Reactor Coolant Boron:

"Refueling Boron  
Concentration<sup>(8)</sup>

a) Once/12 hours during reactor head removal and during refueling operations in the reactor, and 3.3.2.1

b) Twice/week with fuel in the reactor vessel and vessel closure bolts less than fully tensioned or with the head removed"

Add footnote (8) to read:

"(8) Reference Section 1.1 Reactor Operating Conditions and Specification 3.8 for refueling boron requirements."

II. Discussion

The purpose of this proposed Technical Specifications change is to ensure that the reactor is maintained at least 5% subcritical during refueling operations. The present Technical Specification limit for refueling boron concentration is  $\geq 1720$  ppm. Since this boron concentration may not always ensure a k-effective of 0.95 or less, the definition has been expanded to require that the more restrictive of the two boron concentrations is maintained.

Administratively, plant procedures that reference the 1720 ppm refueling boron concentration will be changed to simply state "refueling boron concentration" with instructions to obtain the current value from the Plant Technical Data Book.

Further explanation for each change is given below.

A. Section 1.1, Low Power Physics Testing

This change is necessary to achieve consistency among Sections 1.1, 2.3 and a previously approved amendment to 3.1.3b.

B. Section 1.1, Refueling Boron Concentration

The wording of current Technical Specifications infers that 1720 ppm ensures 5% shutdown margin. This was not the case during the most recent refueling outage. There was sufficient reactivity remaining in the core (due to a premature end to the cycle) to require 1770 ppm refueling boron concentration in order to maintain 5% shutdown margin. This Technical Specification change will ensure that the most conservative reactivity condition will be used. Uncertainty allowances have also been included in keeping with Combustion Engineering Standard Technical Specifications.

C. Section 2.3, Item 8, Basis

Technical Specification 3.1.3b does not allow the reactor to be critical below 371°F. This change brings the basis of Section 2.3, Item 8 up to date with Amendment No. 97.

D. Section 3.3, Basis

The sentence being deleted refers to a refueling condition and is inappropriate in the Emergency Core Cooling System Technical Specification basis.

The sentence that is being added provides the real basis for the minimum volume and boron concentration of the SIRW tank as it applies to safety injection and shutdown cooling.

E. Section 3.8.1, Paragraph g

This change more accurately defines when refueling boron concentration is required to be maintained and is more consistent with Combustion Engineering Standard Technical Specifications. The sampling requirements have been moved to Table 4.2.1.

F. The change to the basis of Section 3.8 is to ensure that the more conservative of 1720 ppm or k-eff less than 0.95 is used for refueling boron concentration.

G. Table 4.2.1

Reactor Coolant Boron in Table 4.2.1 has been expanded to include the refueling boron surveillance requirements. The proposed surveillance frequencies are consistent with other Table 4.2.1 frequencies.

Footnote (7) incorrectly refers to the Basis section of Technical Specification 3.8. It has been corrected to refer only to Technical Specification 5.4.2.f.

Footnote (8) was added to reference the definition of refueling boron concentration and also the requirements of Specification 3.8 during refueling.

### Analysis of No Significant Hazards Consideration

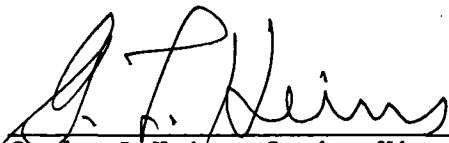
The purpose of the proposed Technical Specification change is to ensure that the reactor is maintained at least 5% subcritical during refueling operations. The present Technical Specification limit for refueling boron concentration is 1720 ppm. Since this boron concentration may not always ensure a k-effective of 0.95 or less, the definition has been expanded to require that the more restrictive of the two boron concentrations be maintained. Changes have also been made to delete reference to refueling boron concentration in the basis of the Emergency Core Cooling System Technical Specification 3.3 and to more accurately define when refueling boron concentration is required to be maintained and sampled. Reference to 5% shutdown margin was strictly a refueling requirement and did not apply to Section 3.3 of the Technical Specifications. The revised wording is consistent with the assumptions in the Palisades Safety Analysis. There is no increase in the probability or consequences of a previously evaluated accident, nor has a new or different kind of accident been created, and there has been no reduction in the margin of safety.


### III. Conclusion

The Palisades Plant Review Committee has reviewed this Technical Specification Change Request and has determined that this change does not involve an unreviewed safety question and therefore involves no significant hazards consideration. This change has also been reviewed under the cognizance of the Nuclear Safety Board. A copy of this Technical Specification Change Request has been sent to the State of Michigan official designated to receive such Amendments to the Operating License.


CONSUMERS POWER COMPANY

By

  
Gordon L. Heins, Senior Vice President  
Energy Supply

 5/3/88  
Nuclear Licensing Administrator

Sworn and subscribed to before me this 3rd day of May 1988.

  
Elaine E. Buehrer, Notary Public  
Jackson County, Michigan  
My commission expires October 31, 1989