



**Consumers
Power**

**POWERING
MICHIGAN'S PROGRESS**

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Nuclear Regulatory Commission
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Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
TECHNICAL SPECIFICATION CHANGE REQUEST - SAFETY INJECTION TANK BORON
CONCENTRATION (TAC NO 76436)

The attached proposed change to the Technical Specifications is necessary because of a temporary condition involving higher than normal leakage from the PCS into Safety Injection Tank (SIT) T-82A. The proposed change will reduce the minimum allowable boron concentration in this tank during the period after the spring maintenance outage and before the refueling outage in the fall of 1990 (5/16/90-9/30/90).

We request that approval of this change be expedited to allow its implementation before the May 16th startup from the spring maintenance outage.

Attachment I contains proposed Technical Specification pages as they will appear when this request is approved. Attachment II contains existing Technical Specification pages marked up to reflect the proposed changes.

for

Kenneth W Berry
Director, Nuclear Licensing

CC Administrator, Region III, USNRC
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. Change Section 3.3.1.b by adding an asterisk to denote a footnote at the end of the section and add a footnote at the bottom of the page to read:

"*For the remainder of Cycle 8, but not after September 30, 1990, Safety Injection Tank T-82A is required to have a boron concentration greater than or equal to the equivalent hot full power primary coolant system boron concentration, but not to exceed 2000 ppm."

- B. Change Table 4.2.1 Item 5 adding an asterisk "*" to the end and add a footnote to the bottom of the table to read:

"*For T-82A, for the remainder of Cycle 8 but not after September 30, 1990, following a Primary Coolant System boron change greater than 80 ppm below the equivalent hot full power value, a sample will be taken within one hour.

II. Discussion

Palisades is currently experiencing small leakage of primary coolant water into one of its four safety injection tanks (T-82A). A diagram of the leak path and of the safety injection tank fill and drain/sample system is shown on Figure 1 for information. Although the leakage is very small, i.e. much less than 1 gpm, it is causing level increases and dilution of the liquid in the safety injection tank.

Consumers Power Company is making plans to repair the leaking check valve (ES-3101) during the next scheduled maintenance outage which is planned to commence on April 16, 1990 and has a duration of 30 days. In order to repair the check valve during this outage, it will be necessary to enter a mode of operation (Mid-Loop Operation) where the reactor coolant level must be carefully reduced and controlled in order to assure operation of the shutdown cooling pumps. Industry experience has shown that operation at mid-loop presents a greater risk of loss of shutdown cooling than operation with a full reactor coolant system. As such, we feel it is prudent to consider alternatives to entering, for an extended time, a mode of reduced reactor water level operation for performing this repair. If the planned repair is found to be less

effective and more time consuming than presently envisioned, the best course of action may be to delay repair until the next refueling outage when we have an opportunity to make this repair with the reactor fuel completely removed from the core.

Leakage into the safety injection tank requires operations personnel to perform more frequent adjustments to tank level and sampling of tank boron concentration. Technical Specifications allow one safety injection tank to be out of specifications for one hour and, if the tank is not restored in that time, require the plant to be placed in hot shutdown within the following 12 hours. To sample the tank and return it to within Technical Specification limits on required boron concentration and level requires that a large amount of water be drained from the tank and replaced. The large amounts of water that must be transferred and the narrow limits on tank level and boron concentration that must be maintained require additional care and attention by the operating crew to assure compliance with Technical Specifications. The proposed Technical Specifications changes will reduce the amount of operator attention that must be devoted to maintaining this tank in Technical Specification compliance and will reduce the radiation exposure to operating personnel involved in the tank sampling evolution.

The proposed Technical Specifications change will expand the allowable boron concentration range for safety injection tank T-82A for the remainder of cycle 8 only. The change will also require a boron concentration sample to be taken whenever a primary coolant system boron change of greater than 80 ppm below the equivalent hot full power value takes place. This sample requirement is in addition to the monthly sample requirement that is already specified in Technical Specification Table 4.2.1. The change in required boron concentration in tank T-82A is justified on the basis of a safety analysis^{1/} performed by Consumers Power Company which shows that the reactor core will remain subcritical after a LOCA if one of the four safety injection tanks has a boron concentration equal to the equivalent hot full power primary coolant system boron concentration and the remaining safety injection tanks have a boron concentration of 1,720 ppm (the current Technical Specifications limit). The analysis assumes that one of the tanks (one with a boron concentration of 1,720 ppm) drains directly out of the break in the primary coolant system and therefore does not inject into the reactor vessel. Further, the analysis takes no credit for the reactor control rods or for Xenon buildup in determining core subcriticality. The requirement to sample the safety injection tank within one hour of a primary system boron changes of greater than 80 ppm below the equivalent hot full power value is proposed to assure that changes in boron

^{1/} Engineering Analysis EA-GCP-90-01, Rev 0

concentration due to power transients are evaluated with respect to the safety analysis assumptions. The 80 ppm value was chosen because it provides operational flexibility and represents less than one half of the margin to criticality that is predicted by the analysis.

In summary, the proposed Technical Specifications change will temporarily expand the allowed operating band for boron concentration in safety injection tank T-82A. The change is needed because increased leakage of primary coolant into the safety injection tank has made it difficult to maintain the boron concentration of the tank within Technical Specifications limits. The change will reduce the amount of operator attention required to maintain the tank in Technical Specification compliance as well as reduce radiation exposure to operating personnel involved in the tank sampling evolution. The change is justified on the basis of a safety analysis which shows that the change does not involve an unreviewed safety question. Delaying an extensive repair of the valve to the refueling outage will avoid placing the plant in a reduced PCS inventory condition for an extended time period with fuel in the core. Repairing the valve in the refueling outage will eliminate the risk of a loss of decay heat removal because the repair will be made while the core is defueled. Further, as discussed above we believe that continued operation of the plant with the leaking check valve until the fall refueling outage is an acceptable course of action.

III. Analysis of No Significant Hazards Consideration

Consumers Power Company finds that activities associated with this Change Request involve no significant hazards; and, accordingly, a no significant hazards determination per 10CFR50.92(c) is justified. The following evaluation supports the finding that the proposed change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The probability of a LOCA, the accident of concern, is in no way effected by changing the concentration of Boron concentration in a SIT since the change of Boron concentration does not change the configuration of the plant. Having one of the four SIT's with a boron concentration equal to or greater than the equivalent hot full power PCS boron concentration until the end of the present fuel cycle will not increase the consequences of an accident since sufficient boron remains in the other tanks to maintain the reactor subcritical.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The reduction in minimum boron concentration for one SIT does not change the function of the SIT's as a system or interface with other systems. Therefore, the possibility of a different type of accident can not be created.

3. Involve a significant reduction in the margin of safety.

With one SIT having the same boron concentration as the PCS for the remainder of the present fuel cycle, K_{eff} would remain less than 1.0 in all applicable accident scenarios. Although, in the mitigation of a large LOCA, the amount of boron in the PCS would be slightly less for a short time than if all four SIT's had 1720 ppm boron, the effect on K_{eff} is insignificant in view of the large amount of boron added by the high and low pressure safety injection (HPSI & LPSI) systems. Therefore, this change will not involve a reduction in the margin of safety.

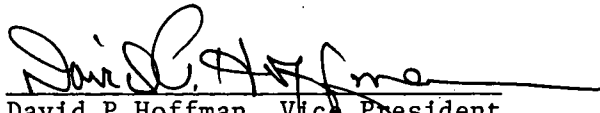
IV. Conclusion

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 been reviewed by the Nuclear Safety Services Department. 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.

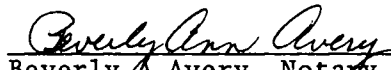
CONSUMERS POWER COMPANY

To the best of my knowledge, information and belief, the contents of this Technical Specification Change Request are truthful and complete.

By


David P Hoffman, Vice President
Nuclear Operations

Sworn and subscribed to before me this 11th day of April 1990.


Beverly A Avery, Notary Public
Jackson County, Michigan
My commission expires December 7, 1992