

BIG ROCK POINT

Technical Specifications Change Request

8002 290316

CONSUMERS POWER COMPANY
Docket 50-155
Request for Change to the Technical Specifications
License DPR-6

For the reasons hereinafter set forth, it is requested that the Technical Specifications contained in Facility Operating License DPR-6, Docket 50-155, issued to Consumers Power Company on May 1, 1964 for the Big Rock Point Plant be changed as described in Section I below:

I. CHANGES

- A. Change the column headings of Table 1 of Section 5.2.1.(b) to read:

Reloads F & Modified F	Reload G	Reload G-1U	Reload G-3/G-4
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- B. Change the following entries in Table 1 of Section 5.2.1.(b) as shown:

Minimum Bundle Dry Out Time**	Figure 1	-	-	-
Maximum Bundle Power, MW _t	Figure 2 x 0.95	Figure 2	Figure 2	Figure 2

**To be determined by linear extrapolation from Table 2. For operation with only one recirculating loop in service, these limits shall be reduced by 5 percent for reload F & Modified F and 10 percent for other fuel types.

- C. Replace Table 2 of Section 5.2.1.(b) with the new Table 2 attached.
- D. Delete Figure 1 of Section 5.2.1.(b).
- E. Redesignate Figure 2 of Section 5.2.1.(b) as Figure 1.
- F. Redesignate Figure 3 of Section 5.2.1.(b) as Figure 2 and revise this figure as attached.

NOTE: Corrected Technical Specifications pages are attached.

II. DISCUSSION

These changes revise reactor operating limits which are based on the Loss of Coolant Accident (LOCA) analysis required by 10 CFR 50.46 to be consistent with the new LOCA analysis submitted by Consumers Power Company letter dated March 7, 1979 (Exxon Nuclear Company (ENC) Report XN-NF-78-53). The derivation of new Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) limits using this new LOCA analysis is described in ENC Report XN-NF-79-21, Revision 1, "Big Rock Point LOCA Analysis Using the Exxon Nuclear Company WREM NJP-BWR ECCS Evaluation Model - MAPLHGR Analysis" which is forwarded herewith. MAPLHGR limits were not recalculated for General Electric fuel Types F and Modified F since the

existing limits were calculated in 1975 using General Electric integrated blowdown/fuel rod heatup analysis methods. The limits for fuel Types F and Modified F have not been changed in the proposed new Table 2 from those currently included in the Big Rock Point Technical Specifications.

Table 1 is also modified to limit MAPLHGR for operation with a single recirculating loop. In this case, MAPLHGR limits are reduced by 5 percent for GE fuel types and 10 percent for Exxon fuel types. These limits are based on a single loop Loss of Coolant Accident analysis performed by General Electric and described in a report dated March 31, 1977 (attached). This analysis shows that MAPLHGR limits must be reduced by 5 percent for GE fuel types, thereby showing that MAPLHGR is relatively insensitive to the flow reduction associated with single loop operation. An equivalent analysis has not been performed for Exxon fuel; however, reducing MAPLHGR limits by 10 percent for single loop operation is believed to be quite conservative based on the insensitivity to flow shown by the GE analysis.

The proposed changes include deletion of dry out time limits for ENC fuel types (G, G-1U and G3/G4). The dry out time limits currently included in the Technical Specifications resulted from previous ENC methodology for performing LOCA analyses. The WREM NJP-BWR ECCS Evaluation Model used in developing the proposed limits explicitly calculates fuel dry out time using the RELAP4-EM and HUXY computer codes. Fuel dry out is primarily related to the bundle peaking factor at the initiation of the event; accordingly, a conservatively high radial peaking factor of 1.4 (corresponding to a bundle power of 4.0 MW) was used in the heatup analysis. The proposed Figure 2 has been modified to reflect this peaking factor limit.

To assure that available emergency core cooling system core spray flow is adequate to remove decay heat, Amendment 26 to the Big Rock Point Technical Specifications added limits on bundle thermal power. As discussed in Consumers Power Company letter dated March 28, 1979, these limits were calculated using the decay heat present at the earliest time for which rated core spray was assumed in the LOCA analysis. This time is increased in the analysis reported in XN-NF-78-53 to 26.9 seconds from the 20.4 seconds used as the basis for bundle thermal power limits. The reduction in decay heat fraction from 20.4 seconds to 26.9 seconds is sufficient to permit an increase in bundle power limits of 4.69 percent while maintaining the same safety margin. Proposed Figure 2 has been revised to increase bundle thermal power limits by 4.69 percent for all core bundles not otherwise limited to 4.0 MW_t by the radial peaking factor assumption discussed above. Since GE fuel types (F and Modified F) were not reanalyzed, bundle thermal power limits for these fuel types are limited to 95 percent of the values in proposed Figure 2.

Also, as an attachment find Exxon Nuclear Company, Inc Report dated July 13, 1979 which describes the results of a "Big Rock Point LOCA-ECCS Analysis With Delayed Start of Diesel Drive Spray Pumps." This report shows that the MAPLHGR limits established in Report XN-NF-29-21, Revision 1 (attached), remain valid when maximum allowed start time for the diesel-driven spray pump is increased from 20 to 45 seconds. Based on these results, the acceptance criteria for the weekly diesel generator

start test at the Big Rock Point Plant will be relaxed to 39.3 seconds from the 26.9 seconds used in Report XN-NF-78-53 (attached).

This change also corrects an editorial error in that the dry out time limits for different fuel types were previously referenced to the wrong figure by Table 1. The limits have been applied correctly during operation.

This change also deletes limits for fuel Type J-2 since this fuel type is not expected to be used in future cycles at Big Rock Point.

III. CONCLUSION

Based on the foregoing, both the Big Rock Point Plant Review Committee and the Safety and Audit Review Board have concluded that this change is acceptable from a safety standpoint.

CONSUMERS POWER COMPANY

By *R B DeWitt*
R B DeWitt, Vice President
Nuclear Operations

Sworn and subscribed to before me this 25th day of February 1980.

Linda K. Carstens
Linda K Carstens

Notary Public, Jackson County, Michigan
My commission expires June 10, 1981.