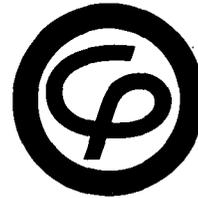


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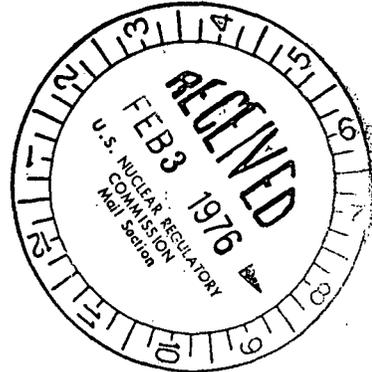


Consumers
Power
Company

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

January 30, 1976

Director of Nuclear Reactor Regulation
Att: Mr Robert A. Purple, Chief
Operating Reactor Branch No 1
US Nuclear Regulatory Commission
Washington, DC 20555



DOCKET 50-255, LICENSE DPR-20
PALISADES PLANT - PROPOSED TECHNICAL
SPECIFICATIONS CHANGE - PALISADES
CYCLE 2 RELOAD FUEL

By letters dated December 15, 1975 and December 29, 1975, we transmitted copies of reports containing information on Palisades Batch D and E reload fuel, respectively.

As discussed previously with members of your staff, additional information concerning the Palisades reactor refueling would be transmitted. This information includes a proposed Technical Specifications change (attached) and an analysis entitled, "Palisades LOCA Analyses Using the ENC WREM-Base PWR ECCS Evaluation Model" (No XN-76-4 dated January 1976), which discusses the ECCS analysis associated with six postulated pipe break accidents. This analysis is being provided under separate cover.

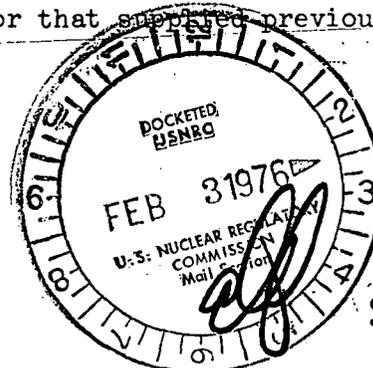
Additional information on analysis associated with the Palisades Cycle 2 refueling will be transmitted about February 10, 1976 (plant transients) and February 20, 1976 (additional ECCS analysis).

The changes proposed in this request are primarily designed to generalize the present Technical Specifications to allow for reactor refueling without requiring additional Technical Specifications changes.

In addition to the proposed Technical Specifications changes, it should be noted that the ECCS model being used for the analysis is different from that previously used, that fuel from a different manufacturer (Exxon Nuclear Corporation - ENC) is being analyzed for the reload core, and that ENC will be conducting the analysis both for the fuel supplied by ENC and for that supplied previously by others.

David A. Bixel
Assistant Nuclear Licensing Administrator

CC: JGKepler, USNRC
File



973

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 Provisional Operating License DPR-20, Docket 50-255, issued to Consumers Power Company on October 16, 1972, be changed as described in Section I below.

I. Changes

A. Change Section 5.3.2 (a) as follows:

"a. The reactor core shall approximate a right circular cylinder with an equivalent diameter of about 136 inches and an active height of about 132 inches."

B. Change Section 5.3.2 (b) as follows:

"b. The reactor core shall consist of approximately 43,000 Zircaloy-4 clad fuel rods containing slightly enriched uranium in the form of sintered UO₂ pellets. The fuel rods shall be grouped into 204 assemblies. A core plug or plugs may be used to replace one or more fuel assemblies subject to the analysis of the resulting power distribution."

C. Change Section 5.3.2 (c) as follows:

"c. The fully loaded core shall contain approximately 211,000 pounds UO₂ and approximately 56,000 pounds of Zircaloy-4. Poison may be placed in the fuel bundles for long-term reactivity control."

D. Delete Item 1 of Appendix C. (Requirements deleted or incorporated in Appendix A.)

E. Change Section 3.1.1 (b) by adding the following at the end of the paragraph:

"Four primary coolant pumps shall be in operation whenever the reactor is operated continually above 5% of rated power (exception to this specification is permitted as described in Table 2.3.1, Item 1)."

F. Change Section 3.1.1 (c) to read as follows:

"c. The minimum flow for various power levels shall be as shown in Table 2.3.1. The measured "Four Primary Coolant Pumps Operating" reactor coolant vessel flow (as determined by reactor coolant pumps differential pressure and pump performance curves) shall be 127.8 lb/h or greater."

G. Change the basis to Section 3.1.1 by adding the following paragraph:

"The thermal margin and ECCS analysis conducted for the reactor core assume a vessel flow of 124×10^6 lb/h. The value is consistent with a measured flow of 127.8×10^6 lb/h and an uncertainty of 3% (subtract from the measured flow)."

H. Change Table 2.3.1, Item 1, for two and three primary coolant pumps operating as follows:

<u>Three Primary Coolant Pumps Operating</u>	<u>Two Primary Coolant Pumps Operating</u>
"25% of rated power ⁽⁴⁾ " (Continuous operation not permitted.)	"5% of rated power ⁽⁴⁾ " (Continuous operation not permitted.)

⁽⁴⁾ Operation with two or three pumps is permitted only to provide for an orderly shutdown (or start-up) and to provide for the conduct of reactor internals, noise monitoring test measurements (a maximum of 12 hours of operation each time this test is conducted).

I. Delete Appendix B Items 1, 2, 3, 5 and 6. (These requirements are proposed to be incorporated elsewhere or are no longer applicable.)

J. Change proposed Section 3.18.1 (proposed in July 9, 1975 submittal) to read as follows:

"3.18.1 The linear heat generation rate with appropriate consideration of normal flux peaking, measurement-calculational uncertainty, engineering factor, increase in linear heat rate due to axial fuel densification, power measurement uncertainty, and flux peaking augmentation, shall not exceed that limit which causes calculated ECCS performance, as predicted by an evaluation model approved by the NRC as satisfying the requirements of 10 CFR 50, Appendix K, to exceed the "Acceptance Criteria for Emergency Core Cooling System for Light Water Cooled Nuclear Power Reactors" as given in 10 CFR 50.46(b).

"Unless otherwise justified, the measurement-calculational uncertainty shall be 10%, the engineering factor shall be 3%, the increase in linear heat rate due to axial densification shall be 1.75% (as applied to hot dimensions), the power measurement uncertainty shall be 2%, and the flux peaking augmentation factor shall be as given in Figure 3-6 for uncollapsed fuel and Figure 3-7 for collapsed fuel. Augmentation factors for ~~pressurized densification resistant ENC fuel and pressurized high density CE fuel~~ shall be 1.0."

II. Discussion

This Technical Specifications request assumes that the changes proposed on July 9, 1975 (re-evaluation of ECCS cooling performance) are accepted prior

to or as a part of this proposed change. A discussion of the individual item is given below.

- A. This proposed change generalizes the reactor core design with respect to equivalent diameter and heights. This change makes the Technical Specifications consistent with planned reload fuel design which may utilize slightly different fuel assembly design parameter (see Table 4.1 of our December 29, 1975 submittal, "Palisades Cycle 2 Reload Fuel Licensing Data Submittal").
- B&C. This proposed change deletes specific core fuel loading requirements. These requirements are effectively controlled in Section 3 of the Technical Specifications.
- D. This change deletes the present temporary thermal power restriction and allows the plant to return to its rated power level of 2200 MWt. This power level is used in our ECCS evaluations submitted as part of the Palisades Cycle 2 Reload Fuel Licensing Data Submittal.

Other parts of this appendix (Appendix C) are incorporated into Appendix A. See items E, F, and G.

- E&H. These changes delete the option of continuous operation with less than four primary coolant pumps in operation. Limited operation with two and three pumps is permitted to effect an orderly shutdown or start-up of the plant and to provide for "noise monitoring" to test for core internals vibration.

These added restrictions to the present Technical Specifications are considered temporary and are expected to be removed following completion of an analysis justifying operation with less than four coolant pumps.

- F&G. This change adds a minimum flow to the Appendix A Technical Specifications. This flow is consistent with that used in the Core 2 ECCS and thermal margin analysis.
- I. Many items in Appendix B are deleted. These items are no longer applicable or are incorporated elsewhere as follows:
 - 1. Item 1 - Rated power is defined in Section 1.1.
 - 2. Item 2 - Steam generator leakage requirements are proposed in changes associated with our steam generator tube plugging criteria request.
 - 3. ~~Item 3 - This section is no longer applicable since core burnup exceeds 10,265 MWd/MTV.~~
 - 4. Item 5 - A thermal power limit for unpressurized fuel is being determined as part of the analysis being conducted for the core reload.
 - 5. Item 6 - Data logger operability is considered in the proposed Technical Specifications of July 9, 1975.

J. This change modifies our proposed change of July 9, 1975 transmitted as part of the re-evaluation of ECCS cooling performance. The change incorporates consideration of pressurized, densification resistant fuel and recognizes that certain calculational uncertainties may change due to different fuel manufacturing considerations, etc.

III. Conclusion

This change has not been reviewed by our Palisades Plant Review Committee or the Safety and Audit Review Board. These reviews will be conducted as information becomes available and we will advise you should any of the proposed changes be deemed inappropriate.

CONSUMERS POWER COMPANY

By *C. R. Bilby*
C. R. Bilby, Vice President

Sworn and subscribed to before me this 30th day of January 1976.

Sylvia B. Ball
Sylvia B. Ball, Notary Public
Jackson County, Michigan
My commission expires May 18, 1976.

