



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 188 TO FACILITY OPERATING LICENSE NO. DPR-20
CONSUMERS ENERGY COMPANY
PALISADES PLANT
DOCKET NO. 50-255

1.0 INTRODUCTION

By application dated October 29, 1999, as supplemented November 2, 1999, the Consumers Energy Company (the licensee) requested an amendment to the Technical Specifications (TSs) for the Palisades Plant. The proposed amendment would revise administrative controls regarding the containment leak rate testing program and the core operating limits report (COLR). These changes are necessary to reflect changes in the accident analyses and core design methodologies for the next operating cycle.

2.0 EVALUATION

2.1 TS 6.5.14 P_a Revision

The licensee stated in its letter dated October 29, 1999, that the peak containment pressure (P_a), as defined in 10 CFR Part 50, Appendix J, prior to Cycle 14 was 52.64 psig. The current analysis yields a peak pressure of 52.68 psig, which has been rounded up to 53 psig. The change in peak-calculated containment internal pressure was due to modeling changes in the passive heat sinks within the containment.

The licensee further indicated that active and passive heat sinks are modeled in the CONTEMPT-T/28 code. The change in the P_a was a result of the change to a passive heat sink, specifically, the use of Carboline 890 paint to recoat a portion of the containment wall. Carboline 890 has a lower thermal conductivity and a greater allowed film thickness than the Carbo-Zinc 11/Carboline 3912 coating used previously. The assumed thermal conductivity of the containment wall has been revised to allow use of Carboline 890 to recoat up to 1000 square feet of surface. (Carboline, Inc., no longer manufactures the existing coating, Carbo-Zinc 11/Carboline 3912.)

The NRC staff has reviewed the proposed change in the P_a and finds it acceptable because the increase is very small and is within the uncertainty limits of the CONTEMPT-T/28 code. The CONTEMPT-T/28 code is biased to be conservative. In addition, the new P_a value is still below the design limit of 55 psig.

2.2 TS 6.5.5 Methodology List Revision

The licensee stated in its application that the proposed change in the list of methodology documents referenced in TS 6.6.5 is due to the updating of calculational methods by its nuclear fuel vendor. The changes proposed are:

1. EMF-96-029 (PRISM) replaces XN-75-27 (XTGPWR). All neutronic parameters used for the verification of the Palisades Cycle 15 safety analyses were calculated using PRISM. The significant neutronics parameters used in the licensing basis analysis for each event were compared to the Cycle 15 specific values determined by PRISM. This review concluded that the values used in the analyses of record bound the Cycle 15 specific values. In addition, Cycle 15 specific values of MDNBR and LHGR [linear heat generation rate] were calculated for the limiting events using power distributions, including radial augmentation factors, determined by PRISM. As a result, the current licensing calculations for Palisades Cycle 15 are completely supported by neutronics parameters determined by PRISM and references to XTGPWR are no longer necessary.
2. Editorial change to remove the base report and the supplements from the reference because only the sited [sic] reference has been approved.
3. No change.
4. Editorial to change ANF to EMF, remove the supplements from the reference, and change Advanced Nuclear Fuels Corporation to Siemens Power Corporation.
5. Editorial change to remove the base report from the reference because only the sited reference has been approved.
- 6a & 6b. Editorial change to separate current reference 6a because supplement 2 was approved separately from the base report and Supplements 1, 3, and 4.
- 6c. Editorial to change current reference 6b to 6c.
- 6d & 6e. Editorial change to separate current reference 6c because Supplements 1 and 2 were approved separately from Supplements 3 and 4.
- 6f & 6g. Editorial change to add proprietary(P) and change Exxon Nuclear Company to Advanced Nuclear Fuels Corporation.
7. Editorial change to add non-proprietary(NP) to the reference.
8. No change.
9. Editorial change adds Supplement 1 to the reference.

10. A reference is added for the XNB DNB [departure from nucleate boiling] correlation.
11. & 12. Two references are added for the mechanical design methodology.
13. A reference is added for the gadolinia methodology.
14. A reference is added for the generic design criteria.
15. Our current large break LOCA [loss-of-coolant accident] analysis is based on the methodology listed in reference 6. We expect to reanalyze this event using this new methodology during Cycle 15.
16. The current reference 8 (DNB correlation) is removed. A reference is added for the Palisades setpoint methodology which was approved for use in the Palisades design during the NRC review of license Amendment 118, November 15, 1988. (Safety Evaluation Reference 29).

With respect to change number 1 above in which EMF-96-029 (PRISM) replaces XN-75-27 (XTGPWR), the NRC staff has reviewed both of these topical reports and found them to be acceptable.

The NRC staff has reviewed the proposed changes and has found the changes acceptable because they incorporate the appropriate NRC-approved methodologies used in the fuel design for the Palisades core for Cycle 15.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment. The Michigan State official had no comments.

4.0 STATEMENT OF EXIGENT CIRCUMSTANCES

In its October 29, 1999, application, the licensee requested that the application be processed on an exigent basis.

The Commission's regulation at 10 CFR 50.91 provide special exceptions for the issuance of amendments when the usual 30-day notice period cannot be met. An exigency is a case in which the NRC staff and the licensee need to act quickly and time does not permit the Commission to publish a *Federal Register* notice allowing 30 days for prior public comment, and the Commission also determines that the amendment involves no significant hazards considerations. The exigency exists in this case in that the proposed changes are needed to avoid a delay in the startup from the in-progress refueling outage. Based on the licensee's current outage schedule, the proposed changes are needed by November 16, 1999. The need for a change to P_a was identified on or about October 21, 1999, upon completion of the reanalysis of the containment response to a large-break LOCA. The need for that reanalysis

was driven, in part, by a change in the coatings used on some internal containment surfaces during the current refueling outage. The coating formerly used is no longer manufactured. The reanalysis could not be performed sooner because certain physical parameters of the new coating material were not available sooner.

Further, the licensee stated in its November 2, 1999, supplemental letter that the need for a change to the list of methodology documents was not identified sooner because a list of approved methodology documents currently appears in both the TSs and the COLR. The licensee's personnel responsible for maintaining the COLR did not realize that the documents were also listed in the TSs, and the licensee's personnel responsible for maintaining the TSs were unaware that the COLR list of documents had been revised. The discrepancy was noted by the licensee on October 21, 1999, and the licensee initiated the TS change request on the same day.

In accordance with 10 CFR 50.91(a)(6)(i)(B), the Commission used local media to provide reasonable notice to the public in the area surrounding the Palisades plant of the Commission's proposed determination that no significant hazards consideration is involved.

The NRC published a notice of the proposed amendment and requested that any comments on the proposed no significant hazards consideration be provided to the staff by the close of business on November 12, 1999. The notice was published in the Herald Palladium on November 6 thru 8, 1999.

Based on the above, the NRC staff has determined that the licensee has used best efforts to make a timely application and that exigent circumstances are present which warrant processing the requested amendment pursuant to 10 CFR 50.91(a)(6).

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any previously evaluated; or (3) involve a significant reduction in a margin of safety.

In the following evaluation, the licensee has analyzed the proposed amendment to determine if a significant hazards consideration exists:

- A. Does the TS 6.5.14 P_a Revision:
 - a. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change to the calculated peak calculated [sic] containment internal pressure for the design basis loss of coolant accident, P_a, does not alter the assumed initiators to any analyzed event. The probability of an

accident previously evaluated will not be increased by this proposed change.

The Containment Leak Rate Testing Program limits containment leakage to 0.1% of the containment air weight per day with containment pressure at P_a . Since all Palisades radiological consequence analyses are performed assuming design containment pressure (55 psig), the change in P_a will not cause the containment leakage to be above the design value of 0.1% at 55 psig. The consequences of an accident previously evaluated will not be increased by this proposed change.

Therefore, operation of the facility in accordance with the proposed change to TS section 6.5.14 would not involve a significant increase in the probability or consequences of an accident previously evaluated.

- b. Create the possibility of a new [or] different kind of accident from any accident previously evaluated

The proposed change provides a higher peak calculated containment internal pressure for the design basis loss of coolant accident than currently exists in the TS. This change is a result [of] a change to the coatings used on internal containment surfaces. The change does not involve any alteration in the plant configuration (no new or different type of equipment will be installed) or make changes in the methods governing normal plant operation. The change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Therefore, operation of the facility in accordance with the proposed change to TS section 6.5.14 would not create the possibility of a new or different kind of accident from any previously evaluated.

- c. Involve a significant reduction in a margin of safety

The peak calculated containment pressure remains below the containment design pressure of 55 psig. Since all Palisades radiological consequence analyses are performed assuming design containment pressure (55 psig), a change in the peak calculated containment internal pressure of 0.36 psi does not represent a significant change in the margin of safety.

Therefore, operation of the facility in accordance with the proposed change to TS section 6.5.14 does not involve a significant reduction in the margin of safety.

B. Does the TS 6.6.5 Methodology List Revision:

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

The proposed change to the list of methodology documents in Specification 6.6.5 would not increase the probability or consequence of an accident previously evaluated. Accidents previously evaluated will be unaffected by changes in methodology references because they were analyzed using approved methods. The results of these event analyses met their respective acceptance criteria.

Therefore, operation of the facility in accordance with the proposed change to the Technical Specifications would not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed change to the list of methodology documents in Specification 6.6.5 would not create the possibility of a new or different accident than previously analyzed. The proposed change only changes the approved methodology documents. All accidents remain analyzed using approved methodologies.

Therefore, operation of the facility in accordance with the proposed change to the Technical Specifications would not create the possibility of a new or different kind of accident from any previously evaluated.

- c. Involve a significant reduction in a margin of safety.

The proposed change to the list of methodology documents in Specification 6.6.5 would not reduce the margin of safety. Because all analyses [sic] use approved methodologies and their results satisfy their respective acceptance criteria, the margin of safety is not reduced.

Therefore, operation of the facility in accordance with the proposed change to the Technical Specifications would not involve a significant reduction in a margin of safety.

Based on the above considerations, including the staff's safety evaluation, the staff concludes that the amendment meets the standards set forth in 10 CFR 50.92 for a no significant hazards determination. Therefore, the staff makes a final determination that the proposed amendment involves no significant hazards consideration.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: November 15, 1999