

November 7, 1996

Mr. Thomas C. Bordine
Manager, Licensing
Palisades Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

SUBJECT: PALISADES PLANT - ISSUANCE OF AMENDMENT RE: ONE-TIME DEFERRAL OF
PRIMARY COOLANT PUMP FLYWHEEL INSPECTION (TAC NO. M96469)

Dear Mr. Bordine:

The Commission has issued the enclosed Amendment No. 175 to Facility Operating License No. DPR-20 for the Palisades Plant. The amendment consists of changes to the Technical Specifications in response to your application dated August 14, 1996, as supplemented October 18, 1996, and your related application of January 18, 1996.

The amendment allows one-time deferral of the inspection of reactor coolant pump (RCP) flywheels from the Cycle 12 refueling outage scheduled to begin on November 2, 1996, to the next refueling outage.

A copy of our Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Signed: L. Tran
for Robert G. Schaaf, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures: 1. Amendment No. 175 to DPR-20
2. Safety Evaluation

cc w/encl: See next page

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

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Sincerely,

A handwritten signature in dark ink, appearing to read "R. G. Schaaf", is positioned above the typed name.

Robert G. Schaaf, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures: 1. Amendment No. 175 to DPR-20
2. Safety Evaluation

cc w/encl: See next page

Mr. Thomas C. Bordine
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Palisades Plant

cc:

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August 1996



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

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 175
License No. DPR-20

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Consumers Power Company (the licensee) dated August 14, 1996, as supplemented October 18, 1996, and January 18, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to the license amendment and Paragraph 2.C.(2) of Facility Operating License No. DPR-20 is hereby amended to read as follows:

The Technical Specifications contained in Appendix A, as revised through Amendment No. 175, and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. CPCo shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert G. Schaaf, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

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Attachment: Changes to the Technical
Specifications

Date of Issuance: November 7, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 175

FACILITY OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

REMOVE

6-8

INSERT

6-8

6.5.5 Reserved

6.5.6 Primary Coolant Pump Flywheel Surveillance Program

Surveillance of the primary coolant pump flywheels shall consist of a 100% volumetric inspection of the upper flywheels each refueling*.

6.5.7 Inservice Inspection and Testing Program

This program provides controls for inservice inspection and testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following:

- a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda (B&PV Code) as follows:

| <u>B&PV Code terminology for inservice testing activities</u> | <u>Required interval for performing inservice testing activities</u> |
|---|--|
| Weekly | ≤ 7 days |
| Monthly | ≤ 31 days |
| Quarterly or every 3 months | ≤ 92 days |
| Semiannually or every 6 months | ≤ 184 days |
| Every 9 months | ≤ 276 days |
| Yearly or annually | ≤ 366 days |
| Biennially or every 2 years | ≤ 731 days |

- b. The provisions of Surveillance Requirement 4.0.2 are applicable to the above required intervals for performing inservice testing activities;
- c. The provisions of Surveillance Requirement 4.0.3 are applicable to inservice testing activities; and
- d. Nothing in the B&PV Code shall be construed to supersede the requirements of any Technical Specification.

★

The volumetric examination of the upper primary coolant pump flywheels is not required during the refueling outage at the end of cycle 12.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. DPR-20
CONSUMERS POWER COMPANY
PALISADES PLANT
DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated August 14, 1996, as supplemented October 18, 1996, Consumers Power Company (the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-20 for the Palisades Plant. The proposed amendment requested a one-time deferral of the inspection of reactor coolant pump (RCP) flywheels from the Cycle 12 refueling outage scheduled to begin on November 2, 1996, to the next refueling outage. The October 18, 1996, letter provided an updated TS page. This change was within the scope of the original application and did not change the staff's initial proposed no significant hazards consideration determination.

This submittal is related to an earlier TS change request dated January 18, 1996, which was submitted with a supporting document, Topical Report SIR-94-080, "Relaxation of Reactor Coolant Pump Flywheel Inspection Requirements." Since this topical report is identical to the one that was submitted by Entergy Operations on April 4, 1995, for Arkansas Nuclear One (ANO) Units 1 and 2 as the lead plants for the topical report review, the staff would still consider Entergy Operations as the point of contact for any matter concerning the review of the topical report. The topical report was developed by Structural Integrity Associates, Inc. (SIA) to provide a basis for the complete elimination of the RCP flywheel inspections for Combustion Engineering Owners Group (CEOG) plants including ANO Units 1 and 2, Millstone Unit 2, Palisades, St. Lucie Units 1 and 2, and Waterford Unit 3. Since the projected date of issuance of the staff's safety evaluation report for the topical report review is beyond the 1996 outage of Palisades, the licensee made this request for a one-cycle deferral of the flywheel inspection.

2.0 BACKGROUND

10 CFR Part 50, Appendix A, General Design Criterion 4 (GDC 4), requires that structures, systems, and components important to safety be protected against the effects of missiles that might result from equipment failures. In accordance with the inspection guidelines of Regulatory Guide 1.14, "Reactor Coolant Pump Flywheel Integrity," the licensee specifies in TS 6.5.6 (formerly TS Table 4.3.2) that a 100% volumetric examination of the upper primary (reactor) coolant pump flywheels be conducted at each refueling outage. From 1970 to 1993, the licensee had conducted 11 ultrasonic testing (UT) examinations of all four RCP flywheels at an average interval of 2.2 years.

3.0 EVALUATION

Consumers Power Company and certain other CE plant licensees, working through the CEOG contracting with SIA, performed fracture mechanics analyses to justify elimination of the inspection requirement in the TS. SIA conducted an evaluation and analyses of flywheel integrity including plant-specific data from ANO Units 1 and 2, St. Lucie Units 1 and 2, Millstone Unit 3, Palisades, and Waterford Unit 3. The SIA analyses included a review of flywheel designs, materials, inspection results, stress and fracture mechanics analyses, and American Society of Mechanical Engineers (ASME) Code allowable flaw sizes.

The Palisades flywheel assembly is of the "hollow" type with its larger flywheel fitted over a spoked center section and bolted down to a smaller separate bore lower flywheel. The top flywheel has a bore of 34 inches, an outside diameter of 72 inches, and a thickness of 7 inches. The keyway is 0.5 inch wide and 0.25 inch deep. The material is ASTM-A-108 low carbon steel. The top wheel is much larger in diameter than the bottom wheel, therefore, testing and analysis is performed on the top flywheel only. From 1970 to 1993, the licensee followed the TS requirements and had completed 11 volumetric examinations of all four RCP top flywheels at an average interval of 2.2 years. From these inspection results, the licensee did not identify any indications that present structural integrity concerns or conditions that could lead to the failure of a flywheel.

The staff's review of the fracture mechanics analyses in SIR-94-080 was delayed pending receipt of information from Entergy Operations, which includes (1) demonstration of member plants' UT detection capability to detect flaw sizes of 0.25 inch, (2) a revised copy of Figures 6-3 to 6-14 to add the stress intensity factor due to shrink fit at the proper speed to the stress intensity factor due to centrifugal load, (3) the remaining shrink fit for accident conditions for all flywheels, and (4) past RCP flywheel maintenance records in terms of maintenance frequency and level of disassembly involved. Information regarding the first three items is needed for the staff to resume the review of SIR-94-080. The fourth is needed in case any special consideration will be given to the flywheels of CEOG plants.

Regardless of the pending additional information, the staff determined that the proposed inspection deferment for one operating cycle would not adversely affect the structural integrity of the flywheels. This decision is based on (1) the favorable results from all 11 volumetric examinations conducted by Palisades since 1970, (2) the plant's lower operating speed of 900 rpm and design overspeed of 1125 rpm as compared to the industry norm of 1200 rpm and 1500 rpm, and (3) the much shorter time involved in the requested one-cycle deferral as compared to the complete elimination of the inspection requirement from the TS as requested in the January 18, 1996, submittal. Based on these considerations, the flywheel inspection may be deferred from the Cycle 12 refueling outage scheduled for November 2, 1996, to the next refueling outage. Therefore, the staff finds the proposed TS change to be acceptable.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (61 FR 50054). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The staff 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.

Principal Contributor: S. Sheng

Date: November 7, 1996

DATED: November 7, 1996

AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. DPR-20-PALISADES

Docket File

PUBLIC

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