

January 25, 1991

Docket No. 50-255

Mr. Gerald B. Slade
Plant General Manager
Palisades Plant
27780 Blue Star Memorial Highway
Covert, Michigan 49043

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Dear Mr. Slade:

SUBJECT: AMENDMENT NO. 134 TO PROVISIONAL OPERATING LICENSE NO. DPR-20:
(TAC NO. 77565)

The Commission has issued the enclosed Amendment No. 134 to Provisional Operating License No. DPR-20 for the Palisades Plant. This amendment consists of changes to the Technical Specifications in response to your application dated August 21, 1990.

This amendment removes requirements that are no longer necessary due to the requirements added, in Amendment 130, to Section 4.0.5 of the Technical Specifications. Additionally, inappropriate bases statements that pertain to the original steam generator tube plugging criteria are deleted.

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,

/s/

Brian Holian, Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 134 to License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

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D/PD31:DRP345
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PALISADES AMEND 77565

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

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Plant General Manager
Palisades Plant
27780 Blue Star Memorial Highway
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Sincerely,

A handwritten signature in black ink, appearing to read "Brian Holian".

Brian Holian, Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 134 to License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

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Palisades Plant

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

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 134
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 21, 1990, 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; and
 - 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 this license amendment and Paragraph 3.B. of Provisional Operating License No. DPR-20 is hereby amended to read as follows:

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Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 134, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 25, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 134

PROVISIONAL 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 the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

INSERT

iv

iv

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3-1b

3-1c

3-1c

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PALISADES PLANT TECHNICAL SPECIFICATIONS
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3.1 PRIMARY COOLANT SYSTEM

Applicability

Applies to the operable status of the primary coolant system.

Objective

To specify certain conditions of the primary coolant system which must be met to assure safe reactor operation.

Specifications

3.1.1 Operable Components

a. At least one primary coolant pump or one shutdown cooling pump with a flow rate greater than or equal to 2810 gpm shall be in operation whenever a change is being made in the boron concentration of the primary coolant and the plant is operating in cold shutdown or above, except during an emergency loss of coolant flow situation. Under these circumstances, the boron concentration may be increased with no primary coolant pumps or shutdown cooling pumps running.

b. Four primary coolant pumps shall be in operation whenever the reactor is operated above hot shutdown, with the following exception:

Before removing a pump from service, thermal power shall be reduced as specified in Table 2.3.1 and appropriate corrective action implemented. With one pump out of service, return the pump to service within 12 hours (return to four-pump operation) or be in hot shutdown (or below) with the reactor tripped (from the C-06 panel, opening the 42-01 and 42-02 circuit breakers) within the next 12 hours. Start-up (above hot shutdown) with less than four pumps is not permitted and power operation with less than three pumps is not permitted.

c. The measured four primary coolant pumps operating reactor vessel flow shall be 124.3×10^6 lb/hr or greater, when corrected to 532°F.

d. Both steam generators shall be capable of performing their heat transfer function whenever the average temperature of the primary coolant is above 325°F.

e. Deleted

PRIMARY COOLANT SYSTEM (Cont'd)Basis (Cont'd)

measurement; ± 0.06 for ASI measurement; ± 50 psi for pressurizer pressure; $\pm 7^\circ\text{F}$ for inlet temperature; and 3% measurement and 3% bypass for core flow. In addition, transient biases were included in the derivation of the following equation for limiting reactor inlet temperature: (4)

$$T_{\text{inlet}} \leq 543.3 + .0575(P-2060) + 0.00005(P-2060)**2 + 1.173(W-120) - .0102(W-120)**2$$

The limits of validity of this equation are:

$$1800 \leq \text{Pressure} \leq 2200 \text{ psia}$$

$$100.0 \times 10^6 \leq \text{Vessel Flow} \leq 130 \times 10^6 \text{ lb/h}$$

ASI as shown in Figure 3.0

With measured primary coolant system flow rates $> 130 \text{ M lbm/hr}$, limiting the maximum allowed inlet temperature to the T_{Inlet} LCO at 130 M lbm/hr increases the margin to DNB for higher PCS flow rates.

The Axial Shape Index alarm channel is being used to monitor the ASI to ensure that the assumed axial power profiles used in the development of the inlet temperature LCO bound measured axial power profiles. The signal representing core power (Q) is the auctioneered higher of the neutron flux power and the Delta-T power. The measured ASI calculated from the excore detector signals and adjusted for shape annealing (Y_T) and the core power constitute an ordered pair (Q, Y_T). An alarm signal is activated before the ordered pair exceed the boundaries specified in Figure 3.0.

The requirement that the steam generator temperature be \leq the PCS temperature when forced circulation is initiated in the PCS ensures that an energy addition caused by heat transferred from the secondary system to the PCS will not occur. This requirement applies only to the initiation of forced circulation (the start of the first primary coolant pump) when the PCS cold leg temperature is $< 430^\circ\text{F}$. However, analysis (Reference 6) shows that under limited conditions when the Shutdown Cooling System is isolated from the PCS, forced circulation may be initiated when the steam generator temperature is higher than the PCS cold leg temperature.

References

- (1) Updated FSAR, Section 14.3.2.
- (2) Updated FSAR, Section 4.3.7.
- (3) Deleted
- (4) ANF-87-150(NP), Volume 2, Section 15.0.7.1
- (5) ANF-88-108
- (6) Consumers Power Company Engineering Analysis EA-A-NL-89-14-1

3.1 PRIMARY COOLANT SYSTEM (contd)

The steam generator tube leakage limit ensures that the dosage contributed from the tube leakage will be limited to a small fraction of Part 100 limits in the event of a steam generator tube rupture or steam line break. The leakage limit also ensures that steam generator tube integrity is maintained in the event of a main steam line rupture or under LOCA conditions. /
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Operation during short periods of time when the leakage measurement sensitivity is reduced is provided for by an added allowance to the leakage limit. Leakage limits are not required when the plant is not at power.

References

- (1) FSAR, Amendment 15, Question 4.3.
- (2) FSAR, Section 11, Table 11-6.

4.4 Deleted

4.4 Deleted



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 134 TO PROVISIONAL OPERATING LICENSE NO. DPR-20
CONSUMERS POWER COMPANY
PALISADES PLANT
DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated August 21, 1990, Consumers Power Company (the licensee) requested amendment to the Technical Specifications (TSs) appended to Provisional Operating License No. DPR-20 for the Palisades Plant. The proposed amendment would remove requirements that are no longer necessary due to the requirements added, in Amendment 130, to section 4.0.5 of the Technical Specifications. Additionally, inappropriate bases statements that pertain to the original steam generator tube plugging criteria would be deleted. Specifically, the following changes would be made: (1) TS Section 3.1.1.e would be deleted and the bases pages revised; (2) Section 3.1.5 bases would be changed; and (3) Section 4.4 and its associated bases would be deleted.

2.0 DISCUSSION

The current Palisades Technical Specifications Section 3.1.1.e contains primary and secondary hydrostatic and leak test pressure and temperature requirements. Section 4.4 also contains leak test requirements in addition to primary coolant system post repair weld examination requirements. The requirements in TS Section 3.1.1.e and 4.4 are also requirements of the ASME Boiler and Pressure Vessel Code Section XI as implemented by Technical Specification Section 4.0.5.

The current bases to Section 3.1.5, Primary Coolant System Leakage Limits, contains a reference to a 64% degradation tube plugging criteria established because of steam generator tube wastage problems. The Palisades replacement steam generators are not expected to have the tube wastage problems of the original steam generators. The ASME Code, Section XI, establishes a 40% degradation limit.

3.0 EVALUATION

Technical Specification 4.0.5, added by Amendment 130, implements surveillance requirements of the ASME Code Section XI for inservice inspection and testing of ASME Code Class 1, 2, and 3 components. The licensee currently adheres to ASME Code Section XI, 1983 Edition, and Summer 1983 Addenda.

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Technical Specification Section 3.1.1.e items 2 through 5 are essentially covered by Section XI of the Code. Articles IWB-5000 and IWC-5000 establish requirements for system pressure tests including leak tests and hydrostatic tests. Under these requirements, the system test pressures and temperatures will be established in accordance with the system operating conditions, heat-up limitations specified for the system, and the plant Technical Specifications.

The maximum differential pressure of 1380 psi, primary to secondary, and 350 psi, secondary to primary, were established due to the steam generator wastage problems and establishment of a 64% degradation tube plugging criteria. These conditions are noted in the current bases statements. Specific differential pressure limitations for the replacement steam generators have been specified to the licensee by the supplier in accordance with Section III of the Code. The licensee states that these limits will be specified in plant procedures. The specified differential pressure limits for the replacement steam generators are 2100 psi, primary to secondary, and 1021 psi, secondary to primary, at a minimum temperature of 100°F on the secondary side.

The current bases to TS 3.1.5 also contains reference to the obsolete 64% degradation tube plugging criteria. The proposed revision to the TS 3.1.5 bases replaces this reference with a paragraph consistent with the bases in the Standard Technical Specifications for primary coolant system leakage limits.

Technical Specification Section 4.4a requires the primary coolant system leak test to be conducted at not less than a PCS pressure of 2135 psig. Use of Section XI of the ASME Code would require the test to be conducted at not less than the nominal operating pressure, which per TS 3.1.1f cannot exceed 2100 psia (2115 psig). The current bases to TS 4.4 states that a PCS pressure fluctuation of ± 50 psi is normal. With this consideration, the difference in the test pressure lower limits is negligible and will have no effect on the test results.

Technical Specification Section 4.4b and c contain specifications for non-destructive examinations (NDE) of PCS "strength" welds. NDE requirements are also established by TS 4.0.5 via Section XI of the ASME Code. These requirements, which are accepted by the staff through approval of this edition of the ASME Code, are sufficient to replace the requirements of TS Section 4.4b and c.

In summary, the licensee currently has Technical Specifications that are redundant and no longer necessary due to the requirements added to Section 4.0.5 of the Palisades Technical Specifications by Amendment 130. Also, bases statements pertaining to the original steam generators are now obsolete. Therefore, these proposed TS changes are considered acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in 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 a change in 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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 this amendment.

5.0 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff therefore concludes that the proposed changes are acceptable.

Principal Contributors: R. L. Bywater

Date: January 25, 1991