

May 18, 1992

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

Dear Mr. Slade:

SUBJECT: PALISADES PLANT - AMENDMENT NO. 145 TO FACILITY OPERATING LICENSE
NO. DPR-20 (TAC NO. M80954)

The Commission has issued the enclosed Amendment No. 145 to Facility Operating License No. DPR-20 for the Palisades Plant. This amendment consists of changes to the Technical Specifications in response to your application dated May 30, 1991.

This amendment changes the Variable High Power Trip (VHPT) reset margin from 10% to 15%. The VHPT is incorporated in the reactor protection system to provide a reactor trip for transients exhibiting a core power increase from any initial power level. This amendment does not change the range over which the VHPT functions.

Specifically, Technical Specification Table 2.3.1, "Reactor Protective System Trip Setting Limits," is changed to incorporate the new 15% reset margin. The Basis and References sections, relating to this Technical Specification, are updated to reflect the set point change.

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,

Original signed by

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

Enclosures:

- 1. Amendment No. 145 DPR-20
- 2. Safety Evaluation

cc w/enclosures:

See next page

OFC :LA:PDIII-1 ^{MLK} :PE:PDIII-1 ^{BCH} :PM:PDIII-1 ^{BCH} :OGC ^{Bart} :D:PDIII-1 :
 NAME :MShuttleworth :MGamberoni :BHolian : :LMarsh :
 DATE : 3/27/92 : 3/31/92 : 3/31/92 : 4/12/92 : 4/12/92 :

NRC FILE CENTER COPY

JFD

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Consumers Power Company

Palisades Plant

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Nuclear Facilities and Environmental
Monitor Section Office
Division of Radiological Health
Department of Public Health
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P. O. Box 30195
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DATED: May 18, 1992

AMENDMENT NO. 145 TO FACILITY OPERATING LICENSE NO. DPR-20-PALISADES

Docket File

NRC & Local PDRs

PDIII-1 Reading

Palisades Plant File

B. Boger

J. Zwolinski

L. Marsh

M. Shuttleworth

B. Holian OGC-WF

D. Hagan, 3302 MNBB

G. Hill (4), P-137

Wanda Jones, MNBB-7103

C. Grimes, 11/F/23

Tech Branch that had input in package (Principal Contributor of SE)

ACRS (10)

GPA/PA

OC/LFMB

W. Shafer, R-III

cc: Plant Service list



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

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 145
License No. DPR-20

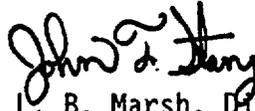
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Consumers Power Company (the licensee) dated May 30, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 145, 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: May 18, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 145

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

REMOVE

2-5
2-6

INSERT

2-5
2-6

TABLE 2.3.1

Reactor Protective System Trip Setting Limits

	<u>Four Primary Coolant Pumps Operating</u>	<u>Three Primary Coolant Pumps Operating⁽⁴⁾</u>
1. Variable High Power ⁽¹⁾	≤15% above core power, with a minimum setpoint of ≤30% of rated power and a maximum of ≤106.5% of rated power	≤15% above core power with a minimum setpoint of ≤15% rated power and a maximum of ≤49% of rated power
2. Primary Coolant Flow ⁽²⁾	≥95% of Primary Coolant Flow With Four Pumps Operating	≥60% of Primary Coolant Flow With Four Pumps Operating
3. High Pressure Pressurizer	≤2255 Psia	≤2255 Psia
4. Thermal Margin/Low Pressure ^(2,3)	$P_{trip} \geq$ Applicable Limits	Replaced by Variable High Power Trip and 1750 Psia Minimum Low-Pressure Setting
5. Steam Generator Low Water Level	Not Lower Than the Center Line of Feed-Water Ring	Not Lower Than the Center Line of Feed-Water Ring
6. Steam Generator Low Pressure ⁽²⁾	≥500 Psia	≥500 Psia
7. Containment High Pressure	≤3.70 Psig	≤3.70 Psig

- (1) The VHPT can be 30% of rated power for power levels ≤ 20% of rated power.
- (2) May be bypassed below 10⁻⁴% of rated power provided auto bypass removal circuitry is operable. For low power physics tests, thermal margin/low pressure, primary coolant flow and low steam generator pressure trips may be bypassed until their react points are reached (approximately 1750 psia and 500 psia, respectively), provided automatic bypass removal circuitry at 10⁻¹% rated power is operable.
- (3) Minimum trip setting shall be 1750 psia.
- (4) Operation with three pumps for a maximum of 12 hours is permitted to provide a limited time for repair/pump restart, to provide for an orderly shutdown or to provide for the conduct of reactor internals noise monitoring test measurements.

2.3 LIMITING SAFETY SYSTEM SETTINGS - REACTOR PROTECTIVE SYSTEM (Contd)

Basis

The reactor protective system consists of four instrument channels to monitor selected plant conditions which will cause a reactor trip if any of these conditions deviate from a preselected operating range to the degree that a safety limit may be reached.

1. Variable High Power - The variable high power trip (VHPT) is incorporated in the reactor protection system to provide a reactor trip for transients exhibiting a core power increase starting from any initial power level (such as the boron dilution transient). The VHPT system provides a trip setpoint no more than a predetermined amount above the indicated core power ($\leq 15\%$)⁽¹⁾ and also sets a maximum value. Operator action is required to increase the setpoint as core power is increased; the setpoint is automatically decreased as core power decreases. Provisions have been made to select different set points for three pump and four pump operations.

During normal plant operation with all primary coolant pumps operating, reactor trip is initiated when the reactor power level reaches 106.5% of indicated rated power. Adding to this the possible variation in trip point due to calibration and instrument errors, the maximum actual steady state power at which a trip would be actuated is 115%, which was used for the purpose of safety analysis.⁽⁴⁾

2. Primary Coolant System Low Flow - A reactor trip is provided to protect the core against DNB should the coolant flow suddenly decrease significantly.⁽³⁾ Flow in each of the four coolant loops is determined from a measurement of pressure drop from inlet to outlet of the steam generators. The total flow through the reactor core is measured by summing the loop pressure drops across the steam generators and correlating this pressure sum with the pump calibration flow curves. The percent of normal core flow is shown in the following table:

4 Pumps	100.0%
3 Pumps	74.7%

During four-pump operation, the low-flow trip setting of 95% insures that the reactor cannot operate when the flow rate is less than 93% of the nominal value considering instrument errors.⁽⁴⁾



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.145 TO FACILITY OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated May 30, 1991, Consumers Power Company (the licensee) requested amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-20 for the Palisades Plant. The proposed amendment would change the Variable High Power Trip (VHPT) reset margin from 10% to 15%. The VHPT is incorporated in the reactor protection system to provide a reactor trip for transients exhibiting a core power increase from any initial power level. This change would not alter the trip set point range over which the VHPT functions, i.e., 30% of rated power to 106.5% of rated power for four reactor coolant pumps (RCPs) operating and 15% to 48% for three RCPs operating.

2.0 EVALUATION

Technical justification for the proposed TS change is contained in a plant specific topical report, ANF-90-181 which was included in the licensee's submittal. ANF-90-181 addresses the impact of the proposed TS change on all Standard Review Plan (SRP) Chapter 15 events for Palisades. Most events are dispositioned as either not applicable (e.g., boiling water reactor event only), or bounded by other Updated Final Safety Analysis Report (UFSAR) analyses. Two events were reanalyzed with the revised VHPT set points: 15.4.2 (UFSAR 14.2.2.3), "Uncontrolled Control Rod Bank Withdrawal at Power Operation Conditions," and 15.4.3(5) (UFSAR 14.2.2.4), "Control Rod Misoperation - Single Control Rod Withdrawal." The analyses for these events were performed with approved Advanced Nuclear Fuels Corporation (ANF, now Siemens Nuclear Power Corporation, SNP) methodologies and demonstrated that the acceptance criteria regarding minimum departure from nucleate boiling ratio (MDNBR) and peak linear heat rate (LHR) are met assuming the revised VHPT set points. We find the justification for the revised VHPT set points acceptable based on reference to acceptable analyses performed using methodologies approved by the NRC staff.

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 State official had no comments.

4.0 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. 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 (56 FR 41577). Accordingly, this 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 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, (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: F. Orr

Date: May 18, 1992