

Docket No. 50-255
LS05-82-04-044

April 14, 1982

Mr. David Vandewalle
Nuclear Licensing Administrator
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Dear Mr. Vandewalle:

SUBJECT: TECHNICAL SPECIFICATIONS CHANGE RELATED TO SHUTDOWN MARGIN
REQUIREMENTS - PALISADES PLANT

The Commission has issued the enclosed Amendment No. 70 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 May 5, 1980.

The change clarifies the implementation of the Appendix A Technical
Specifications with regard to shutdown margin requirements with less
than four primary coolant pumps in operation.

Certain modifications to your proposed changes were necessary to meet
our criteria. These modifications have been discussed with and agreed
to by your staff.

Copies of our Safety Evaluation and the related Notice of Issuance are
also enclosed.

Sincerely,

Original signed by

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Enclosures:

1. Amendment No. 70 to
License No. DPR-20
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
See next page

*no legal objection to
amendment 70 - FR notice only
4-9-82
Burch*

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DSU USE ET (04)



DISTRIBUTION
Docket
NRC PDR
Local PDR
ORB Reading
NSIC
DCrutchfield
HSmith
TWambach
OELD
OI&E
ACRS (10)
SEP8
RDiggs
LSchneider
TBarnhart (4)

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OFFICE	DL: ORB #5	DL: ORB #5	OELD	DL: ORB #5	DL: AD/SA	DSF: CPB	
SURNAME	TWambach:cc	HSmith		DCrutchfield	GLainas	CBerlinger	
DATE	3/29/82	4/15/82		4/14/82	4/13/82	4/16/82	

Mr. David J. Vandewalle

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April 14, 1982

CC

M. I. Miller, Esquire
Isham, Lincoln & Beale
Suite 4200
One First National Plaza
Chicago, Illinois 60670

Mr. Paul A. Perry, Secretary
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Judd L. Bacon, Esquire
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

CHERRY & FLYNN
Suite 3700
Three First National Plaza
Chicago, Illinois 60602

Ms. Mary P. Sinclair
Great Lakes Energy Alliance
5711 Summerset Drive
Midland, Michigan 48640

William J. Scaflon, Esquire
2034 Pauline Boulevard
Ann Arbor, Michigan 48103

Township Supervisor
Covert Township
Route 1, Box 10
Van Buren County, Michigan 49043

Office of the Governor (2)
Room 1 - Capitol Building
Lansing, Michigan 48913

Palisades Plant
ATTN: Mr. Robert Montross
Plant Manager
Covert, Michigan 49043

U. S. Environmental Protection
Agency
Federal Activities Branch
Region V Office
ATTN: Regional Radiation Representative
230 South Dearborn Street
Chicago, Illinois 60604

Charles Bechhoefer, Esq., Chairman
Atomic Safety and Licensing Board
Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. George C. Anderson
Department of Oceanography
University of Washington
Seattle, Washington 98195

Dr. M. Stanley Livingston
1005 Calle Largo
Santa Fe, New Mexico 87501

Resident Inspector
c/o U. S. NRC
Palisades Plant
Route 2, P. O. Box 155
Covert, Michigan 49043

James G. Keppler, Regional Administrator
Nuclear Regulatory Commission, Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137



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

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 70
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 5, 1980, 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.

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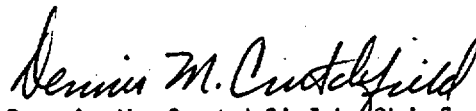
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Provisional Operating License No. DPR-20 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 70 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 14, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 70
PROVISIONAL OPERATING LICENSE NO. DPR-20
DOCKET NO. 50-255

Revise Appendix A Technical Specifications by removing the following page and by inserting the enclosed page. The revised page contains the captioned amendment number and marginal line indicating the area of change.

PAGE

3-58

3.10 CONTROL ROD AND POWER DISTRIBUTION LIMITS

Applicability

Applies to operation of control rods and hot channel factors during operation.

Objective

To specify limits of control rod movement to assure an acceptable power distribution during power operation, limit worth of individual rods to values analyzed for accident conditions, maintain adequate shutdown margin after a reactor trip and to specify acceptable power limits for power tilt conditions.

Specifications

3.10.1 Shutdown Margin Requirements

- a. With four primary coolant pumps in operation at hot shutdown and above, the shutdown margin shall be 2%.
- b. With less than four primary coolant pumps in operation at hot shutdown and above, boration shall be immediately initiated to increase and maintain the shutdown margin at $\geq 3.75\%$.
- c. At less than the hot shutdown condition, boron concentration shall be shutdown boron concentration.
- d. If a control rod cannot be tripped, shutdown margin shall be increased by boration as necessary to compensate for the worth of the withdrawn inoperable rod.
- e. The drop time of each control rod shall be no greater than 2.5 seconds from the beginning of rod motion to 90% insertion.

3.10.2 Individual Rod Worth

- a. The maximum worth of any one rod in the core at rated power shall be equal to or less than 0.6% in reactivity.
- b. The maximum worth of any one rod in the core at zero power shall be equal to or less than 1.2% in reactivity.

3.10.3 Power Distribution Limits

- a. The linear heat generation rate at the peak power Elevation z shall not exceed:

$$15.28 \text{ kW/Ft} \times F_A(Z) \text{ for ENC Fuel Types}$$

$$14.12 \text{ kW/Ft} \times F_A(Z) \text{ for D Type Fuel}$$

where the function $F_A(Z)$ is shown in Figure 3.9. If the power distribution is double peaked, both peaks shall satisfy the criterion. Appropriate consideration shall be given to the following factors:

- (1) A flux peaking augmentation factor of 1.0,
- (2) A measurement calculational uncertainty factor of 1.10,



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 70 TO PROVISIONAL OPERATING LICENSE NO. 20

CONSUMERS POWER COMPANY

PALISADES NUCLEAR PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By a letter dated May 5, 1980, Consumers Power Company (the licensee) proposed changes to the Technical Specifications (TSs) appended to Provisional Operating License No. DPR-20 for the Palisades Nuclear Plant. The change clarifies the implementation of the TSs with regard to shutdown margin requirements with less than four primary coolant pumps in operation.

2.0 BACKGROUND

The Palisades Technical Specifications, Section 3.1.1.c, allows the plant to be operated with less than four primary coolant pumps (PCPs) running. However, Section 3.10.1.b, as it presently exists, will be violated if this is done before the 3.75% shutdown margin is obtained. The proposed Technical Specification change to Section 3.10.1.b will allow the operator to operate the plant with less than four PCPs running while increasing the SDM to $\geq 3.75\%$.

3.0 EVALUATION

As part of the application for operation at power levels up to 2530 MWt (Amendment 31, November 1, 1977) the steam line break accident was reanalyzed for two loop (four pump) operation at both full power and zero power conditions. Both analyses assumed a shutdown margin of $-2.0\% \Delta p$. For the 102% power case a MDNBR of 1.30 and peak power of 464 MWt were predicted. For the zero power case a MDNBR of 1.41 and peak power of 693 MWt were predicted.

The steam line break accident was also analyzed for less than four operating primary coolant pumps (PCPs) since limited operation (12 hours) is authorized at partial power following the trip of one or two PCPs. The most severe case was determined to be for 1 loop operation at zero power conditions. The two active pumps were assumed to be located in the ruptured loop. The analysis was performed to determine the required shutdown margin to just prevent return to power even though some return to power would be allowed for this accident. It was shown that a shutdown margin of $3.75\% \Delta p$ would be required.

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In the event that a PCP needs to be shutdown (high vibration, seal leak, etc), the shutdown margin (SDM) will be less than the required 3.75%, even while taking the SDM of the control rods into account. However, if the operator waits to shut down the PCP until the SDM is increased to 3.75%, approximately 30 minutes, the PCP would be severely damaged or the plant operated in an unsafe condition. Therefore, since it is highly improbable that a major accident as described above would occur in the ensuing 30 minutes required to borate, we conclude that the proposed change is acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: April 14, 1982

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-255CONSUMERS POWER COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO PROVISIONAL
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 70 to Provisional Operating License No. DPR-20, issued to Consumers Power Company (the licensee), which revised the Technical Specifications for operation of the Palisades Plant (facility) located in Van Buren County, MI . This amendment is effective as of its date of issuance.

The amendment approves the change which clarifies the implementation of the Appendix A Technical Specifications with regard to shutdown margin requirements with less than four primary coolant pumps in operation.

The application for amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.


The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

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For further details with respect to this action, see (1) the application for amendment dated May 5, 1980, (2) Amendment No. 70 to License No. DPR-20, and (3) the Commission's related Safety Evaluation. These items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Kalamazoo Public Library, 315 South Rose Street, Kalamazoo, Michigan 49006. A single copy of items (2) and (3) may be obtained by request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 14th day of April, 1982.

FOR THE NUCLEAR REGULATORY COMMISSION


Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing