JUL 27 1979

Docket No. 50-255

REGULATORY DOCKET FILE COPY

Mr. David Bixel
Nuclear Licensing Administrator
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Dear Mr. Bixel:

The Commission has issued the enclosed Amendment No. 50 to Provisional Operating License No. DPR-20 for the Palisades Plant. This amendment consists of changes to the Technical Specifications in response to your request dated March 6, 1979, as supplemented by letter dated May 17, 1979.

This amendment allows use of a new in-core detector system.

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

Sincerely,

Original Signed by:
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:
1. Amendment No. 50 to DPR-20
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
See next page

790823 0646

DISTRIBUTION:

Docket 50-255	HSmith	OPA(CMiles)
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DATE	7/16/79	7/16/79	7/17/79	7/19/79	7/23/79	7/25/79

NRC FORM 318 (9-76) NRCM 0240 ★ U.S. GOVERNMENT PRINTING OFFICE: 1978 - 265 - 769

Hazel Re: in-core detector system

William O. Miller, Chief
License Fee Management Branch, ADM

Date: 3/16/79
Amended Form Date:

FACILITY AMENDMENT CLASSIFICATION - DOCKET NO(S). 50-255

Licensee: Consumers Power
Plant Name and Unit(s): Palisades
License No(s): DPR-20 Mail Control No: 7903090279
Request Dated: 3/6/79 Fee Remitted: Yes ✓ No
Assigned TAC No: 11523
Licensee's Fee Classification: Class I ___, II ✓, III ___, IV ___, V ___, VI ___, None ___.

"Final Form"

Amendment No. 50 Date of Issuance 7/27/79

☒ 1. ~~This request has been reviewed by DOR/DPM in accordance with Section 170.22 of Part 170 and is properly categorized.~~ Our initial fee determination is hereby affirmed R Silver 7/23/79 Date

☒ 2. This request is incorrectly classified and should be properly categorized as Class III. Justification for classification or reclassification: * The application will involve a single safety issue and is not administrative

☐ 3. Additional information is required to properly categorize the request: in nature. ~~The review will involve safety significance~~ and does not involve a significant hazards consideration.

☐ 4. This request is a Class ___ type of action and is exempt from fees because it:

(a) ___ was filed by a nonprofit educational institution,

(b) ___ was filed by a Government agency and is not for a power reactor,

(c) ___ is for a Class ___ (can only be a I, II, or III) amendment which results from a written Commission request dated ___ for the application and the amendment is to simplify or clarify license or technical specifications, has only minor safety significance, and is being issued for the convenience of the Commission, or

(d) ___ other (state reason therefor): ___

* $2800 remitted by letter dated 3/30/79

LP 3/16/79
RE
R. Silver 3/16/79
Date

Dennis L Zeman
Division of Operating Reactors/Project Management

☐ The above request has been reviewed and is exempt from fees. (Class III fee covered)

Attached: incoming
FNS 6/78

William O. Miller, Chief
License Fee Management Branch

Date

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
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Jackson, Michigan 49201

Myron M. Cherry, Esquire
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Kalamazoo Public Library
315 South Rose Street
Kalamazoo, Michigan 49006

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

Director, Technical Assessment
Division
Office of Radiation Programs
(AW-459)
U. S. Environmental Protection
Agency
Crystal Mall #2
Arlington, Virginia 20460

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

**(w/copy of incoming dated 3/6/79 and 5/17/79)

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. 50
License No. DPR-20

I. The Nuclear Regulatory Commission (the Commission) has found that:

A. The application for amendment by Consumers Power Company (the licensee) dated March 6, 1979, as supplemented by letter dated May 17, 1979, 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:

"B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 50 , 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

Richard C. Tahl for

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 27, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 50

PROVISIONAL OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Revise Appendix A by removing the pages identified below and inserting the enclosed pages. The revised pages include the captioned amendment number and contain vertical lines indicating the areas of change.

PAGES
3-65
3-66
3-66a

3.11 IN-CORE INSTRUMENTATION

Applicability

Applies to the operability of the in-core instrumentation system.

Objective

To specify the functional and operability requirements of the in-core instrumentation system.

Specification

a. Sufficient in-core instrumentation shall be operable whenever the reactor is operating at or above 50% rated power (65% of rated power if no dropped or misaligned rods are present) in order to:
   (1) Assist in the calibration of the out-of-core detectors, and
   (2) Check gross core power distribution. As a minimum, 50% of the in-core detectors and not less than 10 individual detectors per quadrant, which shall include two detectors at each of the axial levels, shall be operable.

b. For power operation above 85% of rated power, in-core detector alarms generated by the data logger shall be set, based on the latest power distribution obtained, such that the peak linear power does not exceed the limit specified in Section 3.10.3.a. If four or more coincident alarms are received, the validity of the alarms shall be immediately determined and, if valid, power shall be immediately decreased below alarm set point and a power distribution map obtained. If a power distribution is not obtained within 24 hours of the alarm conditions, power shall be reduced to 85% of rated power.

c. The in-core detector alarm set points shall be established, based on the latest power distribution maps, normalized to the kW/ft limit defined in Section 3.10.3.a.

d. Power distributions shall be evaluated every week or more often as required by plant operations.

e. The data logger can be inoperable for two hours. If at the end of two hours it is not available, the power level shall not exceed 85% of rated power.

f. If the data logger for the in-cores is not in operation for more than two hours and reactor power is at or above 50% of rated power (65% of rated power if no dropped or misaligned rods are present), readings shall be taken and logged on a minimum of 10 individual detectors per quadrant (to include at least 50% of the total number of detectors in

3.11 IN-CORE INSTRUMENTATION (Contd)

Specification (Contd)

a 10-hour period) at least each two hours thereafter or the reactor power level shall be reduced to less than 50% of rated power (65% of rated power if no dropped or misaligned rods are present). If readings indicate a local power level equal to or greater than the alarm set point, the action specified in 3.11.b shall be taken.

g. F_r^A and F_r^T shall be determined whenever the core power distribution is evaluated. If either F_r^A or F_r^T is found to be in excess of the limit specified in Section 3.10.3.g; within six hours thermal power shall be reduced to less than [(1.77 ÷ F_r^T) x 2530 MW_t] or [(1.45 ÷ F_r^A) x 2530 MW_t], whichever is lower.

Basis

A system of 45 in-core flux detector and thermocouple assemblies and a data display, alarm and record functions has been provided. A four level, five level or six level system may be used.(1)(2) The out-of-core nuclear instrumentation calibration includes:

a. Calibration (axial and azimuthal) of the split detectors at initial reactor start-up and during the power escalation program.
b. A comparison check with the in-core instrumentation in the event abnormal readings are observed on the out-of-core detectors during operation.
c. Calibration check during subsequent reactor start-ups.
d. Confirm that readings from the out-of-core split detectors are as expected.

Core power distribution verification includes:

a. Measurement at initial reactor start-up to check that power distribution is consistent with calculations.
b. Subsequent checks during operation to insure that power distribution is consistent with calculations.
c. Indication of power distribution in the event that abnormal situations occur during reactor operation.

If the data logger for the in-core readout is not in operation for more than two hours, power will be reduced to provide margin between the actual peak linear heat generation rates and the limit and the in-core readings will be manually collected at the terminal blocks in the control room utilizing a suitable signal detector. If this is not feasible with the

3.11 IN-CORE INSTRUMENTATION (Contd)

Basis (Contd)

manpower available, the reactor power will be reduced further to minimize the probability of exceeding the peaking factors. The time interval of two hours and the minimum of 10 detectors per quadrant are sufficient to maintain adequate surveillance of the core power distribution to detect significant changes until the data logger is returned to service.

Reference

(1) FSAR, Section 7.4.2.4.

(2) Letter dated May 17, 1979 from D. Hoffman, Consumers Power Company to D. Ziemann, Nuclear Regulatory Commission.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 50 TO PROVISIONAL OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

Introduction

By letter dated March 6, 1979 and supplement dated May 17, 1979, Consumers Power Company (CPC) requested a change to the Technical Specifications for Palisades Plant to allow use of a new in-core detector system.

Evaluation

Palisades Plant uses an in-core neutron detector system with four vertical (axial) segments of detectors to measure core power distribution. The proposed change would allow use of a system which has five segments of detectors. We have reviewed the enclosures submitted with the May 17, 1979 letter which addresses the reliability and accuracy of the method for determining spatically dependent axial power shapes using a limited number of fixed in-core detectors in an axial string. In the examples considered in their submittal, the uncertainty using a five segment detector system or six segment system was substantially less than the uncertainty using four segment detectors. CPC has stated that the axial fitting algorithm described in their submittal will be incorporated in their in-core data reduction code, INCA. After this change is made, the accuracy indicated in the May 17 submittal will apply to Palisades. CPC has not proposed decreasing the assumed uncertainties in the measured power distribution which result from the use of a five segment or six segment detector. Therefore, with the change to five or six segment detectors the actual margins to safety limits will increase. We find that the use of five segment or six segment in-core detector system will improve the determination of core power distribution and is, therefore, acceptable. Based on the above, we conclude that the proposed change to Technical Specification 3.11.a which would delete the word "four" and allow use of five detector system or a six detector system is acceptable. We are also revising the Bases for this section of Technical Specifications to include the reference to the May 17, 1979 submittal and to state that a four axial segment system, five segment system or six segment system may be used.

Environmental Considerations

We have determined that the amendment does not authorize a change in effluent types, an increase in total amounts of effluents or an increase in power level and therefore will not result in any significant environmental impact. Having made this determination, we have concluded, 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 this amendment.

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: July 27, 1979

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-255

CONSUMERS POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO PROVISIONAL OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 50 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 (the facility), located in Covert Township, Van Buren County, Michigan. The amendment is effective as of its date of issuance.

The amendment allows use of a new in-core detector system.

The application for the 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.

For further details with respect to this action, see (1) the application for amendment dated March 6, 1979, as supplemented by letter dated May 17, 1979, (2) Amendment No. 50 to License No. DPR-20, and (3) the Commission's related Safety Evaluation. All of 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 copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 27th day of July, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard D. Silver

Richard D. Silver, Acting Chief
Operating Reactors Branch #2
Division of Operating Reactors