

Docket No. 50-255

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

JAN 19 1979

Dear Mr. Bixel:

The Commission has issued the enclosed Amendment No. 45 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 October 25, 1977, as supplemented by letter dated March 23, 1978.

This amendment authorizes changes to the requirements for reactor internals vibration monitoring.

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

Sincerely,

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

Enclosures:

1. Amendment No. 45 to DPR-20
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
 See next page

Notified S. Cashell of CPC on 1/22/79 that the amendment has been issued. R. Shu

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OFFICE	DOR:ORB #2	DOR:ORB #2	OELD	DOR:ORB #2		
SURNAME	RDSilver:ah	HISmith		DLZiemann		
DATE	10/3/78	10/3/78	1/19/79	1/19/79		

Docket No. 50-255

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

Gentlemen:

The Commission has issued the enclosed Amendment No. 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 October 25, 1977, as supplemented by letter dated March 23, 1978.

This amendment authorizes changes to the requirements for reactor internals vibration monitoring.

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

Sincerely,

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

Enclosures:

1. Amendment No. to DPR-20
2. Safety Evaluation
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cc w/enclosures:
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JMMcGough	
BHarless	
BGrimes	

OFFICE >	DOR:ORB #2	DOR:ORB #2	OELD	DOR:ORB #2		
SURNAME >	RDSilver:ah	HSmith		DLZiemann		
DATE >	10/3/78	10/3/78	10/ /78	10/ /78		

Consumers Power Company

- 2 -

JAN 19 1979

cc w/enclosures:

M. I. Miller, Esquire
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Chicago, Illinois 60670

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

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

Myron M. Cherry, Esquire
Suite 4501
One IBM Plaza
Chicago, Illinois 60611

Kalamazoo Public Library
315 South Rose Street
Kalamazoo, Michigan 49006

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

*Mr. William R. Rustem (2)
Office of the Governor
Room 1 - Capitol Building
Lansing, Michigan 48913

Director, Technical Assessment
Division
Office of Radiation Programs
(AW-459)
US EPA
Crystal Mall #2
Arlington, Virginia 20460

*With CCo letter dated 10/25/77 and
a supplemental letter dated 3/23/78

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

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 45
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 October 25, 1977, as supplemented by letter dated March 23, 1978, 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:

"B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 5, 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

Original signed by
Dennis L. Ziemann

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: JAN 19 1979

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ATTACHMENT TO LICENSE AMENDMENT NO. 42

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 are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

4-65

4-66

4-67

Insert

4-65

4-66

4-67 (Intentionally Blank)

4.13 Reactor Internals Vibration Monitoring

Applicability

Applies to the reactor internals vibration monitoring.

Objective

To specify the minimum frequency and type of surveillance to be applied to the structural and hydraulic interactions of the reactor internals.

Specification

A. Description of Testing

As a minimum, the test data shall consist of the noise component of the detector signals from the operating power range safety channels specified in Section 3.17. The surveillance program shall consist of two measurement phases.

1. Phase I Measurements

Phase I measurements shall examine the gross amplitude of the signal noise by determining the standard deviation and root mean square values of the data. In addition, it shall examine the extent, if any, of amplitude bias. The testing shall be conducted while at steady state power conditions.

2. Phase II Measurements

Phase II measurements shall consist of spectral analysis of the detector signal noise. It shall consist of determining:

- a. The auto-power spectral density function.
- b. The coherence function and phase relationships for detector pairs.

B. Limits

Two action limits shall be established.

1. M-Sigma noise level, above which the frequency of data collection and analysis shall be increased.
2. N-Sigma noise level, above which would require plant operational restrictions to reduce the noise levels.

M and N limits shall be determined from the baseline analysis, with reference to as-built tolerances, and structural limits. M and N limits may be specified as frequency dependent.

4.13 Reactor Internals Vibration Monitoring (Contd)

C. Frequency of Measurements

After each refueling outage, baseline Phase I and Phase II data should be collected at around 25%, 50%, 75% and 100% power levels.

As a minimum during normal plant operation, Phase I measurements shall be recorded and analyzed once per seven days. Phase II measurements shall be recorded and analyzed once per 31 days. When Phase I measurements exceed the first action limit (M-Sigma), Phase I measurements shall be recorded and analyzed daily and Phase II data shall be recorded and analyzed every 7 days.

D. Report of Test Results

1. When the M-Sigma action level is exceeded, the data and analyses shall be reported in writing to the NRC within 30 days and every 30 days thereafter as long as the action level is exceeded.
2. When the N-Sigma action level is exceeded, the occurrence shall be reported to the NRC in accordance with the procedures for a reportable occurrence as specified in Section 6.9.2.b.
3. All periodic Phase I and Phase II tests shall be the subject of a technical report submitted to the Director of the USNRC, Region III office, with a copy to the Director of Reactor Regulation, USNRC, on an annual basis. The report shall be entitled "Reactor Internals Noise Monitoring Tests."

Basis

The Palisades Plant reported neutron noise that was felt to be indicative of core barrel motion in June of 1973. A subsequent reactor internals inspection revealed internals wear due to a loss of the core barrel clamping force. Modifications were made to provide a greater clamping force on the reactor internals. The inspection results and a description of the modifications were included in CEN-5(P) transmitted by letter dated March 18, 1974. The surveillance program included in this specification is to assure the integrity of the modifications.

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Change No. ~~20~~

Amendment No. 45

4-67



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 15 TO PROVISIONAL OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

Introduction

By letter dated October 25, 1977, supplemented by letter dated March 23, 1978, Consumers Power Company (CPC) requested changes to Section 4.13 of the Technical Specifications for License No. DPR-20 (Palisades Nuclear Plant). The proposed changes would revise the requirements for reactor internals vibration monitoring.

Evaluation

By Amendment No. 9 dated August 30, 1974, a new Section 4.13 was added to the Palisades Technical Specifications which required monitoring of reactor internals vibration and provided a limitation on the maximum motion amplitude permitted for continued operation.

The Palisades Plant reported noise in the excore nuclear power level detector signals that was felt to be indicative of core barrel motion in June of 1973. A subsequent reactor internals inspection revealed internals wear due to a loss of the core barrel clamping force. Modifications were made to provide a greater clamping force on the reactor internals. The inspection results and a description of the modifications were included in CEN-5(P) transmitted by CPC letter dated March 18, 1974. The surveillance program was included in the Technical Specifications to assure the integrity of the modifications. The surveillance program was to be reevaluated following the first visual inspection to verify the performance of the reactor vessel internals and proposed changes to the program were to be submitted if appropriate.

In a letter of June 14, 1977, CPC reported on internal noise monitoring tests and based on those tests determined that a change in the surveillance program was appropriate. By letter of October 25, 1977, CPC submitted three proposed changes to the program specified in the Technical Specifications and two proposed changes to clarify the requirements.

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Periodic reports submitted by CPC indicate that the maximum motion amplitude permitted for continued operation has not been exceeded and that the modifications have successfully limited reactor internals vibration.

Based on the results of the testing program CPC has requested that the frequency of one of the two required measurement phases be reduced from daily to weekly. This phase, Phase I, involves measurement of gross magnitude of internals motion through analysis of parameters of signal noise from the operating power range safety channels. We have reviewed the CPC's reports and find that there has been no measurable increase in core barrel motion since the internals were repaired in 1974. In addition, we would expect that should any wear problems occur, they would increase slowly over many weeks. Therefore, we conclude that weekly data collection is acceptable.

CPC has requested two changes in requirements for data analysis. The technical specifications have required that the noise components of the operating power range excore detector signals be recorded and analyzed for characteristics which indicate gross amplitude of core movement (Phase I measurements). If action levels associated with the Phase I analyses are exceeded, Phase II measurements are to be performed to provide a more accurate assessment of the internals vibration. Phase I presently consists of the determination of the standard deviation, root-mean-square value, and amplitude probability distribution of the data. Phase II consists of the determination of power spectral density, phase, and coherence. The more sophisticated Phase II measurements are done less frequently (monthly) than the Phase I measurements.

CPC has requested that the Phase I requirements be changed to delete the requirement for amplitude probability distribution, and instead require the determination of amplitude bias. Amplitude bias is derived from the amplitude probability distribution, and consists of an analytical method to detect motion constraints (such as the core barrel striking the snubbers). The present specifications require only a manual examination of the amplitude probability distribution histogram. Because the detection of amplitude bias provides an equivalent surveillance function, but is a more exact, quantitative procedure, we find this change to be acceptable.

CPC also desires to allow frequency dependence of the M-sigma noise limit. (Exceeding the M-sigma limit triggers increased surveillance. The higher N-sigma limit would trigger restricted operation. The N-sigma limit is already frequency dependent.) In its March 23, 1978 letter, CPC stated that this frequency band would be chosen to include those frequencies which exhibit significant coherence with a 180° phase angle between opposing excore detectors. Moreover, CPC will identify

the cause of any significant noise in any given frequency band (and thus verify that it is not caused by core barrel motion) before excluding this band. Because this procedure will unambiguously identify the correct frequency band, we find this change to be acceptable.

In addition to the program changes, CPC proposed two changes in wording to clarify the technical specification requirements. They have proposed to substitute "noise component of the detector signals from the operating power range safety channels specified in Section 3.17" for "noise component of the operating power range excore detector signals." We agree that this is an appropriate and acceptable clarification. They have also proposed to change "monthly" to "31 days" and "weekly" to "7 days". These changes, which are consistent with standard technical specifications presently being issued by us, improve the clarity of the specification and are acceptable.

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 of 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: JAN 19 1979

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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. 4⁵ to Provisional Operating License No. DPR-20, issued to Consumers Power Company (the licensee), which revised 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 authorizes changes to the requirements for reactor internals vibration monitoring.

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.

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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 October 25, 1977, as supplemented by letter dated March 23, 1978, (2) Amendment No. 45 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 19th day of January, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
Dennis L. Ziemann

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

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