AUG 30 1974

Docket No. 50-255

Consumers Power Company
ATTN: Mr. R. C. Youngdahl
Senior Vice President
212 West Michigan Avenue
Jackson, Michigan 49201

Gentlemen:

The Commission has issued the enclosed Amendment No. 9 to the Provisional Operating License No. DPR-20 for the Palisades Plant. This amendment includes Change No. 13 to the Technical Specifications and is in response to your request dated July 30, 1974.

This amendment requires that a surveillance program be initiated to monitor the reactor internals vibration and to provide a limitation on the maximum motion amplitude permitted for continued operation.

Copies of the Safety Evaluation and the Federal Register Notice relating to this action are also enclosed.

Sincerely,

Original signed by:
Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors Branch #1
Directorate of Licensing

Enclosures:
1. Amendment No. 9
2. Safety Evaluation
3. Federal Register Notice

cc w/enclosures:
M. I. Miller, Esquire
Isham, Lincoln & Beale
Suite 4200
One First National Plaza
Chicago, Illinois 60670

Additional cc on next page

cc w/enclosures:
J. 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

Mr. Jerry Sarno
Township Supervisor
Covert Township
Route 1, Box 10
Van Buren County, Michigan 49043

Mr. D. John Beck (2 cys)
Division of Intergovernmental
Relations
Executive Office of the Governor
Lewis Cass Building, 2nd Floor
Lansing, Michigan 48913
(w/copy of incoming dtd. 7/30/74)

Mr. Gary Williams
Federal Activities Branch
Environmental Protection Agency
1 North Wacker Drive, Room 822
Chicago, Illinois 60606
(w/copy of incoming dtd. 7/30/74)

Kalamazoo Public Library
315 South Rose Street
Kalamazoo, Michigan 49006

bcc: H. J. McAlduff, OROO
J. R. Buchanan, ORNL
T. B. Abernathy, DTIE

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JPKnight
8/16/74

OFFICE	L:OR-1	L:OR-1	OGC	L:OR KRG		
SURNAME	DScott:dc	RAPurple		KRGoller		
DATE	8/16/74	8/16/74	8/20/74	8/30/74		

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 9
License No. DPR-20

1. The Atomic Energy Commission (the Commission) has found that:

   A. The application for amendment by Consumers Power Company (the licensee) dated July 30, 1974, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended, 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. Prior public notice of this amendment is not required since the amendment does not involve a significant hazards consideration.

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

"B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 13."

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

FOR THE ATOMIC ENERGY COMMISSION

Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Directorate of Licensing

Attachment:
Change No. 13 to Technical
Specifications

Date of Issuance: August 30, 1974

ATTACHMENT TO LICENSE AMENDMENT NO. 9

CHANGE NO. 13 TO THE TECHNICAL SPECIFICATIONS

PROVISIONAL OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

Change Appendix A - Technical Specifications as follows:

Add a new Section 4.13 as follows:

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

The surveillance testing shall be comprised of a minimum of two measurement phases.

1. Phase 1

This testing shall be conducted while operating under steady-state power operation conditions. This testing shall comprise the recording of the noise component of the operating power range ex-core detector signals. The data shall be examined for

4.13 Reactor Internals Vibration Monitoring (Contd)

A. Description of Testing (Contd)

1. Phase 1 (Contd)

the gross amplitude of core movement by determining the amplitude probability distribution, sigma (the standard deviation for the measured set of data) and the root-mean-square. Baseline Phase 1 measurements and analyses shall be made at 25%, 50%, 75% and 100% power levels during the plant startup following the spring 1974 reactor internals modifications.

2. Phase 2

This testing shall be conducted under steady-state conditions.

Overall noise characteristics including amplitude power distribution, frequency content, and Azimuthal relationships among signals shall be analyzed by determining the following:

1. The power spectral density.
2. Coherence and phase plots.

Baseline Phase 2 measurements and analyses shall be made simultaneously with the Phase 1 measurements during the plant startup at 25%, 50%, 75% and 100% power levels. An action level shall be established to be an M sigma noise level. In any subsequent Phase 1 measurement, if the M sigma action level is exceeded, as determined by data recorder traces, subsequent Phase 2 analysis shall be

4.13 Reactor Internals Vibration Monitoring (Contd)

A. Description of Testing (Contd)

2. Phase 2 (Contd)

performed within two weeks. An action level of N sigma shall be established to require plant operational restrictions to reduce the noise level. M and N shall be determined from the baseline Phase 2 analysis, with reference to as-built tolerances and structural limits. N may be specified as frequency dependent.

B. Measurement Frequency

As a minimum, Phase 1 measurements shall be recorded daily and analyzed weekly and Phase 2 measurements shall be recorded monthly and analyzed monthly during startup and normal plant operations. When Phase 1 test signals exceed the first action level (M sigma noise level), Phase 1 data shall be recorded and analyzed daily and Phase 2 data shall be recorded daily and analyzed weekly.

C. Report of Test Results

1. The baseline data and analyses and the plant action levels selected shall be reported to the Director of the AEC Region III Regulatory Operations Office with a a copy to the Director of Licensing, USAEC within one month after completing plant startup following the spring 1974 core internals modifications.

2. When the M sigma action level is exceeded the data and analyses shall be reported in writing to the AEC Region III

4.13 Reactor Internals Vibration Monitoring (Contd)

C. Report of Test Results (Contd)

2. (Contd)

Regulatory Operations within 30 days and every 30 days thereafter as long as the action level is exceeded.

3. When the N sigma action level is exceeded the occurrence shall be reported to the AEC in accordance with the procedures for an abnormal occurrence as specified in Section 6.

4. All periodic Phase 1 and Phase 2 tests shall be the subject of a technical report submitted to the Director of the AEC Region III Regulatory Operations Office with a copy to the Director of Licensing, USAEC, on a semi-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. This surveillance program will be reevaluated following the first visual inspection to verify the performance of the reactor vessel internals and proposed changes will be submitted if appropriate.

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

SAFETY EVALUATION BY THE DIRECTORATE OF LICENSING

SUPPORTING AMENDMENT NO. 9 TO DPR-20

CHANGE NO. 13 TO TECHNICAL SPECIFICATIONS

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

Introduction

By letter dated July 30, 1974, Consumers Power Company (Consumers) submitted an application for a change to the Technical Specifications appended to Provisional Operating License No. DPR-20, as amended, for the Palisades Plant. The proposed change would require that a surveillance program be initiated to monitor the reactor internals vibration and to provide a limitation on the maximum motion amplitude permitted for continued operation.

Discussion

Prior to the August 11, 1973, plant shutdown, Consumers was monitoring the signals from the 6 excore nuclear power level detectors and determined the existence of significant "noise" components in the detector signals that were caused by flow-induced motion of reactor internals. In order to provide necessary data for evaluation of the characteristics and degree of internals motion and to follow the changing patterns of the signal noise, Consumers installed a temporary on-line minicomputer that was programmed to calculate the root mean square (rms) noise magnitude for each excore detector over specified time intervals. In June 1973, the licensee's Safety Audit and Review Committee imposed a limiting condition in terms of an upper rms value to restrict plant operation if that value were reached. During the period until plant shutdown, the Directorate of Regulatory Operations and the Directorate of Licensing closely followed the trend of the signal noise surveillance data. The limiting value was never reached.

Following the August 11, 1973, plant shutdown, Consumers carried out detailed inspections of the reactor vessel and core internals, including the fuel assemblies. The inspections identified wear at the interface surfaces that was caused by rubbing motion of the core barrel relative to the reactor vessel. Improvements were made to the holddown devices and wear on the interfaces was repaired in preparation for return to power operation.

To provide an initial operational checkout of the internals repair and for continuing surveillance, Consumers has proposed a program to monitor reactor instrument signal noise using the power range excore detectors. To interpret the signal noise for evaluating the gross magnitude of the internals motion and for a more detailed interpretation of the characteristics of any potential internals motion, the signal noise components will be obtained and processed at specified intervals and will be compared with baseline data obtained during ascension to full power.

Evaluation

The proposed Technical Specification does not relate to any change to safety related structure or equipment. Rather it relates to the initiation of a surveillance program to monitor the reactor internals vibration and the imposition of a limitation on the maximum amplitude permitted for continued operation. The present license does not require monitoring, nor does it impose limits for vibrations of the reactor internals. The staff has reviewed the proposed surveillance program, which is similar to that being incorporated in new operating licenses, and has concluded that it is capable of providing early detection in the unlikely event of an unacceptable degree of flow-induced core internals motion.

The worst incident involving the core barrel and associated core internals would be a complete circumferential severence of the core barrel. The analysis of this incident is presented in the Palisades Plant Final Safety Analysis Report in Section 14.5, "Core Barrel Failure Incident". Even if it were assumed that flow-induced vibrations could result in such an incident, the analysis shows that fuel integrity would not be compromised. This analysis has been evaluated and accepted by the Regulatory staff during the provisional operating license review. The staff has reviewed the improvements made to the holddown devices and agrees with the licensee that they will reduce the probability of flow-induced vibrations that could compromise the integrity of the core internals during future operations. The addition of a surveillance program with limiting conditions will provide added assurance for safe operation of the plant.

Conclusion

The staff concludes that the authorization of this change does not involve a significant hazards consideration. We also conclude that 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 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.

Alfred Burger
Operating Reactors Branch #1
Directorate of Licensing

Robert A. Purple, Chief
Operating Reactors Branch #1
Directorate of Licensing

Date: August 30, 1974

UNITED STATES ATOMIC ENERGY COMMISSION

DOCKET NO. 50-255

CONSUMERS POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO PROVISIONAL OPERATING LICENSE

Notice is hereby given that the U.S. Atomic Energy Commission (the Commission) has issued Amendment No. 9 to Provisional Operating License No. DPR-20 issued to Consumers Power Company which revised Technical Specifications for operation of the Palisades Plant, located in Covert Township, Van Buren County, Michigan. The amendment is effective as of its date of issuance.

The amendment permits a change in the Technical Specifications which requires that a surveillance program be initiated to monitor the reactor internals vibration and to provide a limitation on the maximum motion amplitude permitted for continued operation.

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.

For further details with respect to this action, see (1) the application for amendment dated July 30, 1974, (2) Amendment No. 9 to License No. DPR-20, with any attachments, 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, NW., 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. Atomic Energy Commission, Washington, D.C. 20545, Attention: Deputy Director for Reactor Projects, Directorate of Licensing - Regulation.

Dated at Bethesda, Maryland, this 30th day of August, 1974.

FOR THE ATOMIC ENERGY COMMISSION

Robert A. Purple, Chief
Operating Reactors Branch #1
Directorate of Licensing

PD-5

Amdt 9
8/30/74

PRELIMINARY DETERMINATION - NOTICING OF PROPOSED LICENSE AMENDMENT

Licensee: Consumers Power Company

Facility: Palisades Docket No: 50-255

Request for: A change to the Palisades Technical Specifications contained in Provisional Operating License No. DPR-20 to include a surveillance program for monitoring reactor internals vibration.

Request Date: July 30, 1974

Recommended action: ( ) Pre-notice

(x) Post-notice

( ) Determination delayed pending completion of Safety Evaluation

Basis for Recommendation:

The consequences of excessive vibration of the core support barrel and other core internals and the future inspection for signs of vibration damage during refueling and other plant outage were considered in the staff Safety Evaluation Report dated October 23, 1969, related to the issuance of an operating license. The repairs and modifications made since August 1973 to limit internals vibration, together with this proposed Technical Specification change that incorporates a program of surveillance to detect flow-induced core internals motion, all serve to significantly reduce the probability of an accident resulting from an unacceptable degree of internals vibration. The proposed Technical Specification change constitutes an additional limitation and control not presently provided and does not reduce the margin of safety in the present Technical Specifications. Therefore, based on the above, it is concluded that the proposed Technical Specification change does not involve a significant hazards consideration.

This is being concurred in by OGC based on the ~~fact~~ additional fact, omitted from the above basis, that the worst hypothetical case, complete severance of the core support barrel, was previously analyzed in the Applicant's SAR and reviewed by the Staff.

	Concurrences				Approval
OFFICE	LPM	BC:ORB#1	AD/OR KRG	OGC	DD/RP
SURNAME	DScott:dc	RAPurple	KRGoller		AGiambusso
DATE	8/8/74	8/8/74	8/8/74	8/12/74	8/ /74

Mr. Massa
Mr. Engelwardt

In order to expedite this Palisades Core-Barrel Tech. Spec. Change, I would like to concur now with a reference to changes noted in OGC note to Purple.

L. Brenner

August 28, 1974

NOTE TO R. A. PURPLE

RE: TECH SPEC CHANGE FOR PALISADES PLANT RE
REACTOR INTERNALS VIBRATION

I have reviewed this package and find that the Amendment and Notice of Issuance of Amendment are in the form prescribed by RP Operating Procedure 601, Rev. 2.

However, I believe the evaluation section of the Safety Evaluation should be changed to read as follows:

Evaluation

The proposed Technical Specification does not relate to any change to safety related structure or equipment. Rather it relates to the initiation of a surveillance program to monitor the reactor internals vibration and the imposition of a limitation on the maximum amplitude permitted for continued operation. The present license does not require monitoring, nor does it impose limits for vibrations of the reactor internals. The staff has reviewed the proposed surveillance program, which is similar to that being incorporated in new operating licenses, and has concluded that it is capable of providing early detection in the unlikely event of an unacceptable degree of flow-induced core internals motion.

The worst incident involving the core barrel and associated core internals would be a complete circumferential severence of the core barrel. The analysis of this incident is presented in the Palisades Plant Final Safety Analysis Report in Section 14.5, "Core Barrel Failure Incident". Even if it were assumed that flow-induced vibrations could result in such an incident, the analysis shows that fuel integrity would not be compromised. This analysis has been evaluated and accepted by the Regulatory staff during the provisional operating license review. The staff has reviewed the improvements made to the holddown devices and agrees with the licensee that they will reduce the probability of flow-induced vibrations that could compromise the integrity of the core internals during future operations. The addition of a surveillance program with limiting conditions will provide added assurance for safe operation of the plant.

In the conclusion section the first sentence should be deleted and the section begin with the next sentence which begins "The staff concludes..."

Lawrence Brenner

Lawrence Brenner
Attorney, OGC