



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

June 1, 1989

Docket No. 50-255
PAL 89-018

*See Correction letter
of 7/18/89*

Mr. Kenneth W. Berry
Director, Nuclear Licensing
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Dear Mr. Berry:

SUBJECT: AMENDMENT NO. 126 TO PROVISIONAL OPERATING LICENSE NO. DPR-20:
(TAC NO. 64339)

The Commission has issued the enclosed Amendment No. 126 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 March 3, 1982, as supplemented by letters dated August 29, 1984, March 21, 1988, and April 20 and May 4, 1989.

This amendment changes the Technical Specifications (TSs) by adding the requirements dealing with the leak rate testing of the containment air lock door seals and the associated action statement when allowable leakage rate (La) is exceeded. The changes to the TSs are in compliance with the requirements of Paragraphs III.D.2.(b)(ii), (iii), and (iv) of Appendix J to 10 CFR Part 50.

In our review of your documentation regarding the containment air lock door surveillance program for the Palisades plant, one remaining issue needs to be resolved. The concern deals with meeting the provision of Paragraph III.D.2(b)(ii) of 10 CFR Part 50, Appendix J that requires a containment air lock door leak rate test at not less than Pa before the plant is brought out of cold shutdown if the doors were used when containment integrity was not required. In order to resolve this issue, you should request an exemption from the regulatory requirement within 90 days from the issuance date of this amendment. This matter is discussed in the Safety Evaluation associated with this amendment.

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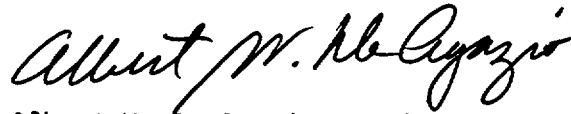
*C/P
JW*

Mr. Kenneth W. Berry

-2-

A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,



Albert W. De Agazio, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 126 to
License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. Kenneth W. Berry

-2-

A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by

Albert W. De Agazio, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 126 to
License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

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[PALISADES AMEND TAC 64339]

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*Contact me regarding
the additional language for
Note to Mr. & SE.
to Mr. & SE.
5/3/89*

Mr. Kenneth W. Berry
Consumers Power Company

Palisades Plant

cc:

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

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 126
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 March 3, 1982 as supplemented by letters dated August 29, 1984, March 21, 1988, and April 20 and May 4, 1989, 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:

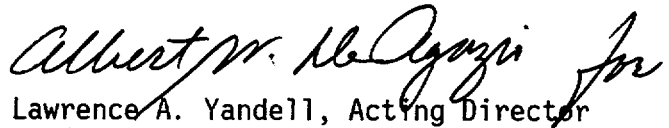
Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 126, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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3. This license amendment is effective as of the date of its issuance and shall be implemented not later than

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, appearing to read "Lawrence A. Yandell".

Lawrence A. Yandell, Acting Director
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 1, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 126

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

REMOVE

4-27

4-28

-

4-35

INSERT

4-27

4-28

4-28a

4-35

CONTAINMENT TESTS (Contd)

- (2) If any periodic integrated leak rate test fails to meet the acceptance criteria, the test schedule applicable to subsequent integrated leak rate tests will be reviewed and approved by the Commission.

e. Report of Test Results

Each integrated leak rate test will be the subject of a summary technical report which will include summaries of local leak detection tests and leak test of the recirculation heat removal systems.

4.5.2 Local Leak Detection Tests

a. Test

- (1) Local leak rate tests shall be performed at a pressure of not less than 55 psig.
- (2) Local leak rate tests for checking air lock door seals within 72 hours of each door opening shall be performed at a pressure of not less than 10 psig.
- (3) Acceptable methods of testing are halogen gas detection, soap bubble, pressure decay, or equivalent.
- (4) The local leak rate shall be measured for each of the following components:
 - (a) Containment penetrations that employ resilient seal gaskets, sealant compounds, or bellows.
 - (b) Air lock and equipment door seals.
 - (c) Fuel transfer tube.
 - (d) Isolation valves on the testable fluid systems' lines penetrating the containment.
 - (e) Other containment components which require leak repair in order to meet the acceptance criterion for any integrated leak rate test.

b. Acceptance Criteria

- (1) The total leakage from all penetrations and isolation valves shall not exceed 0.60 La.
- (2) The leakage for an air lock door seal test shall not exceed 0.023 La.

c. Corrective Action

- (1) If at any time it is determined that 0.60 La is exceeded, repairs shall be initiated immediately.

4.5 CONTAINMENT TESTS (Continued)

4.5.2 Local Leak Detection Tests (Continued)

If repairs are not completed and conformance to the acceptance criterion of 4.5.2.b(1) is not demonstrated within 48 hours, the Plant shall be placed in at least hot shutdown within the next 6 hours and in at least cold shutdown within the following 30 hours.

- (2) If at any time it is determined that total containment leakage exceeds L_a , within one hour action shall be initiated to bring the Plant to hot shutdown within the next six (6) hours and cold shutdown within the following thirty (30) hours.
- (3) If air lock door seal leakage is greater than $0.023 L_a$, repairs shall be initiated immediately to restore the door to less than specification 4.5.2.b(2). In the event repairs cannot be completed within 7 days, the Plant shall be brought to a hot shutdown condition within the next six (6) hours and cold shutdown within the following thirty (30) hours.

If air lock door seal leakage results in one (1) door causing total containment leakage to exceed $0.60 L_a$, the door shall be declared inoperable and the remaining operable door shall be immediately locked closed and tested within four (4) hours. As long as the remaining door is found to be operable, the provisions of 4.5.2.c(2) do not apply. Repairs shall be initiated immediately to establish conformance with specification 4.5.2.b(1). In the event conformance to this specification cannot be established within 48 hours the Plant shall be brought to a hot shutdown within the next 6 hours and cold shutdown within the following 30 hours.

d. Test Frequency

- (1) Individual penetrations and containment isolation valves shall be leak rate tested at a frequency of at least every six months prior to the first postoperational integrated leak rate test and at a frequency of at least every refueling thereafter, not exceeding a two-year interval, except as specified in (a) and (b) below:
 - (a) The containment equipment hatch and the fuel transfer tube shall be tested at each refueling shutdown or after each time used, if that be sooner.

4.5 CONTAINMENT TESTS (Continued)

4.5.2 Local Leak Detection Tests (Continued)

- (b) A full air lock penetration test shall be performed at six-month intervals. During the period between the six-month tests when containment integrity is required, a reduced pressure test for the door seals or a full air lock penetration test shall be performed within 72 hours after either each air lock door opening or the first of a series of openings.
- (2) Each three months the isolation valves must be stroked to the position required to fulfill their safety function unless it is established that such operation is not practical during plant operation. The latter valves shall be full-stroked during each cold shutdown.

4.5.3 Recirculation Heat Removal Systems

a. Test

- (1) The portion of the shutdown cooling system that is outside the containment shall be tested either by use in normal operation or hydrostatically tested at 255 psig at the interval specified in 6.15.
- (2) Piping from valves CV-3029 and CV-3030 to the discharge of the safety injection pumps and containment spray pumps shall be hydrostatically tested at no less than 100 psig at the interval specified in 6.15.

an important part of the structural integrity of the containment is maintained.

The basis for specification of a total leakage rate of 0.60 La from penetrations and isolation valves is specified to provide assurance that the integrated leak rate would remain within the specified limits during the intervals between integrated leak rate tests. This value allows for possible deterioration in the intervals between tests.

The basis for specification of an airlock door seal leakage rate of 0.023 La is to provide assurance that the failure of a single airlock door will not result in the total containment leakage exceeding 0.6 La. The seven (7) day LCO specified for exceeding the airlock door leakage limit is acceptable since it requires that the total containment leakage limit is not exceeded.

The limiting leakage rates from the shutdown cooling system are judgment values based primarily on assuring that the components could operate without mechanical failure for a period on the order of 200 days after a DBA. The test pressure (270 psig) achieved either by normal system operation or by hydrostatically testing gives an adequate margin over the highest pressure within the system after a DBA. Similarly, the hydrostatic test pressure for the return lines from the containment to the shutdown cooling system (100 psig) gives an adequate margin over the highest pressure within the lines after a DBA.⁽⁵⁾

A shutdown cooling system leakage of 1/5 gpm will limit off-site exposures due to leakage to insignificant levels relative to those calculated for leakage directly from the containment in the DBA. The engineered safeguards room ventilation system is equipped with isolation valves which close upon a high radiation signal from a local radiation detector. These monitors shall be set at

2.2×10^5 cpm, which is well below the expected level, following a loss-of-coolant accident (LOCA), even without clad failure. The 1/5 gpm leak rate is sufficiently high to permit prompt detection and to allow for reasonable leakage through the pump seals and valve packings, and yet small enough to be readily handled by the sumps and radioactive waste system. Leakage to the engineered safeguards room sumps will be returned to the containment clean water receiver following a LOCA, via the equipment drain tank and pumps. Additional makeup water to the containment sump inventory can be readily accommodated via the charging pumps from either the SIRW tank or the concentrated boric acid storage tanks.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 126 TO PROVISIONAL OPERATING LICENSE NO. DPR-20
CONSUMERS POWER COMPANY
PALISADES PLANT
DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated March 3, 1982 as supplemented by letters dated August 29, 1984, March 21, and April 20 and May 4, 1989, Consumers Power Company (the licensee) requested a change to the Palisades Technical Specifications, section 4.5.2.a and d.

The proposed revision deals with the local leak rate testing of the containment air lock door seals to assure a leak-tight integrity of the reactor containment in order to meet the requirements of 10 CFR Part 50, Appendix J. Specifically, technical specification (TS) Section 4.5.2.a would be revised to include local leak rate testing of air lock door seals of the reactor containment within 72 hours of each door opening at a test pressure not less than 10 psig. TS Section 4.5.2.d (Test Frequency) would also be revised to require that the reduced pressure test would be performed within 72 hours after each door opening or the first of a series of openings. By letters dated March 21, 1988, the licensee withdrew the proposed change dealing with the action statement associated with exceeding the allowable leak rate appearing in TS 4.5.2.c.(3). The staff found the proposed action statement to be unacceptable. Subsequently, by letter dated April 20, 1989, the licensee modified the amendment request to include the acceptance criteria for the allowable leakage during the air lock door seal testing at 10 psig and proposed a revised action statement when the allowable leak rate appearing in TS 4.5.2.c.(3) is exceeded.

2.0 EVALUATION

In October 1980, the NRC revised 10 CFR Part 50, Appendix J, Section III.D.2. regarding air lock door testing. The revision was initiated as a result of the recommendations by the door seal manufacturer who indicated that the door seals were not designed for repetitive testing at the calculated peak containment internal pressure related to the design basis accident (Pa). Basically, the revised rule allows:

1. Testing of the entire air lock assembly at accident pressure (Pa) every 6 months or after the air lock has been opened during a period when containment integrity is not required.
2. Air lock testing within 72 hours of opening (or every 72 hours during periods of frequent opening) whenever containment

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integrity is required. This testing may be at Pa, at a reduced pressure, or may be conducted by pressurizing between double seals.

3. Air lock door seal testing may not be substituted for the 6 months test at not less than Pa.

By letter dated August 29, 1984, the licensee proposed to test the air lock door seals within 72 hours of each door opening or the first series of openings at a reduced pressure not less than 10 psig. The proposed time period (i.e., 72 hours) in which the reduced pressure test would be performed after containment entry meets requirements of Appendix J, Paragraph III.D.2.(b) (iii) and, therefore, is acceptable. Paragraph III.D.2.(b)(iii) of Appendix J also permits a lower test pressure for the air lock doors when testing seal integrity following entries into the containment. The proposed 10 psig minimum test pressure is adequate to test the seals in order to assure sealing capability without damaging the door and the latching mechanisms. This lower test pressure is recommended by the door manufacturer and will not require the use of a strong back or changes to secure the doors as would be the case when testing at a pressure Pa. Furthermore, the 10 psig lower test pressure is a common value used by other licensees in the nuclear industry.

The staff requested the licensee to modify the proposed amendment request to include the maximum allowable leakage rate for the reduced pressure test of the door seals. By letter dated April 20, 1989, the licensee proposed an allowable leakage criterion of 2500 cc/minute (0.023 La) as specified in the proposed TS 4.5.2.b(2). This criterion is based on recent past tests where the proposed leakage limit was administratively applied to the air lock door testing. The purpose for specifying a leakage rate limit for the air lock door seals is to assure that failure of the air lock will not result in exceeding the acceptance criterion of 10 CFR Part 50, Appendix J, Paragraph III.C.3 (0.60 La) for the total containment penetrations. The Ethyl-Propylene-Diene-Monomer (EPDM) rubber seals that meet the ASTM material specification are used as a sealant material for the air lock seals at Palisades. This sealant material has a sealing capability that can reasonably justify a leakage of 2500 cc/min (STP). This has been confirmed by other licensees' experience that have applied a similar leakage rate limit. Over the years, there has been an improvement in the performance and reliability and a reduction in the leakage for the door seals at the Palisades plant. The proposed criterion is well within the acceptable limits for the overall containment leakage including the sum leakage for all penetrations as applied by 10 CFR Part 50, Appendix J. In addition, the leakage rate proposed by the licensee contains a comfortable margin since this is a small fraction of the total leakage rate allowed for types B and C tests of 10 CFR Part 50, Appendix J. Based on this evaluation, the staff finds the proposed change dealing with the testing of the air lock door at the lower test pressure and the leakage rate criterion does meet the requirements of Paragraph III.D.2.(b)(iii) and 2.(b)(iv) of 10 CFR Part 50, Appendix J and is, therefore, acceptable.

The licensee has proposed action statements associated with exceeding the limiting conditions for operation (LCO) dealing with 0.60 La (TS 4.5.2.c.(1)) and La (TS 4.5.2.c.(2)). The staff has reviewed these action statements and finds them

consistent with the guidance provided in the STS. On this basis, the proposed action statements associated with TS 4.5.2.c.(1) and c.(2) are acceptable

By letter dated March 21, 1988, the licensee withdrew the proposed change dealing with the action statement in TS 4.5.2.c.(3) that was rejected by the staff. Specifically, the unacceptable action statement associated with TS 4.5.2.c.(3) would permit a full air lock door test to be performed or shutdown the reactor if the total containment leak rate exceeds 0.60 La. By letter dated April 20, 1989, the licensee modified the action statement associated with TS 4.5.2.c.(3) so that if the one air lock door seal leakage causes total containment leakage to exceed 0.60 La, the door must be declared inoperable and the remaining operable door shall be lock closed and tested within four (4) hours. If the seal leakage of the remaining door causes total containment leakage to exceed 0.60 La, in conformance with specification TS 4.5.2.b.(1) and the TS cannot be met within 48 hours, the licensee would be required to place the plant in cold shutdown within the following 36 hours. The staff does agree with the modified action statement since it is similar to the statement used in the TSs of other nuclear power plants and does meet the guidance provided in the Combustion Engineering Standard Technical Specifications. On this basis, the staff finds the modified action statement for TS 4.5.2.c.(3) to be acceptable.

In our review of the licensee's submitted documentation regarding the containment air lock door surveillance program, one remaining issue dealing with requirements of Paragraph III.D.2.(b)(ii) needs to be resolved.

Paragraph III.D.2.(b)(ii) of Appendix J states: "Air locks opened during periods when containment integrity is not required by the plant's Technical Specifications shall be tested at the end of such periods at not less than Pa."

Whenever the plant is in cold shutdown or refueling, containment integrity is not required. However, if an air lock door is open during this period, Paragraph III.D.2.(b)(ii) of Appendix J requires that an overall air leakage test at not less than Pa be conducted before plant heating and startup. By letter dated August 29, 1984, the licensee conservatively interpreted requirements of Paragraph III.D.2.(b)(ii). However, the licensee's conservative interpretation notwithstanding, the proper vehicle available to gain relief from the Code of Federal Regulations is through the submittal of an exemption request. Specifically, the staff has concluded that with proper justification a partial exemption may be granted allowing the substitution of the seal leakage test of Paragraph III.D.2.(b)(iii) for the full pressure test of Paragraph III.D.2.(b)(ii) of Appendix J when no maintenance or modification that could affect sealing capability has been performed on an air lock. Whenever maintenance or modification that could affect the sealing capability has been performed on an air lock door, the requirement of Paragraph III.D.2.(b)(ii) of Appendix J must still be met by the licensee. The staff has granted such partial exemption to numerous plants and intends to revise Appendix J to alleviate the need for further exemptions in the future.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a change to the surveillance requirements. 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. 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.

4.0 CONCLUSION

We have 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.

Date: June 1, 1989

Principal Contributor: Dominic C. DiIanni