

November 14, 1988

Docket No. 50-255

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

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Dear Mr. Berry:

SUBJECT: AMENDMENT NO. 116 TO PROVISIONAL OPERATING LICENSE NO. DPR-20:
SECONDARY SAFETY VALVES (TAC NO. 69225)

The Commission has issued the enclosed Amendment No. 116 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 August 4, 1988, and your supplemental letter dated October 4, 1988.

This amendment changes the Technical Specifications relative to the secondary safety valve setpoint tolerances. This change increases these tolerances from 985 psig (±10 psig) and 1025 psig (±1%) to 985 psig (±30 psig) and 1025 psig (±3%).

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

Thomas V. Wambach, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

Enclosures:

1. Amendment No. 116 to License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

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

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Director, Nuclear Licensing
Consumers Power Company
1945 West Parnall Road
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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,

A handwritten signature in cursive script that reads "Thomas V. Wambach".

Thomas V. Wambach, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

Enclosures:

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2. Safety Evaluation

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See next page

Mr. Kenneth W. Berry
Consumers Power Company

Palisades Plant

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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. 116
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 August 4, 1988, as supplemented October 4, 1988, 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. 116, 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

Theodore Quay

Theodore Quay, Acting Director
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 14, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 116

PROVISIONAL OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Revise the Appendix A Technical Specifications by removing the page identified below and inserting the attached page. The revised page is identified by the captioned amendment number and contains marginal lines indicating the areas of change.

REMOVE

3-25

INSERT

3-25

3.1 PRIMARY COOLANT SYSTEM (Contd)

3.1.7 Primary and Secondary Safety Valves

Specifications

- a. The reactor shall not be made critical unless all three pressurizer safety valves are operable with their lift settings maintained between 2500 psia and 2580 psia ($\pm 1\%$).
- b. A minimum of one operable safety valve shall be installed on the pressurizer whenever the reactor head is on the vessel.
- c. Whenever the reactor is in power operation, a minimum of 23 secondary system safety valves shall be operable with their lift settings between 985 psig (± 30 psig) and 1025 ($\pm 3\%$) psig. /

Basis

The primary and secondary safety valves pass sufficient steam to limit the primary system pressure to 110 percent of design (2750 psia) following a complete loss of turbine generator load without simultaneous reactor trip while operating at 2650 MW_t.⁽¹⁾

The reactor is assumed to trip on a "High Primary Coolant System Pressure" signal. To determine the maximum steam flow, the only other pressure relieving system assumed operational is the secondary system safety valves. Conservative values for all system parameters, delay times and core moderator coefficient are assumed. Overpressure protection is provided to the portions of the primary coolant system which are at the highest pressure considering pump head, flow pressure drops and elevation heads.

If no residual heat were removed by any of the means available, the amount of steam which could be generated at safety valve lift pressure would be less than half of one valve's capacity. One valve, therefore, provides adequate defense against overpressurization when the reactor is subcritical.

The total relief capacity of the 24 secondary system safety valves is 11.7×10^6 lb/h. This is based on a steam flow equivalent to an NSSS power level of 2650 MW_t at the nominal 1000 psia valve lift pressure.

At the power rating of 2530 MW_t, a relief capacity of less than 11.2×10^6 lb/h is required to prevent overpressurization of the secondary system of loss of load conditions, and 23 valves provide relieving capability of 11.2×10^6 lb/h.^(1,2)

The overpressurization analysis for the loss of load event⁽²⁾ supports the specified secondary safety valve lift pressure tolerance. ASME B&PV Code, 1986 edition, Section XI, subsection IWV-3500, specifies ANSI/ASME OM-1-1981 requirements which allow the specified tolerances in the lift pressures of the safety valves. /
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/
/
/

References

- (1) FSAR, Sections 4.3.4 and 4.3.7. /
- (2) ANF-87-150(NP) Volume 2, Section 15.2.1. /



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 116 TO PROVISIONAL OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

INTRODUCTION

By letter dated August 4, 1988, as supplemented October 4, 1988, Consumers Power Company (the licensee) requested amendment to the Technical Specifications appended to Provisional Operating License No. DPR-20 for the Palisades Plant. The proposed amendment would reflect a change in the setpoint tolerances of the secondary system safety valves. The change implements a $\pm 3\%$ tolerance which is in accordance with the 1986 ASME Boiler and Pressure Vessel Code, Section XI, IWV-3500 and ANSI/ASME, OM-1-1981. This tolerance is also reflected in Advance Nuclear Fuels Corporation report ANF-87-150(NP) submitted to NRC by Consumers Power Company letter of June 17, 1988, to support Palisades operation with the modified reactor protection system and up to 29.3% steam generator tube plugging. Volume 2 of the report, Section 15.2.1, analyzes the results of the loss of load (trip of the turbine generator), which results in the greatest challenge to the safety valves, and concludes that the applicable acceptance criteria for the event are met. No change to the surveillance method, interval, or criteria for expanding the sample size was requested. The new $\pm 3\%$ (or ± 30 psig) tolerance is less likely to result in additional valves beyond the typical 1/3 sample being tested each refueling outage. The licensee provided additional information by letter on October 4, 1988, in which they committed to adjust the safety valves' setpoints to within $\pm 1\%$ tolerance as necessary after testing.

EVALUATION

The Code of Federal Regulations, 10 CFR 50.55a, requires, in part, that certain safety valves be tested in accordance with the ASME Section XI requirements. The Palisades Inservice Testing (IST) program is based on the requirements of Section XI of the ASME Code, 1983 Edition through the Summer of 1983 Addenda. Section XI, IWV-3512, in turn requires that safety valve and relief valve setpoints shall be tested in accordance with ASME PTC 25.3-1976. Section XI, IWV-3513 and IWV-3514, further require that when any valve in a system fails to function properly during a regular test, additional valves in the system shall be tested, and a valve failing to function properly during test shall be repaired or replaced. The formula for determining the additional valves, contained in the licensee's August 4, 1988 letter and procedures, is consistent with the guideline provided in the 1983 ASME Code. However, neither the 1983 Section XI nor PTC 25.3-1976 provide any requirements or guidelines for establishing valve

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setpoint tolerance which would permit a reasonable deviation from the stamped set pressure due to valve setpoint drifting. This issue was addressed in the 1986 ASME Section XI, IWV-3500, that endorsed the set pressure criteria provided in the ANSI/ASME, OM-1-1981. OM-1-1981, states, in part, "Any valve exceeding its stamped set pressure by 3% or greater shall be repaired or replaced,..." It also provides a guideline for testing additional valves when a valve exceeds the $\pm 3\%$ tolerance limits.

The $\pm 3\%$ setpoint tolerance for the secondary safety valves was utilized in the ANF-87-150(NP) analysis. For the three cases analyzed, the analysis demonstrates the adequacy of the relief valves in limiting steam pressure to 100 psig less than design. Cases analyzed with the atmospheric dump valves and turbine bypass valves available did not challenge the safety valves. The new minimum setpoint permitted by this change does not impact any analyzed events. ANF-87-150(NP), Section 15.1.3, analyzes two cases for excess load where the rapid opening of the atmospheric dump valves and turbine bypass valves exceed the steam flow rate which would result from the spurious opening of a safety valve.

The licensee's commitment to expand the scope of testing if the $\pm 3\%$ setpoint tolerance is exceeded and restore the valve to within $\pm 1\%$ when a valve exceeds a $\pm 1\%$ tolerance provides additional assurance of continuing valve operability.

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. We have 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.

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, and (2) such activities will be conducted in compliance with the Commission's regulations, and 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: November 14, 1988

Principal Contributors: Yueh-Li C. Li
Eric R. Swanson
Thomas V. Wambach