

March 17, 2003

Mr. Clay Warren
Vice President of Nuclear Energy
Nebraska Public Power District
P.O. Box 98
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION - ISSUANCE OF AMENDMENT ON SAFETY
LIMIT MINIMUM CRITICAL POWER RATIO (TAC NO. MB6816)

Dear Mr. Warren:

The U. S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 198 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated November 15, 2002, as supplemented by letter dated February 24, 2003.

The amendment revises the safety limit minimum critical power ratio values in TS 2.1.1.2.

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

Sincerely,

/RA by D. Jaffe for/

Mohan C. Thadani, Senior Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosures: 1. Amendment No. 198 to DPR-46
2. Safety Evaluation

cc w/encls: See next page

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* Memorandum from

R. Caruso to M. Thadani

NRR-058

ADAMS Accession No.: ML030770311

OFFICE	PDIV-1/PM	PDIV-1/PM	PDIV-1/LA	SRXB/SC	OGC	PDIV-1/SC
NAME	MThadani	DJaffe	MMcAllister	RCaruso	JMoore	RGramm
DATE	3/5/03	3/5/03	3/5/03	02/28/03*	3/17/03	3/17/03

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NEBRASKA PUBLIC POWER DISTRICT

DOCKET NO. 50-298

COOPER NUCLEAR STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 198
License No. DPR-46

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Nebraska Public Power District (the licensee) dated November 15, 2002, as supplemented by letter dated February 24, 2003, 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 license 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 2.C.(2) of Facility Operating License No. DPR-46 is hereby amended to read as follows:

- (2) Technical Specifications

- The Technical Specifications contained in Appendix A, as revised through Amendment No. 198, are hereby incorporated in the license. Nebraska Public Power District shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 17, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 198

FACILITY OPERATING LICENSE NO. DPR-46

DOCKET NO. 50-298

Replace the following page of the Appendix A Technical Specifications with the enclosed revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

REMOVE

2.0-1

INSERT

2.0-1

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be \leq 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10% rated core flow:

MCPR shall be \geq 1.09 for two recirculation loop operation or \geq 1.11 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be \leq 1337 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 198 TO
RENEWED FACILITY OPERATING LICENSE NO. DPR-46
NEBRASKA PUBLIC POWER DISTRICT
COOPER NUCLEAR STATION
DOCKET NO. 50-298

1.0 INTRODUCTION

By application to the U. S. Nuclear Regulatory Commission (NRC, the Commission) dated November 15, 2002 (Reference 1), as supplemented by letter dated February 24, 2003 (Reference 2), Nebraska Public Power District (the licensee), requested changes to the Technical Specifications (TSs) for Cooper Nuclear Station (CNS). The supplement, dated February 24, 2003, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on December 24, 2002 (67 FR 78521).

The proposed change would revise the safety limit minimum critical power ratio (SLMCPR) values in TS 2.1.1.2.

2.0 REGULATORY EVALUATION

The NRC staff finds that the licensee identified the applicable regulatory requirement in Section 4.0 of Reference 1. In its review of the proposed amendment, the NRC staff considered Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, Criterion 10, Reactor Design. Criterion 10 states:

The reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

The fuel cladding must not sustain damage as a result of normal operation and abnormal operational transients. The reactor core safety limits are established to preclude violation of the fuel design criterion that a SLMCPR is to be established such that at least 99.9 percent of the fuel rods in the core would not be expected to experience the onset of transition boiling.

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed license amendment which are described in Sections 4.0 of Reference 1. For the reasons set forth below, the staff has determined that the amendment is acceptable.

The licensee proposed to change the SLMCPR values in TS 2.1.1.2 for CNS Cycle 22 operation from 1.08 to 1.09 for two recirculation loop operation and from 1.09 to 1.11 for single recirculation loop operation with the reactor vessel steam dome pressure greater than or equal to 785 psig and core flow greater than or equal to 10 percent of rated core flow.

The licensee described the approved methodologies used to calculate the SLMCPR value for the proposed TS change in Reference 1. The Cycle 22 SLMCPR analysis was performed by Global Nuclear Fuel - Americas, LLC (GNF-A) using plant- and cycle-specific fuel and core parameters, and NRC approved methodologies including NEDC-32505P-A, Revision 1 (R-Factor Calculation Method for GE11, GE12 and GE13 Fuel), NEEDO-10958-A (GETAB), NEDC-32601P-A (Methodology and Uncertainties for Safety Limit MCPR Evaluations), NEDC-32694P-A (Power Distribution Uncertainties for Safety Limit MCPR Evaluation), and Amendment 25 to NEDE-24011-P-A (GESTAR II).

The NRC staff reviewed References 1 and 2, including the detailed summary results of the analysis for CNS Cycle 22 operation in Table 1 of Attachment 5 of Reference 1 to determine whether the proposed changes to the CNS SLMCPR values were justified.

The NRC staff has reviewed: (1) the justification for the changes to the SLMCPR from 1.08 to 1.09 for two recirculation loop operation and from 1.09 to 1.11 for single recirculation loop operation using the approach stated in Amendment 25 to GESTAR II; and (2) the issue relating to power shape data bases for the GEXL14 correlation. Based upon information contained in Reference 2, the NRC staff has determined that the licensee appropriately accounted for power shape in its analyses.

Based on the results of the review, the NRC staff finds that the SLMCPR analysis for CNS Cycle 22 operation uses appropriate plant- and cycle-specific parameters in conjunction with approved methods. The proposed CNS in Cycle 22 SLMCPR values will ensure that 99.9 percent of the fuel rods in the core will not experience boiling transition, which satisfies the requirements of General Design Criterion 10 of Appendix A to 10 CFR Part 50 regarding acceptable fuel design limits. The NRC staff has also concluded that the justification for analyzing and determining the SLMCPR value of 1.09 for two recirculation loop operation and of 1.11 for single recirculation loop operation is acceptable for CNS Cycle 22 operation since approved methodologies are used. Accordingly, the proposed changes to TS 2.1.1.2 are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Nebraska State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 78521 dated December 24, 2002). Accordingly, the 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 the amendment.

6.0 CONCLUSION

The Commission has 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.

7.0 REFERENCES

1. Letter (NLS2002129) from Michael T. Coyle to USNRC, "License Amendment Request to Revise Technical Specifications - Safety Limit Minimum Critical Power Ratio, Cooper Nuclear Station, Docket 50-298, DPR-46," November 15, 2002.
2. Letter (NLS2003026) from Clay C. Warren to USNRC, "Response to Request for Additional Information Related to Cooper License Amendment for Safety Limits Minimum Critical Power Ratio, Cooper Nuclear Station, Docket 50-298, DPR-46," February 24, 2003.

Principal Contributor: T. Huang

Date: March 17, 2003

Cooper Nuclear Station

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