

March 31, 2000

Mr. J. H. Swailes
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. MA7293)

Dear Mr. Swailes:

The Commission has issued the enclosed Amendment No. 182 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 6, 1999, as supplemented by letter dated March 17, 2000.

The amendment changes CNS TSs to reflect a revised value for the safety limit minimum critical power ratio (SLMCPR) as discussed in the enclosed safety evaluation. In TS 2.1.1.2, the value of the SLMCPR is changed to 1.08 for two recirculation loop operation and to 1.09 for single recirculation loop operation.

Proper planning regarding submission of licensing requests is necessary to allow sufficient allocation of NRC and Nebraska Public Power District (NPPD) resources. NPPD submitted three amendment requests in December 1999, and requested issuance in March 2000 to support CNS startup from refueling outage 19. In light of the scope and complexity of the requested changes, and the importance of the issues, the staff feels that sufficient preparation and planning was not given to these issues by NPPD.

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/

Lawrence J. Burkhart, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosures: 1. Amendment No. 182 to DPR-46
2. Safety Evaluation

cc w/encls: See next page

March 31, 2000

Mr. J. H. Swailes
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. MA7293)

Dear Mr. Swailes:

The Commission has issued the enclosed Amendment No. 182 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 6, 1999, as supplemented by letter dated March 17, 2000.

The amendment changes CNS TSs to reflect a revised value for the safety limit minimum critical power ratio (SLMCPR) as discussed in the enclosed safety evaluation. In TS 2.1.1.2, the value of the SLMCPR is changed to 1.08 for two recirculation loop operation and to 1.09 for single recirculation loop operation.

Proper planning regarding submission of licensing requests is necessary to allow sufficient allocation of NRC and Nebraska Public Power District (NPPD) resources. NPPD submitted three amendment requests in December 1999, and requested issuance in March 2000 to support CNS startup from refueling outage 19. In light of the scope and complexity of the requested changes, and the importance of the issues, the staff feels that sufficient preparation and planning was not given to these issues by NPPD.

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/

Lawrence J. Burkhart, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosures: 1. Amendment No. 182 to DPR-46
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

File Center	L. Hurley, RIV	RidsNrrDlpmLpdiv (S.Richards)
PUBLIC	J. Kilcrease, RIV	RidsNrrPMLBurkhart
PDIV-1 r/f	C. Marschall, RIV	RidsNrrLACJamerson
G. Hill (2)	RidsOgcRp	RidsNrrDripRtsb (W.Beckner)
THuang	RidsAcrsAcnwMailCenter	

To receive a copy of this document, indicate "C" in the box										
OFFICE	PDIV-1/PM	C	PDIV-D/LA	C	SRXB	C	OGC		PDIV-1/SC	C
NAME	LBurkhart:		CJamerson		RCaruso		CMarco		RGramm	
DATE	3/30/00		3/30/00		3/30/00		3/30/00		3/31/00	

DOCUMENT NAME: C:\amda7293rev2.wpd

OFFICIAL RECORD COPY

Cooper Nuclear Station

cc:

Mr. G. R. Horn
Sr. Vice President of Energy Supply
Nebraska Public Power District
1414 15th Street
Columbus, NE 68601

Mr. John R McPhail, General Counsel
Nebraska Public Power District
P. O. Box 499
Columbus, NE 68602-0499

Ms. S. R. Mahler, Assistant Nuclear
Licensing and Safety Manager
Nebraska Public Power District
P. O. Box 98
Brownville, NE 68321

Dr. William D. Leech
Manager-Nuclear
MidAmerican Energy
907 Walnut Street
P. O. Box 657
Des Moines, IA 50303-0657

Mr. Ron Stoddard
Lincoln Electric System
1040 O Street
P. O. Box 80869
Lincoln, NE 68501-0869

Mr. Michael J. Linder, Director
Nebraska Department of Environmental
Quality
P. O. Box 98922
Lincoln, NE 68509-8922

Chairman
Nemaha County Board of Commissioners
Nemaha County Courthouse
1824 N Street
Auburn, NE 68305

Ms. Cheryl K. Rogers, Program Manager
Nebraska Health & Human Services System
Division of Public Health Assurance
Consumer Services Section
301 Centennial Mall, South
P. O. Box 95007
Lincoln, NE 68509-5007

Mr. Ronald A. Kucera, Director
of Intergovernmental Cooperation
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 218
Brownville, NE 68321

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Jerry Uhlmann, Director
State Emergency Management Agency
P. O. Box 116
Jefferson City, MO 65101

Chief, Radiation Control Program, RCP
Kansas Department of Health
and Environment
Bureau of Air and Radiation
Forbes Field Building 283
Topeka, KS 66620

January 2000

NEBRASKA PUBLIC POWER DISTRICT

DOCKET NO. 50-298

COOPER NUCLEAR STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 182
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 December 6, 1999, as supplemented March 17, 2000, 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. 182 , are hereby incorporated in the license. The licensee 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 & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: March 31, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 182

FACILITY OPERATING LICENSE NO. DPR-46

DOCKET NO. 50-298

Replace the following pages of the Appendix A Technical Specifications with the enclosed revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

2.0-1

INSERT

2.0-1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

By letter dated December 6, 1999, as supplemented by letter dated March 17, 2000, the Nebraska Public Power District (District, the licensee) proposed changes to the Technical Specifications (TS) for the Cooper Nuclear Station (CNS). The requested changes would revise the safety limit minimum critical power ratio (SLMCPR) in TS 2.1.1.2 for CNS Cycle 20 operation. Revisions to the SLMCPR are necessary due to utilization of GE14 fuel for CNS Cycle 20. The higher and more restrictive values of SLMCPR for Cycle 20 are a result of more peaked core MCPR distribution and slightly flatter in-bundle power distributions than was used for Cycle 19 SLMCPR evaluation. The Cycle 20 is a mixed core of 548 fuel assemblies, of which there are 136 fresh GE14 bundles, 160 once burned GE9 bundles, 164 twice burned GE9 bundles, and 88 thrice burned GE9 bundles.

The March 17, 2000, letter provided additional clarifying information that was within the scope of the original application and *Federal Register* notice and did not change the staff's initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

For boiling-water reactors (BWRs) using General Electric (GE) fuel, the SLMCPR is established in accordance with the design criteria documented in GE's fuel licensing document, GESTAR II (General Electric Standard Application for Reactor Fuel, NEDE-24011-P-A-13 (Proprietary information. Not publicly available.)). GE calculates the SLMCPR using conservative inputs, approved by the NRC and defined in GESTAR II. The SLMCPR defines the minimum allowable critical power ratio at which at least 99.9 percent of all fuel rods in the core avoid transition boiling if the limit is not violated.

3.0 EVALUATION

NPPD requested a revision to TS 2.1.1.2 that would change the SLMCPR from 1.06 to 1.08 for two recirculation loop operation, and from 1.07 to 1.09 for single loop operation. These MCPR values are for the reactor steam dome pressure ≥ 785 psig and core flow ≥ 10 percent of rated core flow.

The licensee described the methodology to calculate the new SLMCPR values for the TS in its submittals. The Cycle 20 SLMCPR analysis was performed by General Electric Company (GE) using the plant- and cycle-specific fuel and core parameters, NRC-approved methodologies including GESTAR-II (NEDE-24011-P-A-13, "GE Standard Application for Reactor Fuel", Sections 1.15 and 1.25), NEDE-32505P, Revision 1 (R-Factor Calculation Method for GE11, GE12 and GE13 Fuel), NEDC-32601P ("Methodologies and Uncertainties for Safety Limit MCPR Evaluations"), NEDC-32694P ("Power Distribution Uncertainties for Safety Limit MCPR Evaluations"), and Amendment 25 to NEDE-24011P (GESTAR II). (All preceding references contain proprietary information and are not publicly available.)

The staff has reviewed the justification for the SLMCPR value of 1.08 for two recirculation loop operation and 1.09 for single loop operation using the approach stated in Amendment 25 to GESTAR-II. Amendment 25 to GESTAR-II is a methodology acceptable to the staff.

As stated in NPPD's response dated March 17, 2000, to NRC's request for additional information, NPPD utilized the GETAB methodology (instead of the newly approved method in licensing technical report (LTR) NEDC-32694P) for the power distribution uncertainties and the LTR NEDC-32694P for the non-power distribution uncertainties. These methods adequately account for the respective uncertainties and their use as described in NPPD's submittals is acceptable to the staff. Therefore, further justification is not needed for the issue of applicability of the LTR NEDC-32694P to the GE14 fuel for CNS Cycle 20 operation.

The staff concludes that changing the SLMCPR value to 1.08 for two recirculation loop operation and 1.09 for single recirculation loop operation for CNS is acceptable for CNS Cycle 20 operation because the changes were analyzed based on the NRC-approved methods using CNS cycle-specific inputs and the fuel bundles in the core for Cycle 20 operation. The Cycle 20 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.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the 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 (64 FR 73093). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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.

5.0 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.

Principal Contributor: T. Huang

Date: March 31, 2000