

September 8, 1987

Docket No. 50-298

Mr. George A. Trevors, Division
Manager - Nuclear Support
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68601

Dear Mr. Trevors:

SUBJECT: CORRECTION TO AMENDMENT DATED AUGUST 31, 1987

On August 31, 1987, the Commission issued an amendment to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. This amendment was inadvertently misnumbered as Amendment No. 108. The correct amendment number is 109. A complete copy of Amendment No. 109, numbered correctly, is enclosed.

We regret any inconvenience this error may have created.

Sincerely,

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William O. Long, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosure:
As stated

cc w/enclosure:
See next page

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LTR NAME: CORRECTION TO COOPER AMENDMENT

PD4/LA *PH*
PNoonan
9/8/87

PD4/PM *W*
WLong: sr
9/8/87

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Mr. George A. Trevors
Nebraska Public Power District

Cooper Nuclear Station

cc:
Mr. G. D. Watson, General Counsel
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P. O. Box 499
Columbus, Nebraska 68601

Cooper Nuclear Station
ATTN: Mr. Guy R. Horn, Division
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 31, 1987

Docket No. 50-298

Mr. George A. Trevors, Division
Manager - Nuclear Support
Nuclear Power Group
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68601

Dear Mr. Trevors:

SUBJECT: COOPER NUCLEAR STATION, AMENDMENT NO. 109, TO FACILITY
OPERATING LICENSE NO. DPR-46 (TAC NO. 64099)

The Commission has issued the enclosed Amendment No. 109 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. This amendment is in response to your application dated November 24, 1986, as modified by your letter dated August 13, 1987 (Change No. 37).

The amendment clarifies Appendix A Technical Specifications relating to reactor water chemistry requirements and retention of training records for plant staff members. It also corrects an error made in Amendment No. 62.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

A handwritten signature in cursive script that reads "William O. Long".

William O. Long, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 109 to
License No. DPR-46
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. George A. Trevors
Nebraska Public Power District

Cooper Nuclear Station

CC:

Mr. G. D. Watson, General Counsel
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NEBRASKA PUBLIC POWER DISTRICT

DOCKET NO. 50-298

COOPER NUCLEAR STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 109
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 24, 1987 as modified by letter dated August 13, 1987, 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 2.C.(2) of Facility Operating License No. DPR-46 is hereby amended to read as follows:

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(2) Technical Specification

The Technical Specifications contained in Appendix A, as revised through Amendment No.109 , 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jose A. Calvo

Jose A. Calvo, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 31, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 109

FACILITY OPERATING LICENSE NO. DPR-46

DOCKET NO. 50-298

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Pages

52a
134
134a
229

NOTES FOR TABLE 3.2.A (cont'd.)

Group 2

Isolation Signals:

1. Reactor Low Water Level (+12.5 in.)
2. High Dry Well Pressure (≤ 2 psig)

Isolations:

1. RHR Shutdown Cooling System
2. Vessel head spray
3. Drywell floor and equipment drain sump discharge lines.
4. TIP ball valves
5. Group 6 isolation relays

Group 3

Isolation Signals:

1. Reactor Low Water Level (+12.5 in.)
2. Reactor Water Cleanup System High Flow (200% of system flow)
3. Reactor Water Cleanup System High Area Temperature ($\leq 200^{\circ}\text{F}$)

Isolations:

1. Reactor Water Cleanup System

Group 4

Isolation Signals:

Provided by instruments on Table 3.2.B (HPCI)

Isolations:

Isolates the HPCI steam line

Group 5

Isolation Signals:

Provided by instruments on Table 3.2.B (RCIC)

Isolations:

Isolates the RCIC steam line.

Group 6

Isolation Signals:

1. Group 2 Isolation Signal
2. Reactor Building H&V Exhaust Plenum High Radiation (<100 mr/hr)

3.6.B. (cont'd)

2. When the reactor is pressurized (i.e. $>212^{\circ}\text{F}$) and during operation up to 10% of rated power, the following reactor coolant system chemistry limits shall apply:

a. Normal limits.

Conductivity
($\mu\text{mho/cm}$ at 25°C) ≤ 2.0

Chloride (ppm) ≤ 0.1

pH $5.6 \leq \text{pH} \leq 8.6$

Should these limits be exceeded for more than 48 hours during one continuous time interval, be in at least the HOT SHUTDOWN condition within the next 12 hours and (or if already in the HOT SHUTDOWN condition) be in the COLD SHUTDOWN condition within the following 24 hours.

3. During operation in excess of 10% of rated power, the following reactor coolant system chemistry limits shall apply:

a. Normal limits.

Conductivity
($\mu\text{mho/cm}$ at 25°C) ≤ 1.0

Chloride (ppm) ≤ 0.2

pH $5.6 \leq \text{pH} \leq 8.6$

b. Time limit. Should the conductivity or chloride limits in 3.6.B.3.a. be exceeded for more than 336 hours per year or the conductivity, chloride or pH limits for more than 72 hours during one continuous time interval, be in at least the STARTUP/HOT STANDBY mode within the next 8 hours.

c. Maximum limits.

Conductivity
($\mu\text{mho/cm}$ at 25°C) ≤ 10

Chloride (ppm) ≤ 0.5

4.6.B.1 (cont'd)

b. If the gross activity counts of a sample indicate an activity concentration above $3.1 \mu\text{Ci/gm}$ of dose equivalent I-131, an isotopic analysis shall be performed and quantitative measurements made to determine the dose equivalent I-131 concentration.

c. An isotopic analysis of a reactor coolant sample shall be made at least once per month.

2. Reactor coolant shall be continuously monitored for conductivity, or, when the continuous conductivity monitor is inoperable, the reactor coolant shall be analyzed:

a. At least once every 4 hours for conductivity, chloride ion content, and pH, when the reactor is pressurized (i.e. $>212^{\circ}\text{F}$), during the operation of the reactor, and during hot standby.

3. When the reactor is pressurized (i.e. $>212^{\circ}\text{F}$), and during the operation of the reactor, and during hot standby, a sample of the reactor coolant shall be analyzed:

a. At least every 80 hours for conductivity and chloride ion content when the continuous conductivity monitor reading is $\leq 0.7 \mu\text{mho/cm}$ at 25°C .

b. At least every 24 hours for conductivity and chloride ion content when the continuous conductivity monitor reading is >0.7 but $\leq 2.0 \mu\text{mho/cm}$ at 25°C .

c. At least every 8 hours for conductivity and chloride ion content when the continuous conductivity monitor reading is >2 but $\leq 3.5 \mu\text{mho/cm}$ at 25°C .

Should these maximum limits be exceeded, be in the COLD SHUTDOWN condition within the next 24 hours.

4. At all other times, the following reactor coolant system chemistry limits shall apply:

a. Normal limits.

Conductivity
($\mu\text{mho/cm}$ at 25°C) ≤ 10.0

Chlorides (ppm) ≤ 0.5

pH $5.3 \leq \text{pH} \leq 8.6$

Should the conductivity or pH limits be exceeded for more than 72 hours during one continuous time interval, or should the chloride limit be exceeded for more than 24 hours during one continuous time interval, perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the reactor coolant system. The structural integrity of the reactor coolant system shall be determined to remain acceptable for continued operation (prior to operation in other than the COLD SHUTDOWN conditions).

- d. At least every 4 hours for conductivity, chloride ion content, and pH, when the continuous conductivity monitor reading is $>3.5 \mu\text{mho/cm}$ at 25°C .

4. When the reactor is not pressurized, a sample of the reactor coolant shall be analyzed at least every 80 hours for conductivity and chloride ion content and pH.

5. The provisions of Specification 1.0.J are not applicable.

6.4.2.G (cont'd)

usage evaluation per the ASME Boiler and Pressure Vessel Code Section III was performed¹ for the conditions defined in the design specification. The locations to be monitored shall be:

- a. The feedwater nozzles
- b. The shell at or near the waterline
- c. The flange studs

2. Monitoring, Recording, Evaluating, and Reporting

- a. Operational transients that occur during plant operations will, at least annually, be reviewed and compared to the transient conditions defined in the component stress report for the locations listed in 1 above, and used as a basis for the existing fatigue analysis.
- b. The number of transients which are comparable to or more severe than the transients evaluated in the stress report Code fatigue usage calculations will be recorded in an operating log book. For those transients which are more severe, available data, such as the metal and fluid temperatures, pressures, flow rates, and other conditions will be recorded in the log book.
- c. The number of transient events that exceed the design specification quantity and the number of transient events with a severity greater than that included in the existing Code fatigue usage calculations shall be added. When this sum exceeds the predicated number of design condition events by twenty-five², a fatigue usage evaluation of such events will be performed for the affected portion of the RCPB.

- H. Records of current individual plant staff members showing qualifications and the completion of training.
- I. Records for Environmental Qualification which are covered under the provisions of Specification 6.3.
- J. Records of the service lives of all hydraulic and mechanical snubbers noted in 3.6.H.1, including the date at which the service life commences and associated installation and maintenance records.

6.4.3 2 Year Retention

Records and logs relating to the following items shall be kept for two years.

- A. The test results, in units of microcuries, for leak tests of sources performed pursuant to Specification 3.8.A.
- B. Records of annual physical inventories verifying accountability of the sources on record.

1. See paragraph N-415.2, ASME Section III, 1965 Edition.

2. The Code rules permit exclusion of twenty-five (25) stress cycles from secondary stress and fatigue usage evaluation. (See paragraphs N-412(t)(3) and N-417.10(f) of the Summer 1968 Addenda to ASME Section III, 1968 Edition.)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

By letter dated November 24, 1986 (Change No. 37) the Nebraska Public Power District (the licensee) requested an amendment to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The proposed amendment would change the Technical Specifications relating to reactor water chemistry requirements and retention of training records for plant staff members. It would also correct an error made in Amendment No. 62. In a letter dated August 13, 1987 the licensee revised the wording of the proposed Technical Specifications to provide improved clarity and consistency.

2.0 EVALUATION

In Section 3.6.B.2 and Section 4.6.B.3, the expression "prior to startup" would be replaced by "when the reactor is pressurized". "When the reactor is pressurized" more precisely defines the operational condition for which the LCO applies and is therefore acceptable. Also, in 3.6.B.2, the conductivity limit would be lowered from 5 micromho/cm to 2 micromho/cm and a pH limit added. These changes are consistent with Regulatory Guide 1.56 and are acceptable.

Sections 3.6.B.3 and 3.6.B.4 which apply to power levels greater than 10%, would be combined and renamed 3.6.B.3. A time limit for operation outside of the normal operating chemistry limit would be added. This change would bring the technical specification into closer agreement with the Standard Technical Specifications (NUREG-0123 or "STS") and is acceptable.

The new 3.6.B.2 and 3.6.B.3, would contain revised specifications for shutting down the plant when the maximum chemistry limits are exceeded. Although the proposed wording differs somewhat from the corresponding STS, it provides clear definition of the necessary requirements, is consistent with Regulatory Guide 1.56, and is therefore acceptable.

To the new 3.6.B.3 would also be added pH limits. The new limits are consistent with Regulatory Guide 1.56 and are thus acceptable.

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Section 3.6.B.5 (which applies "at all other times") would be re-numbered 3.6.B.4. To this section, pH limits would also be added, and a requirement for an engineering evaluation of the structural integrity of the reactor coolant system should the conductivity or pH limits be exceeded for 72 hours or chloride limit for 24 hours during one continuous time interval. These new requirements are consistent with Regulatory Guide 1.56 and the STS and are acceptable.

A new Section 3.6.B.5 would be added containing a statement that the provisions of Specification 1.0.J are not applicable. 1.0.J defines the actions to be taken for circumstances in excess of the LCO. It is not applicable since the proposed LCO's encompass all relevant conditions.

Section 4.6.B.2 would be expanded to specify the actions to be taken when the continuous conductivity monitor is inoperable. The proposed specification would replace a requirement in the existing 3.6.B.3.d, and would define additional surveillance requirements which include conductivity, chloride and pH measurements at prescribed intervals. This additional surveillance reflects the criteria specified in the STS, is consistent with Regulatory Guide 1.56 and is therefore acceptable.

Section 4.6.B.4 would be modified to include a requirement for periodic measurement of pH, (in addition to conductivity and chloride), when the reactor is depressurized. This change is consistent with Regulatory Guide 1.56 and is therefore acceptable.

The notes for Table 3.2.A would be revised to delete a statement that reactor water cleanup system high temperature is a Group 3 isolation signal. This change is consistent with Amendment No. 62 which states that the signal is provided only to protect resin from damage due to high temperature and serves no safety function. This change should have been made as part of Amendment No. 62. It corrects the error and is acceptable.

Section 6.4.2.H would be revised to clarify that the requirement for retention of plant staff training and qualifications records applies only to current staff members. The proposed change is consistent with the STS and is acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

This 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 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.

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.

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, 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.

Principal Contributor: K. Parczewski

Dated: August 31, 1987