Docket No. 50-298 April 14, 1993

Mr. Guy R. Horn
Nuclear Power Group Manager
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68602-0499

Dear Mr. Horn:

SUBJECT: COOPER NUCLEAR STATION - AMENDMENT NO. 161 TO FACILITY OPERATING LICENSE NO. DPR-46 (TAC NO. M85728)

The Commission has issued the enclosed Amendment No. 161 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The amendment consists of changes to the CNS Technical Specifications (TS) in response to your application dated February 1, 1993.

The amendment revises the CNS TS to (1) incorporate the NRC Staff position on leak detection per the guidance of Generic Letter (GL) 88-01 and its supplement, (2) incorporate the NRC Staff position on inservice inspection schedules, methods, personnel, and sample expansion per the guidance of GL 88-01 and its supplement, and (3) make administrative changes wherein certain system names are replaced by system names which are more consistent with those used in other portions of the Technical Specifications and implementing surveillance procedures.

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

Sincerely,
ORIGINAL SIGNED BY:
Harry Rood, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 161 to License No. DPR-46
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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Harry Rood

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Project Directorate IV-1
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See next page

cc:

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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. 161
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 February 1, 1993, 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. 161, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective 30 days after its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

George Hubbard

George T. Hubbard, Acting Director
Project Directorate IV-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 14, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 161

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 pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE PAGES	INSERT PAGES
135	135
137	137
149	149

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6.C. Coolant Leakage	4.6.C. Coolant Leakage
1. Any time irradiated fuel is in the the reactor vessel and reactor coolant temperature is above 212°F, reactor coolant leakage into the primary containment shall not exceed a 5 gpm unidentified leak rate, 25 gpm identified leak rate, or a 2 gpm increase in unidentified leak rate within the previous 24 hour period. If these limits cannot be met, an orderly SHUTDOWN shall be initiated and the reactor shall be in a COLD SHUTDOWN CONDITION within 24 hours.	1. Reactor coolant system leakage shall be checked by the sump flow measuring systems and drywell air sampling system and recorded at least once per shift, not to exceed 12 hours.
2. Each of the sump flow measuring systems shall be operable during REACTOR POWER OPERATION. From and after the date that one of these systems is made or found to be inoperable for any reason and the sump flow leak rate cannot be quantified, REACTOR POWER OPERATION is permissible only during the succeeding 24 hours, unless the system is sooner made OPERABLE. If leakage can be quantitatively measured by manually pumping the sump or measuring the difference in sump level, then REACTOR POWER OPERATION is permissible during the succeeding 30 days, unless the sump flow measuring system is sooner made OPERABLE.	
3. The drywell air sampling system shall be OPERABLE during REACTOR POWER OPERATION. From and after the date that this system is made or found to be inoperable for any reason, REACTOR POWER OPERATION is permissible only during the succeeding 30 days unless the system is sooner made OPERABLE.	
4. If the requirements of specification 3.6.C.2 or 3 cannot be met, an orderly SHUTDOWN shall be initiated and the reactor shall be in a COLD SHUTDOWN CONDITION within 24 hours.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6.E. Jet Pumps	4.6.E. Jet Pumps
1. Whenever the reactor is in the STARTUP or RUN MODES, all jet pumps shall be OPERABLE. If it is determined that a jet pump is inoperable, or if two or more jet pump flow INSTRUMENT failures occur and cannot be corrected within 24 hours, an orderly SHUTDOWN shall be initiated and the reactor shall be in a COLD SHUTDOWN CONDITION within 24 hours.	1. Whenever there is recirculation flow with the reactor in the STARTUP or RUN modes, jet pump OPERABILITY shall be checked daily by verifying that the following conditions do not occur simultaneously:
	a. The recirculation pump flow differs by more than 15% from the established speed flow characteristics.
	b. The indicated value of core flow rate varies from the value derived from loop flow measurements by more than 10%.
	c. The diffuser to lower plenum differential pressure reading on an individual jet pump varies from the mean of all jet pump differential pressures by more than 10%.
F. Recirculation Pump Flow Mismatch	F. Recirculation Pump Flow Mismatch
1. Following one recirculation pump operation, the discharge valve of the low speed recirculation pump may not be opened unless the speed of the faster pump is equal to or less than 50% of its rated speed.	1. Deleted.
G. Inservice Inspection	G. Inservice Inspection
1. To be considered OPERABLE, components shall satisfy the requirements contained in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for continued service of ASME Code Class 1, 2, and 3 components except where relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).	1. Inservice inspection shall be performed in accordance with the requirements for ASME Code Class 1, 2, and 3 components contained in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).
	2. The inservice inspection program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the staff positions on schedule, methods, personnel, and sample expansion included in this generic letter.

indicates that leakage from a crack can be detected before the crack grows to a dangerous or critical size by mechanically or thermally induced cyclic loading, or stress corrosion cracking or some other mechanism characterized by gradual crack growth. This evidence suggests that for leakage somewhat greater than the limit specified for unidentified leakage, the probability is small that imperfections or cracks, associated with such leakage would grow rapidly. However, the establishment of allowable unidentified leakage greater than that given in 3.6.C on the basis of the data presently available would be premature because of uncertainties associated with the data. Leakage limits of 2 gpm increase within any 24 hour period and a maximum of 5 gpm are specified in 3.6.C and are also supported Generic Letter 88-01. The experimental and analytical data suggest a reasonable margin of safety that such leakage magnitude would not result from a crack approaching the critical size for rapid propagation. Leakage less than the magnitude specified can be detected reasonably in a matter of a few hours utilizing the available leakage detection schemes, and if the origin cannot be determined in a reasonably short time the plant should be SHUTDOWN to allow further investigation and corrective action.

The total leakage rate consists of all leakage, identified and unidentified, which flows to the drywell floor drain and equipment drain sumps.

The capacity of the drywell floor sump pumps is 50 gpm and the capacity of the drywell equipment sump pumps is also 50 gpm. Removal of 25 gpm from either of these sumps can be accomplished with margin.

Reactor coolant leakage is also sensed by the drywell air sampling system which detects gaseous, particulate, and iodine radioactivity. Leakage can also be detected by area temperature detectors, humidity detectors and pressure instrumentation. Due to the many and varied ways of detecting primary leakage, a 30 day allowable repair time is justified.

D. Safety and Relief Valves

The safety and relief valves are required to be OPERABLE above the pressure (113 psig) at which the core spray system is not designed to deliver full flow. The pressure relief system for Cooper Nuclear Station has been sized to meet two design bases. First, the total safety/relief valve capacity has been established to meet the overpressure protective criteria of the ASME code. Second, the distribution of this required capacity between safety valves and relief valves has been set to meet design basis IV.4.2.1 of the USAR which states that the nuclear system relief valves shall prevent opening of the safety valves during normal plant isolations and load rejections.

The details of the analysis which shows compliance with the ASME code requirements is presented in subsection IV.4 of the FSAR and the Reactor Vessel Overpressure Protection Summary Technical Report presented in question 4.20 of Amendment 11 to the FSAR. Results of the overpressure protection analysis are provided in the current reload license document.

Experience in relief and safety valve operation shows that a testing of 50 percent of the valves per year is adequate to detect failures or deteriorations.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 161 TO FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

By letter dated February 1, 1993 (Reference 1), Nebraska Public Power District (the District, NPPD, or the licensee) submitted a request for an amendment revising the Cooper Nuclear Station (CNS) Technical Specifications (TS) to (1) incorporate the NRC Staff position on leak detection per the guidance of Generic Letter (GL) 88-01 (Reference 2) and its supplement (Reference 3), (2) incorporate the NRC Staff position on inservice inspection schedules, methods, personnel, and sample expansion per the guidance of GL 88-01 and its supplement, and (3) make administrative changes wherein certain system names are replaced by system names which are more consistent with those used in other portions of the TS and implementing surveillance procedures.

2.0 EVALUATION

The CNS licensee has proposed several changes to the TS to meet the guidance of GL 88-01 and GL 88-01, Supplement 1, and to make editorial changes. The NRC staff has reviewed the changes and finds them acceptable, as discussed below.

(1) Limiting Condition for Operation (LCO) 3.6.C.1 is revised by this amendment to state that reactor coolant leakage into the primary containment from unidentified sources shall not increase at a rate greater than 2 gpm within the previous 24 hour period. If this LCO cannot be met, the revised TS requires that the reactor must be in Cold Shutdown within 24 hours. This change imposes a 2 gpm limit on the increase of unidentified reactor coolant leak rate over a 24-hour period, establishes specific operability requirements for drywell sump flow measuring systems, and increases the frequency of Reactor Coolant System (RCS) leakage checks. The licensee states that this change provides more stringent criteria for the early detection of unidentified leakage within primary containment. This additional restriction will enhance the ability to detect leaks in the reactor coolant pressure boundary, thereby reducing the potential for a significant failure of the pressure boundary. This change incorporates additional restrictions into the TS and does not involve the modification or addition of any plant hardware, nor does it involve a change in those plant settings that affect plant operation responses. This change conforms to part 1 of the staff position on leak detection given in GL 88-01, and is, therefore, acceptable.

(2) LCO 3.6.C.2 is revised by this amendment to limit the outage time of one sump flow measuring system to 24 hours. However, the revised LCO states that if leakage can be quantitatively measured by manually pumping the sump or measuring the difference in sump level, outage time may be extended to a maximum of 30 days. This conforms to alternative staff position (3) of GL 88-01, Supplement 1, and is, therefore, acceptable.

(3) Surveillance Requirement (SR) 4.6.C.1 is revised by this amendment to require that RCS leakage be checked by the sump and containment atmospheric sampling systems and recorded at least once per shift, not to exceed 12 hours. This additional requirement regarding the drywell sump flow measuring systems will provide added assurance that the sumps will always be available for the early detection of unacceptable leakage during plant operations. This conforms to alternative staff position (1) of GL 88-01, Supplement 1, and is, therefore, acceptable.

(4) TS 4.6.G, "Inservice Inspection," is revised by this amendment to state that the inservice inspection program for piping identified in Generic Letter 88-01, shall be performed in accordance with the staff positions on schedule, methods, personnel, and sample expansion, included in Generic Letter 88-01. The licensee notes that this change incorporates additional restrictions into the TS and does not result in any plant modifications or change in plant hardware. The augmented inservice inspection program, for piping identified in Generic Letter 88-01 does not affect plant operations. However, adoption of this augmented inservice inspection program provides added assurance that piping susceptible to Intergranular Stress Corrosion Cracking (IGSCC) will maintain integrity throughout all modes of plant operation. This change conforms to alternative staff position (6) of GL 88-01, Supplement 1, and is, therefore, acceptable.

(5) A number of editorial changes were made by this amendment to TS pages 135, 137, and 149. These editorial changes make the TS internally consistent and to correct errors. The changes were made to TS Sections LCO 3.6.C, "Coolant Leakage," LCO 3.6.E, "Jet Pumps," LCO 3.6.F, "Recirculation Pump Flow Mismatch," LCO 3.6.G, "Inservice Inspection," SR 4.6.C, "Coolant Leakage," SR 4.6.E, "Jet Pumps," and SR 4.6.G, "Inservice Inspection." These changes involve the replacement of various terms (system names) used to refer to the drywell air sampling system and the sump flow measuring systems with the terms "drywell air sampling system" and "sump flow measuring systems." The purpose of this change is to utilize system names that are consistent with those used in other parts of the TS and the applicable implementing surveillance procedures. This change is administrative and does not involve a change in plant operations, plant modification, or a change in plant hardware. Also, appropriate modifications were made to TS Bases 3.6.C, 4.6.C, 3.6.D, and 4.6.D to reflect the changes made to the body of the TS. The NRC staff has reviewed these changes and finds them acceptable because they are administrative in nature.

In summary, the NRC staff has reviewed the TS changes made by this amendment and finds the acceptable for the reasons given above. Accordingly, the TS changes proposed in Reference 1 are hereby approved.

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 comment.

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 and changes in surveillance requirements. 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 (57 FR 12264). 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.

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 and enclosures from G. R. Horn, Nebraska Public Power District, to USNRC, dated February 1, 1993, "Proposed Change No. 112 to Technical Specifications, Generic Letter 88-01 Incorporation, Cooper Nuclear Station, NRC Docket No. 50-298, DPR-46."

(2) NRC Generic Letter 88-01, "NRC Position on IGSCC [Intergranular Stress Corrosion Cracking] in BWR [Boiling Water Reactor] Austenitic Stainless Steel Piping," dated January 25, 1988.

(3) Supplement 1 to NRC Generic Letter 88-01, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping," dated January 30, 1992.

Principal Contributor: H. Rood

Date: April 14, 1993