

May 2, 2006

Mr. Randall K. Edington
Vice President-Nuclear and CNO
Nebraska Public Power District
P. O. Box 98
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION - ISSUANCE OF AMENDMENT RE:
CHANGES TO THE TECHNICAL SPECIFICATION LEAKAGE LIMIT FOR THE
MAIN STEAM ISOLATION VALVES FROM AN INDIVIDUAL TO AN
AGGREGATE LIMIT (TAC NO. MC9517)

Dear Mr. Edington:

The Commission has issued the enclosed Amendment No. 220 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The amendment consists of a change to the Technical Specifications in response to your application transmitted by letter dated December 30, 2005. The amendment changes the Technical Specifications Main Steam Isolation Valve Leakage Surveillance Requirement. The licensee will also make conforming changes to Bases.

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

Sincerely,

/RA/

Brian Benney, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosures: 1. Amendment No. 220 to DPR-46
2. Safety Evaluation

cc w/encls: See next page

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NEBRASKA PUBLIC POWER DISTRICT

DOCKET NO. 50-298

COOPER NUCLEAR STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 220
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 30, 2005, 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. 220, are hereby incorporated in the license. The 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/

David Terao, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 2, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 220

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 an amendment number and contains a marginal line indicating the area of change.

REMOVE

3.6-14

INSERT

3.6-14

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 220 TO

FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NUMBER 50-298

1.0 INTRODUCTION

By letter dated December 30, 2005, Nebraska Public Power District (the licensee) submitted a request for a change to the Cooper Nuclear Station (CNS) Technical Specifications (TSs). The licensee's proposal would revise the TS Surveillance Requirement (SR) 3.6.1.3.10. Specifically, this change would establish a total leakage rate limit for the sum of the four main steam isolation lines of 46 standard cubic feet per hour (scfh), that is equal to four times the current individual main steam isolation valve (MSIV) leakage rate limit of 11.5 scfh.

2.0 REGULATORY EVALUATION

Compliance with Appendix J of Part 50, Title 10 of the *Code of Federal Regulations* (10 CFR) provides assurance that leakage through the primary containment, including those systems and components that penetrate the primary containment, does not exceed the allowable leakage rate values specified in the plant TSs and their bases. The allowable leakage rate is determined so that the leakage assumed in the plant safety analyses is not exceeded.

The CNS primary containment system (BWR Mark I) consists of a drywell, which encloses the reactor vessel and recirculation pumps, the pressure suppression chambers, which store a large amount of water, a connecting vent system between the drywell and the suppression chamber, and isolation valves. The four main steam lines that penetrate the primary containment boundary each have two 24-inch diameter isolation valves installed in series for a total of eight valves. Appendix J requires that periodic Type C local leakage rate testing be performed upon the MSIVs to verify that any leakage past them would be less than the allowable limit. Type C leak rate testing of the MSIVs is performed in accordance with the requirements of Appendix J (as modified by approved exemptions). Appendix J requires that the combined leakage of all containment penetrations and valves that are subject to Type B and C testing shall be less than 0.6 times the maximum allowable containment leak rate (L_a). For CNS, L_a is 0.635 percent of the containment air weight per day at the maximum peak containment pressure (P_a) or 0.45 percent at a reduced pressure P_t for a design-basis loss-of-coolant accident. P_a is 58.0 pounds per square inch gauge (psig) for CNS. The MSIVs are tested at a lower test pressure (P_t) of 29 psig in accordance with a previous exemption.

Boiling-water reactor (BWR) plants generally have additional leakage limits placed specifically on the MSIVs, in recognition of their large size and historical tendency to leak excessively. In the case of CNS, the current leakage limit is 11.5 scfh per valve.

The Boiling Water Reactor Owners' Group (BWROG) has issued a topical report on MSIV leakage limits, NEDC-31858P, Revision 2, "BWROG Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems," dated September 1993. In their report, the BWROG states that MSIV leakage could increase in excess of 200 scfh per valve without reducing the valve's ability to perform its safety function.

In a safety evaluation (SE) dated March 3, 1999, the Nuclear Regulatory Commission (NRC) staff accepted the report for direct reference in future individual plant submittals on the MSIV leakage issue, subject to certain conditions. In the SE, the NRC staff concurred with the conclusion stated above.

Based on foregoing CNS's current 11.5 scfh leakage limit does not provide an indication that a valve's safety capability is reduced. As set forth below, the 11.5 scfh limit often causes unnecessary maintenance on the valves simply to maintain the low leakage rate. The use of the proposed combined steam line leakage rate would reduce unnecessary repair of the isolation valves and worker radiation exposure while still maintaining the equivalent maximum leak rate.

The licensee's proposed TS change is similar to changes approved by the NRC staff for a number of BWR plants, including TS changes approved for Monticello Nuclear Generating Plant on April 3, 1996, and Dresden Nuclear Power Station, Units 2 and 3, on October 1, 1999.

3.0 TECHNICAL EVALUATION

The effect of the proposed amendment would be to allow any single main steam line to have a maximum leakage rate of up to 46 scfh when tested at 29 psig (i.e., four times greater than the current individual main steam line leakage limit), provided that the sum of the leakage for all four main steam lines is also less than or equal to 46 scfh. The aggregate main steam line leakage limit in the proposed TS SR 3.6.1.3.10 is in accordance with the leakage rate assumptions made in the plant safety analysis, which forms the basis for this TS limit.

As discussed in Section 2.0 of this SE, the measured leakage rates of the main steam lines are included in the total leakage rate calculated for all penetrations whose leakage is measured by Type B and Type C local leakage rate tests. The CNS TS Bases state that the total leakage rate for all Type B and C tested penetrations is required to be less than $0.6 L_a$. Therefore, the proposed revision to TS SR 3.6.1.3.10 would not affect the total leakage rate through containment valves and penetrations which are subject to periodic Type B and Type C testing in accordance with Appendix J.

The removal of main steam isolation valve individual leakage limits may slightly increase the expected value of the actual aggregate main steam line leakage, due to the current low likelihood that all eight main steam isolation valves would simultaneously be leaking at or near their limiting individual rate. However, such an increase would not be significant. In addition, since the time that individual MSIVs leakage limits were introduced into the CNS TS, the NRC staff has re-examined its position on the suitability of these individual limits. As indicated in

Section 2.0 of this SE, the NRC staff has granted TS changes for a number of BWR plants to permit the replacement of individual MSIVs leakage limits with aggregate limits.

The NRC staff's SEs for these TS changes: (1) cited the fact that individual main steam leakage limits are not needed in order to comply with plant safety analyses or Appendix J requirements for Type B and Type C testing, and (2) documented the NRC staff's conclusion that the disadvantages such as increased maintenance and higher worker radiation exposure associated with maintaining relatively low individual main steam leakages are not justified by any additional conservatism the individual limits might provide. Recognizing this, the NRC staff has determined, that individual leakage rate limits for main steam lines or valves need not be specified, considering that an aggregate main steam line leakage limit would satisfy the basis for the TS requirement.

Based on the above, the NRC staff has concluded that the aggregate limit for main steam line leakage proposed by the licensee in TS SR 3.6.1.3.10: (1) would not exceed the leakage rate assumed for the main steam lines in the plant safety analysis, and (2) would be in accordance with the leakage testing requirements of Appendix J to 10 CFR Part 50. The margin of safety is not affected by the proposed change because the postulated radiation doses remain the same. Therefore, the NRC staff finds the proposed change to the CNS TS to be 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 and changes 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 (71 FR 10073; February 28, 2006). 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.

Principal Contributor: B. Benney

Date: May 2, 2006

Cooper Nuclear Station

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February 2006