

October 31, 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: MSIV  
LEAKAGE EXEMPTION FROM 10 CFR PART 50, APPENDIX J (TAC NO.  
MD0570)

Dear Mr. Edington:

The Commission has issued the enclosed Amendment No. 226 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The amendment consists of changes to the Technical Specifications in response to your application dated March 15, 2006.

The amendment would revise Cooper Nuclear Station Technical Specification 5.5.12, "Primary Containment Leakage Rate Testing Program," by adding two sub-paragraphs to note exemptions from Section III.A and Section III.B of Part 50, Appendix J, Option B of Title 10 of the *Code of Federal Regulations*. These two sub-paragraphs allow the leakage contribution from the four main steam line penetrations, referred to as the Main Steam Isolation Valve leakage, to be excluded.

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/*

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. 226 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. 226

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 March 15, 2006, 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. 226, 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: October 31, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 226

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

5.0-16

5.0-17

INSERT

5.0-16

5.0-17

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 226 TO

FACILITY OPERATING LICENSE NO. DPR-46

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

1.0 INTRODUCTION

By letter dated March 15, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML060790435), the Nebraska Public Power District, the licensee for Cooper Nuclear Station (CNS), submitted a request for exemption from certain requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix J, Option B to allow the exclusion of main steam isolation valve (MSIV) leakage from the summation of containment leak rate test results and corresponding change to Technical Specifications (TS) 5.5.12, "Primary Containment Leakage Rate Testing Program." The proposed TS change adds two sub-paragraphs in TS 5.5.12 to note this exemption. The radiological consequences of main steam line leakage is modeled as a separate primary containment release path to the environment that bypasses secondary containment and its effects are specifically accounted for in the dose analysis.

In accordance with 10 CFR 50.12, the licensee has requested a permanent exemption for CNS from the requirements of 10 CFR Part 50, Appendix J, Option B, Section III.A and Section III.B. The exemption from Section III.A would allow exclusion of the MSIV leakage from the overall integrated leakage rate measurement when performing a Type A test. The exemption from Section III.B would allow exclusion of the MSIV leakage from the combined leakage rate of the containment local leak rate tests (Types B and C).

The licensee indicated that this request for exemption is similar to exemptions granted for Vermont Yankee Nuclear Power Station on March 17, 2005, and Browns Ferry Nuclear Plant, Units 2 and 3, on March 14, 2000. However, it is different in that CNS is not requesting an increase in the allowable leakage rate criteria through the MSIVs.

2.0 REGULATORY EVALUATION

Section 50.54(o) of 10 CFR requires that primary reactor containments for water-cooled power reactors be subject to the requirements of Appendix J to 10 CFR Part 50. Appendix J specifies the leakage test requirements, schedules, and acceptance criteria for tests of the leak tight

integrity of the primary reactor containment and systems, and components which penetrate the containment. Option B, Section III.A requires, among other things, that the overall integrated leak rate must not exceed the allowable leakage (La) with margin, as specified in TSs. The overall integrated leak rate is defined in 10 CFR Part 50, Appendix J as "the total leakage rate through all tested leakage paths, including containment welds, valves, fittings, and components that penetrate the containment system." This includes the contribution from MSIV leakage. The licensee has requested exemption from Option B, Section III.A requirements to permit exclusion of MSIV leakage from the overall integrated leak rate test measurement.

Option B, Section III.B of 10 CFR Part 50, Appendix J requires, among other things, that the sum of the leakage rates at accident pressure of Type B tests and pathway leakage rates from Type C tests be less than the performance criterion (La) with margin, as specified in the TS. The licensee also requests an exemption from this requirement, to permit exclusion of the MSIV contribution to the sum of the Type B and Type C tests.

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health and safety, and are consistent with the common defense and security, and (2) when special circumstances are present. Special circumstances are present when, according to 10 CFR Part 50.12(a)(2):

- (i) Application of the regulation in the particular circumstances conflicts with other rules or requirements of the Commission; or
- (ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule; or
- (iii) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated; or
- (iv) The exemption would result in benefit to the public health and safety that compensates for any decrease in safety that may result from the grant of the exemption; or
- (v) The exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation; or
- (vi) There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption. If such condition is relied on exclusively for satisfying paragraph (a)(2) of this section, the exemption may not be granted until the Executive Director for Operations has consulted with the Commission.

### 3.0 DISCUSSION AND TECHNICAL EVALUATION

Part 50 of 10 CFR, Appendix J testing ensures that primary containment leakage following a design-basis loss-of-coolant accident will be within the allowable leakage limits specified in plant TSs and assumed in the safety analyses for determining radiological consequences. For CNS, the acceptance criteria limit for the Type A test containment integrated leakage rate test (CILRT) is 0.75 La for return to power following performance of the CILRT. This limit is shown in CNS TS 5.5.12, "Primary Containment Leakage Rate Testing Program." The 0.75 La acceptance criterion allows for a 25 percent margin for degradation during plant operation. The CILRT currently includes leakage through the closed MSIVs. The acceptance limit for the sum of the leakage rates for all Type B and Type C local leak rate tests is 0.60 La. This limit currently includes leakage through the closed MSIVs.

The MSIV leakage effluent has a different pathway to the environment, compared to other penetrations. It is not directed into the secondary containment and filtered through the standby gas treatment system as is other containment leakage. Instead, the MSIV leakage is directed through the main steam, drain piping into the condenser and is released into the environment as an unfiltered ground level effluent. The licensee analyzed the MSIV leakage pathway and the containment leakage pathways separately in a dose consequences analysis. The calculated radiological consequences of the combined leakage were found to be within the criteria of 10 CFR Part 100 and General Design Criterion (GDC) 19. The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the licensee's analyses and found them acceptable as described in a safety evaluation dated September 1, 2004 (ADAMS Accession No. ML042470174). By separating the MSIV leakage acceptance criteria from the overall integrated leak rate test criterion, and from the Type B and C leakage sum limitation, the CNS containment leakage testing will be made more consistent with the limiting assumptions used in the associated accident consequences analyses. The amendment associated with this exemption will revise TS 5.5.12 by adding two sub-paragraphs (4. and 5.) to reflect exemptions from Sections III.A and Section III.B of 10 CFR Part 50, Appendix J. The requested exemption from Appendix J requirements for MSIV leakage rates will allow the CNS Containment Leakage Rate Testing Program to more closely align with the assumptions used in the associated accident analysis. The licensee stated and the NRC staff finds it acceptable, that approval of this exemption will not result in any change to the LOCA dose calculation.

The exemption and amendments together would implement the recommendation of Topical Report NEDC-31858, "BWR Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems." The topical report was evaluated by the NRC staff and accepted in a safety evaluation dated March 3, 1999 (ADAMS Accession No. ML010640286). The special circumstances associated with MSIV leakage testing are fully described in the topical report. These circumstances relate to the monetary costs and personnel radiation exposure involved with maintaining MSIV leakage limits more restrictive than necessary to meet offsite dose criteria and control room habitability criteria.

The underlying purpose of Appendix J is to assure that containment leak tight integrity is maintained (a) as tight as reasonably achievable, and (b) sufficiently tight so as to limit effluent release to values bounded by the analyses of radiological consequences of design-basis



accidents. The NRC staff has determined that the intent of the rule is not compromised by the proposed action because, based on the environmental assessment, granting of this exemption will have no significant impact on the quality of the human environment (71 FR 61074).

Pursuant to 10 CFR 50.12, an exemption is authorized by law and will not present an undue risk to the public health and safety, and there are special circumstances present, as specified in 10 CFR 50.12(a)(2)(ii). Therefore, an exemption can be granted from the requirements of Sections III.A and III.B of Option B of Appendix J to 10 CFR Part 50. The exemption allows exclusion of MSIV leakage from the overall integrated leak rate test measurement and from the sum of Type B and C test measurements used to determine compliance with TS surveillance requirements for containment operability.

#### 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

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact was published in the Federal Register on October 17, 2006 (71 FR 61074). Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant effect on the quality of the human environment.

#### 6.0 CONCLUSION

Based on the above, the NRC staff finds that the licensee's proposed request for an exemption to allow exclusion of MSIV leakage from the overall integrated leak rate test measurement and from the sum of Type B and C test measurement requirements of Sections III.A and III.B of Option B of Appendix J to 10 CFR Part 50 may be granted and the corresponding changes to CNS TS 5.5.12 are acceptable. 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.

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Date: October 31, 2006

Cooper Nuclear Station

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October 2006