Nebraska Public Power District
Always there when you need us

NLS2006068
August 29, 2006

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Response to Request for Additional Information Regarding License Amendment Request for a One-Time Extension of the Integrated Leakage Rate Test Interval
Cooper Nuclear Station, Docket No. 50-298, DPR-46

References:

1. Letter from Brian Benney, U.S. Nuclear Regulatory Commission, to Randall K. Edington, Nebraska Public Power District, dated August 15, 2006, "Cooper Nuclear Station – Request for Additional Information Re: Request for a One-Time Extension of Containment Integrated Leakage Rate Test Interval" (MC9732)

2. Letter from Randall K. Edington, Nebraska Public Power District, to U.S. Nuclear Regulatory Commission, dated January 30, 2006, "License Amendment Request for a One-Time Extension of Containment Integrated Leakage Rate Test Interval" (NLS2006002)

The purpose of this letter is for the Nebraska Public Power District (NPPD) to submit a response to the Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by NRC letter dated August 15, 2006 (Reference 1). In Reference 1 the NRC indicated this information is needed to complete their review of the NPPD license amendment request for a one-time extension of the Integrated Leakage Rate Testing interval for the Cooper Nuclear Station, submitted by letter dated January 30, 2006 (Reference 2). The response to the RAI is provided in the attachment.

The information submitted by this RAI response does not change the evaluation of No Significant Hazards Consideration submitted by the Reference 2 letter.

Should you have any questions regarding this submittal, please contact Paul Fleming, Licensing Manager, at (402) 825-2774.

COOPER NUCLEAR STATION
P.O. Box 98 / Brownville, NE 68321-0098
***Telephone:** (402) 825-3811 / **Fax:** (402) 825-5211*
www.nppd.com

A001

I declare under penalty of perjury that the forgoing is true and correct.

Executed on August 29, 2006.

Sincerely,

Randall K. Edington
Vice President-Nuclear and
Chief Nuclear Officer

/rr

Attachment

cc: Regional Administrator w/ Attachment
USNRC - Region IV

Cooper Project Manager w/ Attachment
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/ Attachment
USNRC - CNS

Nebraska Health and Human Services w/ Attachment
Department of Regulation and Licensure

NPG Distribution w/o Attachment

CNS Records w/ Attachment

Attachment

Response to Request for Additional Information Regarding License Amendment Request for One-Time Extension of the Integrated Leakage Rate Test Interval

Cooper Nuclear Station, Docket No. 50-298, DPR-46

Reference: Letter from Brian Benney, U.S. Nuclear Regulatory Commission, to Randall K. Edington, Nebraska Public Power District, dated August 15, 2006, "Cooper Nuclear Station – Request for Additional Information Re: Request for a One-Time Extension of Containment Integrated Leakage Rate Test Interval" (MC9732)

1. NRC Request

IWE-1240 requires licensees to identify the containment surface areas requiring augmented examinations. Provide the locations of the steel containment surfaces that have been identified as requiring augmented examination and a summary of the findings of the examinations performed.

NPPD Response

The Cooper Nuclear Station (CNS) Containment Inspection Program identifies the wetted surface of the suppression pool (Torus) as the only area requiring augmented examination. It is visually examined once each inspection period. VT-1 examinations are performed in accordance with ASME Section XI, 1992 Edition, 1992 Addenda.

These examinations were performed during outages in March 2001 (period 1) and January 2005 (period 2). Pitting was observed in both examinations, primarily around the piping penetrations. Pits depths exceeding pre-established examination criteria were evaluated. None of the pits exceeded the design code allowable for maximum pit depth. Areas of pitting were recoated with an underwater epoxy coating to minimize subsequent pitting and corrosion.

Additional examinations of the remaining bays of the torus were performed in accordance with 10 CFR 50.55a, Codes and Standards, Section 50.55a(b)(2)(ix)(D), as an alternative to IWE-2430. The remaining bays exhibited similar or lesser levels of degradation from pitting. Preservice VT-1 visual examinations were performed on the recoated areas. The results of these examinations were acceptable.

2. NRC Request

For the examination of penetration seals and gaskets, and examination and testing of bolted connections associated with the primary containment pressure boundary, the licensee requested relief from the requirements of the code. As an alternative, the licensee proposed to examine the above items during the leak-rate testing of the primary containment. Option B of Appendix J for Type B and Type C testing (per Nuclear Energy Institute (NEI) 94-01 and Regulatory Guide (RG) 1.163), and the integrated leakage rate test extension requested in this amendment for Type A testing, provide flexibility in the scheduling of these inspections. Discuss your schedule for examination and testing of seals, gaskets, and bolted connections that provide assurance regarding the integrity of the containment pressure boundary.

NPPD Response

As an alternative to examination, the leak-tightness of seals and gaskets is tested through local leakage rate test (LLRT) pursuant to 10CFR50, Appendix J, in accordance with Relief Request RC-02. (The Nuclear Regulatory Commission documented their approval of Relief Request RC-02 in letter from John N. Hannon to G. R. Horn, Nebraska Public Power District, dated November 18, 1998). For those penetrations that are routinely disassembled during refueling outages, a LLRT is required upon final assembly and prior to start-up. For example, the leak tightness of seals, gaskets, and bolting, associated with containment equipment hatches, airlocks, and drywell head that are opened during an outage, are verified by a LLRT. For seals and gaskets that are not routinely disassembled, the frequency of LLRT is based on past performance, and may be on a frequency up to once every ten years.

The allowance for increasing test intervals and justification for extending Type B test intervals to ten years is presented in sections 10.2.1.2 and 11 of NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J." NEI 94-01 was endorsed by the NRC in Regulatory Guide 1.163, "Performance Based Containment Leak-Test Program," dated September 1995. Currently, CNS performs LLRTs at intervals of no greater than once every 60 months.

Containment bolted connections that are disassembled during the course of normally scheduled work activities receive a VT-1 visual examination as required by Table IWE-2500-1, Item E8.10. Flaws or degradation identified during the VT-1 examination are reviewed by the Inservice Inspection Program Engineer and the Authorized Nuclear Inservice Inspector. Conditions exceeding allowable standards are entered into the Corrective Action Program for resolution.

The alternative LLRT and current practice of containment bolted connection examination provide continued assurance regarding integrity of the containment pressure boundary.

3. NRC Request

Inspections of some steel containment structures have identified degradation of uninspectable areas (gap between the shield wall and drywell). These degradations cannot be found by visual (i.e., VT-1 or VT-3) examinations unless they are through the thickness of the shell or when 100 percent of the uninspectable surfaces are periodically examined by ultrasonic testing. Discuss what approach is used in the Cooper Nuclear Station (CNS) to identify degradation of uninspectable areas of the containment.

NPPD Response

The few instances of Mark I containment external corrosion events are plant specific and not generic to the containment design. Based on CNS experience and that of our peers, the drywell shell at CNS would be susceptible to degradation only if significant chronic leakage is present. The degradation would be exacerbated if the sand cushion drains are plugged. If it can be shown that neither of these two events has occurred, it is reasonable to conclude that degradation has not occurred, and therefore, further effort to identify degradation in inaccessible areas of containment is not needed.

One area of the drywell that is inaccessible for examination is the air gap between the steel shell and concrete shield wall. The only source of water into this air gap is the reactor cavity when flooded during refueling outages. One method of introducing the water from the flooded reactor cavity into this area is failure of the refueling bellows. Leakage through the refueling bellows, or any other source, would result in moisture in the inaccessible air gap that will continue down directly to the sand cushion area. Sand cushion drain lines route any leakage into the air gap away from the drywell shell. These drain lines are monitored for leakage whenever the reactor cavity is flooded. Monitoring of the sand cushion drains has not detected moisture that could potentially corrode the exterior of the containment. CNS has not experienced any leakage of the refueling bellows that could introduce water to the exterior of the containment. The sand cushion drain lines have been previously confirmed to not be plugged. In addition, the CNS drywell exterior received a protective coating that provides additional assurance of corrosion protection. Based on this experience the exterior has not been selected for augmented examinations.

During CNS operation primary containment is inerted with nitrogen to maintain oxygen concentration within technical specification (TS) limits. This results in the containment being maintained at a slightly positive pressure. Primary containment pressure is continuously recorded in the Control Room and verified by TS surveillance on a

frequency of once every 12 hours. Degradation that results in a loss of primary containment integrity would be indicated by a drop in pressure in primary containment or by an increase in the nitrogen makeup flow rate. An increase in the rate of nitrogen makeup to containment would be detected and investigated. The fact that the containment is continuously pressurized by the containment inerting system, and is periodically monitored, provides assurance that gross containment leakage that may develop during power operation as a result of significant degradation of the containment will be detected.

4. NRC Request

In response to GL 87-05, Cooper committed to implement new surveillance procedures for inspection of sand cushion drains during refueling outages. Discuss the results obtained from the inspection.

NPPD Response

Procedures to monitor the sand cushion drain lines for leakage were prepared and implemented at CNS. The first performance of monitoring these drain lines was during April and May of 1989. The sand cushion drain lines are monitored for water leakage daily when the reactor cavity is flooded during outages. No leakage has been detected.

Correspondence Number: NLS2006068

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITMENT NUMBER	COMMITTED DATE OR OUTAGE
None		