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Omaha NE 68102-2247

April 11, 2003
LIC-03-0055

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

- References:
1. Docket No. 50-285
 2. Letter from OPPD (D.J. Bannister) to NRC (Document Control Desk) dated October 8, 2002, Fort Calhoun Station Unit No. 1 License Amendment Request, LAR - Risk-Informed One Time Increase in Integrated Leak Rate Test Surveillance Interval (LIC-02-0108)
 3. Letter from NRC (A. B. Wang) to OPPD (R. T. Ridenoure) dated March 24, 2003, Request for Additional Information Related to Ft. Calhoun Station Integrated Leak Rate Test Surveillance Interval (TAC No. MB6473) (NRC-03-055)

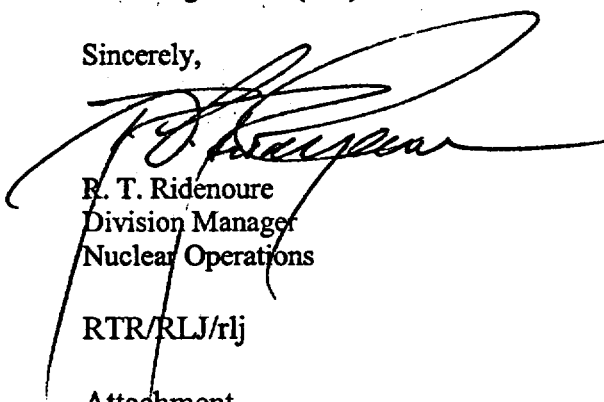
SUBJECT: Response to Request for Additional Information, Integrated Leak Rate Testing Surveillance Interval Amendment Request (TAC No. MB6473)

In support of license amendment request, "Risk-Informed One Time Increase in Integrated Leak Rate Test Surveillance Interval" (Reference 2), the Omaha Public Power District (OPPD) provides the attached response to the Nuclear Regulatory Commission's (NRC's) Request for Additional Information of Reference 3, questions 1 through 5. The response to question 6, currently being prepared, will be provided by June 30, 2003.

I declare under penalty of perjury that the forgoing is true and correct. (Executed on April 11, 2003). No commitments are made in this letter.

If you have any questions or require additional information, please contact Dr. R. L. Jaworski of the FCS Licensing staff at (402) 533-6833.

Sincerely,



R. T. Ridenoure
Division Manager
Nuclear Operations

RTR/RLJ/rlj

Attachment

A001

U. S. Nuclear Regulatory Commission

LIC-03-0055

Page 2

c: E. W. Merschoff, NRC Regional Administrator, Region IV
A. B. Wang, NRC Project Manager
J. G. Kramer, NRC Senior Resident Inspector
Winston & Strawn

**Response to NRC Request for Additional Information
Fort Calhoun Station, Unit 1
One Time Increase in Integrated Containment Leak Rate Test Interval**

Reference: Letter from D.J. Bannister (OPPD) to NRC, "Fort Calhoun Station, Unit 1 License Amendment Request, Risk-Informed One-Time Increase in Integrated Leak Rate Test Surveillance Interval," October 8, 2002.

NRC Question 1:

The Reference does not provide any information regarding the implementation of 10 CFR 50.55a related to the inservice inspection (ISI) of the Fort Calhoun Station (FCS) containment. Please provide the following information regarding the containment ISI program implemented in accordance with the requirements of 10 CFR 50.55a:

- a. The Edition and the Addenda of Subsections IWE and IWL of Section XI of the ASME Boiler and Pressure Vessel Code used for developing the ISI program.
- b. A summary of the significant degradation (e.g., liner corrosion in excess of 10% of the nominal thickness, or pre-stressing force trend that may not meet the minimum required pre-stress at the next scheduled tendon inspection) found during the expedited examination of the containment and corrective actions taken.
- c. The areas of containment identified for augmented examination in accordance with IWE-1240.

OPPD Response:

FCS has implemented inservice inspection (ISI) requirements mandated by 10 CFR 50.55a for containment structure inspection using the requirements of the 1992 Edition with the 1992 Addenda of the ASME Boiler and Pressure Vessel Code, Section XI, Division I, Subsections IWE and IWL, as modified by NRC final rulemaking to 10 CFR 50.55a published in the Federal Register on August 8, 1996.

Expedited inspections conducted in accordance with the FCS IWE/IWL Program Plan revealed no significant degradation of the containment liner. Deficiencies were limited to minor areas of surface corrosion which were repaired or documented for further monitoring by FCS condition reporting and maintenance processes. Concrete inspections and Containment Tendon Testing conducted by or in conjunction with the FCS IWE/IWL Program Plan also had only minor identified deficiencies. Results of tendon tension measurements were within the boundaries established by existing relaxation curves and were projected over the period until the next scheduled test by a regression analysis. All results are within the expected range and do not indicate that minimum required pre-stress is a concern over the next inspection period.

No areas of containment have been identified as requiring augmented inspection per the requirements of IWE-1240.

NRC Question 2:

IWE-5200, and IWL-5000, requires an ILRT (pressure testing) after a major repair/replacement activity. In order for the staff to make a consistent assessment of the amendment request, the licensee is requested to provide information about its plan to have major repair/replacement to the containment (e.g. cut a hole in the containment for steam generator or reactor pressure vessel head replacement) during the requested ILRT interval extension period.

OPPD Response:

OPPD is preparing to replace steam generators and possibly other reactor coolant system components within the next four years. These replacements will require constructing and repairing a containment wall opening larger than the existing equipment hatch. FCS understands ASME Code Section XI requires an ILRT (pressure testing) after major repair/replacement activity to the containment structure. This relief request does not address any relief from the repair and replacement test requirements; it only requests relief from the periodic ILRT requirement. If FCS determines that alternative methods to ensure safe and reliable containment conditions are appropriate, separate relief from the containment structure repair/replacement testing requirement will be requested.

NRC Question 3:

Please provide a summary of findings of the examination of containment concrete performed in accordance with 10 CFR 50.55a and Subsection IWL including the acceptance criteria used for accepting concrete and reinforcing bar degradation.

OPPD Response:

Containment Concrete Inspection conducted in accordance with 10 CFR 50.55a and ASME Section XI, Subsection IWL resulted in no areas which indicated significant degradation or required repair. All accessible exposed areas were inspected using a VT-3C general inspection criteria. Potential areas of concern were given a detailed VT-1C inspection. VT-1C inspection results were evaluated for acceptability by the FCS Responsible Engineer. Definitions of disintegration, deterioration, large spall, severe scaling, and D-cracking as found in the American Concrete Institution Publication, ACI 201.1 R-68, were used in conducting the inspection and in evaluation of the inspection results.

NRC Question 4:

Recognizing the hardship associated with examining seals, gaskets, and pressure retaining bolts, during each inspection period, and that the examination will be performed prior to Type B testing as required by Option A of Appendix J, the staff had granted such relief to a number of licensees. However, implementation of Option B of Appendix J allows flexibility in performing Type B testing based on the leak rate performance of the penetrations. As the performance based testing allows certain leak rate through the penetrations, minor initial degradation of the associated seals, gaskets and bolting can go undetected, and 10 year examination interval could be too long for the degraded components. Thus, examination of seals, gaskets and pressure retaining bolting should be scheduled based on their performance (i.e., plant-specific experience, replacement schedules for resilient seals, etc.), to ensure that, if Type B testing is not performed during the ILRT extension period, the examination schedule will detect degradation of these components. In view of this discussion the licensee is requested to provide a schedule for examining (testing) of these components for equipment hatches and other penetrations with resilient seals.

OPPD Response:

No Type B containment tests at FCS have been extended beyond a 5-year test interval. Although longer test intervals are allowed by Option B, FCS has determined that additional engineering analysis to support a 10 year test interval is not warranted. The FCS Leakage Rate Test Program Basis Document (PBD-5) schedules all Type B tests, at a maximal interval of 5 years based on specific plant performance. In compliance with the FCS Containment Leakage Rate Program, access openings (Fuel Transfer Flange, Personnel Access Lock and Equipment Hatch) are scheduled for Type B testing at a Refueling Outage frequency. Testing is performed subsequent to closure following outage operation.

NRC Question 5:

The stainless steel bellows have been found to be susceptible to trans-granular stress corrosion cracking, and the leakages through them are not readily detectable by Type B testing (see NRC Information Notice 92-20). The licensee is requested to provide information regarding inspection and testing of the bellows of the FCS containment.

OPPD Response:

Bellows forming containment boundaries at FCS are limited to those at the piping penetrations for Main Steam and Feedwater Systems. Type B testing is currently performed on all bellows at a Refueling Outage interval. Type B test results have been effective in identifying leakage and have been critical to determinations for bellows replacement. These bellows have significant design differences from those described in NRC Information Notice 92-20 in that they are not manufactured in layers (not tested between layers) which may inhibit effective Type B testing.

NRC Question 6:

Inspections of some reinforced and steel containments (e.g., North Anna, Brunswick, and D. C. Cook, Oyster Creek) have indicated degradation from the uninspectable (embedded) side of the steel shell and liner of primary containments. The major uninspectable areas of the FCS containment would include those at the liner concrete interface in the dome and the cylinder, and in the basemat liner embedded in the concrete. Please provide a quantitative assessment of the impact on LERF due to age related degradation in these areas, in support of the requested ILRT interval extension

OPPD Response:

This question will be answered by a probabilistic risk assessment analysis to be submitted by June 30, 2003.