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SUBJECT: Requests approval of continued relief for existing repairs of svc water lines at containment penetrations until permanent repair can be accomplished during Refueling Outage 15.

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CP&L
Carolina Power & Light Company

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
REPAIR OF SERVICE WATER LINE CONTAINMENT PENETRATIONS AND REQUEST FOR CONTINUATION OF RELIEF

Gentlemen:

In our letter dated January 16, 1991, Carolina Power & Light Company (CP&L) committed to provide a plan and schedule for permanent repair of certain service water lines associated with the containment penetrations. Implementation of this plan requires the continuation of the relief granted from the requirements of the ASME Code Section XI pursuant to 10CFR50.55a(g)(6)(i) as documented in your letter dated January 23, 1991. This continued relief is requested until the permanent repairs are made during Refueling Outage 15 (presently scheduled for late 1993) for the four welds which received temporary non-code repair during Refueling Outage 13. The plan and schedule for permanent repair of these welds and the remaining service water lines at the penetrations are described in the enclosure along with a summary of the chronological events leading to the present state of repair. The basis for this schedular extension and compensatory actions is discussed below.

The welds in question are to be permanently repaired as part of a project to replace service water system piping liners in the containment penetrations with a material more resistant to Microbiologically Induced Corrosion.

The need to perform the permanent repairs for penetration piping during Refueling Outage 15 is based on the extensive engineering and construction planning effort for the work. These efforts cannot be completed in time to support installation during Refueling Outage 14. Until engineering and construction planning are complete, the availability of all needed materials is also uncertain. In addition, this task will incur a high radiation dose, presently estimated to be 124 man-rem, due to the location of the penetrations. The additional planning time available with a Refueling Outage 15 implementation will allow improvements in dose planning such that ALARA is assured.

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The technical justifications presented in CP&L's January 16, 1991 relief request remain valid. Also, sketches provided in that submittal represent the penetrations discussed in this letter. As compensatory actions during operation for an additional cycle in this configuration, CP&L will: (1) maintain chlorination of the service water system during its operation, (2) lay up, per approved methods, appropriate portions of the system during extended non-operating periods, and (3) continue to perform visual inspections for leakage in the vicinity of the affected piping during the normal monthly inspections of the containment.

CP&L requests approval of continued relief for the existing repairs of the service water lines at the containment penetrations until permanent repair can be accomplished during Refueling Outage 15.

Questions regarding this matter may be referred to Mr. R. W. Prunty at (919) 546-7318.

Yours very truly,

C. R. Dietz
Vice-President
Robinson Nuclear Project Department

JSK/jbw (1322RNP)

Enclosure

cc: Mr. S. D. Ebneter
Mr. L. Garner (NRC-HBR)
Mr. R. Lo

PLAN AND SCHEDULE FOR PERMANENT REPAIR

BACKGROUND

During Refueling Outage 13 (1990-1991), Microbiologically Induced Corrosion (MIC) pitting was detected in portions of the Service Water (SW) supply and return piping on either side of the containment penetrations in the heat-affected zone of the welds. A summary of chronological events that resulted in the replacement of some of this piping at various times is provided below.

During original plant design, SW supply and return piping for containment fan cooling units HVH-1, 2, 3, and 4 and their motor cooler lines were made of ASTM A312 TP304 sch. 10.

During Refueling Outage 9 (1984), welds in much of the SW piping, both inside and outside of containment, were found to have pinhole leaks caused by MIC. As a result, supply and return piping for HVH-4 under the refueling canal was abandoned in place; and new ASTM A312 TP316L sch. 40 piping was installed. Also, SW piping passing through containment penetrations was lined with 6" sch. 160, ASTM A312 TP304L pipe. In addition, SW supply and return piping welds on either side of the containment penetrations were covered with an outer sleeve of ASTM A312 TP304L.

During Refueling Outage 12 (1988-1989), the inside containment portion of the supply and return piping for HVH-1, 2, 3, and 4 (except for the HVH-4 piping under the refueling canal) and the motor coolers supply and return piping were replaced with AL6XN (UNS N08637) sch. 10S, a better grade of material known to be more resistant to MIC attack. In addition, the outer sleeves installed on the supply and return SW piping near the penetrations in 1984 were cut to expose the piping/liner welds. The exposed ends of the inner liners were seal welded.

During Refueling Outage 13, SW piping outside containment from the discharge side of the SW booster pumps to the first weld outside the containment penetrations was replaced with AL6XN, sch. 10S material. Also, the portion of the HVH-4 supply and return piping under the refueling canal and some piping welds near the penetrations were radiographed to check for MIC. Evaluation confirmed MIC damage. Piping near the containment penetrations and piping associated with HVH-4 under the refueling canal was sleeved with AL6XN sch. 10S material. Approval of this temporary repair was obtained from the NRC on January 23, 1991. CP&L committed to replace the 316L stainless supply and return piping to HVH-4 during Refueling Outage 14 and to provide a plan and schedule for permanent repair of the SW containment penetrations by September 30, 1991.

PROPOSED PERMANENT REPAIR

CP&L proposes the following multi-phase and comprehensive action plan to resolve current MIC phenomena concerns in the Service Water system:

1. During Refueling Outage 14 (spring 1992), CP&L will:

   a. Replace the HVH-4 SW line (316L) under the refueling canal with AL6XN material.

   b. Perform 100 percent RT of sleeve and liner welds associated with HVH-1, 2, 3, and 4 containment penetrations. Any weld found with MIC indications will be evaluated and dispositioned at that time.

   c. Lay up, per approved methods, appropriate portions of the SW system during extended non-operating periods.

2. During Cycle 15, CP&L will:

   a. Maintain chlorination of the service water system during its operation.

   b. Continue to perform visual inspections for leakage in the vicinity of the affected piping during the normal monthly inspections of the containment.

   c. Lay up, as described above, if extended non-operating periods occur.

3. During Refueling Outage 15 (fall 1993), CP&L will:

   a. Replace ASTM A312 TP304L steel liners in all eight SW lines inside containment penetrations with AL6XN (UNS N08637). The new liner will act as the pressure boundary of the SW piping inside the penetrations and meet the Code requirements.

   b. Lay-up, per approved methods, appropriate portions of the SW System during extended non-operating periods.