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SUBJECT: Forwards revised request for relief from ISI requirements for ASME Code Case N-522..

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CP&L

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William R. Robinson
Vice President
Harris Nuclear Plant

JAN 24 1997

SERIAL: HNP-97-006

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI
REVISED REQUEST FOR APPROVAL TO USE CODE CASE N-522

Reference: Carolina Power & Light Company Letter, Serial Number: HNP-96-106, ASME Boiler and Pressure Vessel Code, Section XI Request For Approval to Use Code Case N-522, dated September 9, 1996

Dear Sir or Madam:

In the above-referenced letter, Carolina Power & Light Company (CP&L) requested approval to use an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components" at the Harris Nuclear Plant (HNP). Specifically, CP&L requested approval to use the alternative requirements of ASME Code Case N-522 in lieu of the pressure testing required by the ASME Code, Section XI, Table IWC-2500-1, Category C-H, Item Numbers C7.30 and C7.40 for pressure testing certain Class 2 containment penetration piping.

The NRC has reviewed the CP&L request for approval to use ASME Code Case N-522 at HNP and has requested the following revisions and additional information:

- Remove penetration M-65 and the Penetration Pressurization System from the scope of the request for approval,

- Reference CP&L procedures for using a leak detection fluid,

- Clarify that CP&L will only use Code Case N-522 at a pressure of greater than or equal to P_a as defined in HNP Technical Specification 3.6.1.2, and

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- Identify that HNP is currently using the test frequency requirements of 10 CFR 50, Appendix J, Option A; however, CP&L may choose Option B at a later date to meet the testing requirements of Appendix J

CP&L has revised the request for approval to use ASME Code Case N-522 at HNP to incorporate the requested revisions and additional information. This revised relief request is provided as an enclosure to this letter and supersedes the initial September 9, 1996 request.

NRC approval is requested by March 15, 1997 to support planning activities for the final inservice inspection period of the first 10-year interval to be performed during the next refueling outage, currently scheduled to begin in April 1997.

Please refer any questions regarding this subject to Ms. D. B. Alexander at (919) 362-3190.

Sincerely,

W. R. Robinson

KWS/kws

Enclosure

c: Mr. J. B. Brady, NRC Sr. Resident Inspector
Mr. N. B. Le, NRC Project Manager
Mr. L. A. Reyes, NRC Regional Administrator

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REQUEST FOR RELIEF FROM INSERVICE INSPECTION REQUIREMENTS (ASME CODE CASE N-522)

1. Code Requirement for Which Relief is Requested

   System pressure tests per ASME Code, Section XI, Table IWC-2500-1, Category C-H.

2. Applicable Construction Code and Class for Harris Nuclear Plant (HNP)

   ASME Section III, 1974 through Winter 1976 Addendum
   ASME Section XI, 1983 through Summer 1983 Addendum

3. ASME Section XI Code Requirements

   Table IWC-2500-1, Category C-H, Item No. C7.30 and C7.40

4. Reference Code Case

   Code Case N-522, "Pressure Testing of Containment Penetration Piping, Section XI, Division 1."

5. Components for Which Exemption is Requested

   This request is for ISI Class 2 system pressure tests to be performed during each remaining ISI inspection interval for piping that penetrates the containment, when the piping and isolation valves that are part of the containment system are Class 2, but the balance of the piping system is outside the scope of Section XI. At HNP, these penetrations specifically include the following: Service Water (M-91, M-92); Sampling (M-88, M-33); Reactor Makeup Water (M-40); Demineralized Water (M-90); Leak Rate Testing (M-62, M-34, M-96); Containment Hydrogen Purge Make-up (M-61); Safety Injection (M-76A, M-76B, M-77A); Spent Fuel Pool Cooling (M-44, M-45); Miscellaneous Drains (M-74); Fire Protection (M-79, M-105); Instrument Air (M-80); Service Air (M-41); and Waste Gas (M-77C).

6. Basis for Requesting Relief

   The piping segment from a non-code class system that penetrates containment is designed and examined as Class 2 piping to protect the integrity of containment. The pressure test requirements in Table IWC-2500-1, Category C-H, verify the leak-tight integrity of Class 2 piping systems or segments utilizing a system pressure test on a once per period frequency and a hydrostatic test on a once per interval frequency.

ASME Section XI Code Case N-498 "Alternative Rules for 10 Year Hydrostatic Pressure Testing for Class 1 and 2 Systems, Section XI, Division 1," which was published in Revision 11 of Regulatory Guide 1.147, allows the use of a system pressure test in lieu of the hydrostatic test requirements of Table IWC-2500-1, Category C-H item C7.40. Furthermore, use of ASME Code Case N-498-1, which allows inclusion of Class 3 systems under the Alternate Rules For 10 Year System Hydrostatic Testing, was approved for HNP on September 6, 1996.

The 10 CFR 50, Appendix J pressure testing provides periodic verification of the leaktight integrity of the reactor containment and the systems and components that penetrate the containment. The Appendix J test frequency provides assurance of containment pressure boundary integrity by monitoring the deterioration of seals, valves, and piping. Appendix J Option A requires Type B and C tests to be performed during each refueling outage, but in no case at intervals greater than 2 years. The purposes of the periodic surveillances required by Appendix J are to assure that proper maintenance and repairs are made during the service life of the containment, and systems and components penetrating containment. EST-212, "Local Leak Rate Test Procedure" provides the testing requirements for testing containment penetrations in accordance with Technical Specification 3.6.1.2 at a pressure P_a equal to 41 psig. The use of procedure EST-201, "ASME System Pressure Tests" along with EST-212 ensures a visual examination to verify piping integrity while performing EST-212.

ASME Code Case N-522 was approved December 9, 1993 by the ASME Boiler and Pressure Vessel Code Committee and the Board of Nuclear Codes and Standards as an acceptable alternative to the requirements of the ASME Code, Section XI. Consistent with ASME Code Case N-522, this request is based on performing testing in accordance with 10 CFR 50, Appendix J, Option A in lieu of the interval Class 2 system pressure tests for piping that penetrates a containment vessel, when the piping and isolation valves that are part of the containment system are Class 2, but the balance of the piping system is outside the scope of Section XI. A review of the ASME pressure tests performed at HNP for the first two inspection periods has determined that no through wall leaks have been identified during these tests.

The burdens imposed by pressure testing of the above referenced Class 2 penetrations are as follows:

The performance of the pressure testing required by the ASME Code, Section XI, would require an additional VT-2 examination to be performed during the 10 CFR 50, Appendix J testing or during system operation at nominal pressure. The extra examination will increase dose by an estimated 0.1 person-rem and will require an estimated 10 additional person-weeks of outage resources during each inspection period (every 3 and 1/3 years).

7. Alternate Testing

In lieu of performing interval pressure testing, HNP will perform 10 CFR 50, Appendix J testing in accordance with ASME Code Case N-522. The penetrations identified in this relief request will be tested at P_a and in accordance with EST-212. Procedure EST-212 will be revised to include provisions of ASME Section XI, IWC-5210(b) which requires that when using air or gas as a testing medium, the test procedure shall include methods for locating and detecting through-wall leakages in components of the system being tested. If HNP chooses to adopt Option B of Appendix J, CP&L will test the applicable penetrations at a two year frequency or the applicable code requirements will be met.

8. Conclusion

Piping integrity will be demonstrated by testing the piping and penetrations in accordance with 10 CFR 50 Appendix J.

Additional pressure testing in accordance with ASME Code, Section XI will increase dose to plant personnel and unnecessarily expend outage resources without a commensurate increase in the level of quality or safety. Piping integrity will be demonstrated by the 10 CFR 50, Appendix J testing in lieu of the Section XI testing.

The Harris Nuclear Plant is currently in the fourth period of its first ten-year ISI interval. Remaining inspections will be completed during the next refueling outage, currently scheduled to begin in April 1997. NRC approval is requested by March 15, 1997 to support the planning required for a 10-year ISI outage.