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SUBJECT: Requests approval for plant to use alternative to ASME
 Boiler & Pressure Vessel Code requirements for performing
 certain pressure testing on containment penetration piping.

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SEP 9 1996

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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
REQUEST FOR APPROVAL TO USE CODE CASE N-522

Dear Sir or Madam:

In accordance with 10 CFR 50.55a(a)(3), Carolina Power & Light (CP&L) Company requests approval for the Harris Nuclear Plant (HNP) to use an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements for performing certain pressure testing on containment penetration piping. The requested alternative, ASME Code Case N-522, "Pressure Testing of Containment Penetration Piping, Section XI, Division 1," was approved by the ASME on December 9, 1993. This code case has not been incorporated into Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability ASME Section XI Division 1."

The bases for the request are provided in the Enclosure. HNP is currently in the third period of its first ten year ISI interval and is to complete remaining inspections in the next refueling outage, currently scheduled to begin in March 1997. NRC approval is requested by December 31, 1996 to support the planning required for the outage.

Questions regarding this matter may be referred to Mr. T. D. Walt at (919) 362-2711.

Sincerely,

9609170583 960909
PDR ADDCK 05000400
Q PDR

LSR/lsr

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- c: Mr. J. B. Brady, NRC Resident Inspector
- Mr. S. D. Ebnetter, NRC Regional Administrator
- Mr. N. B. Le, NRC Project Manager

AOH 7/1

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES

DEPARTMENT OF PHYSICS

PHYSICS 311
LECTURE 10

LECTURE 10: ELECTROSTATICS

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

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

3. Reference Code Case

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

4. 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 Harris Nuclear Plant 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 Makeup (M-61); Safety Injection (M-76A, M-76B, M-77A); Spent Fuel Pool Cooling and Cleanup (M-44, M-65, M-45); Miscellaneous Drains (M-74); Fire Protection (M-79, M-105); Instrument Air (M-80); Service Air (M-41); Waste Gas (M-77C); Penetration Pressurization (RHR Valve Chambers, Containment Spray Valve Chambers, Emergency Air Lock, Breach Type Personnel Air Lock, and Equipment Hatch).

5. Basis for Requesting Relief

The piping segment from a non-code class system that penetrates containment is designed and examined as Class 2 piping in order to protect the integrity of containment. The hydrostatic pressure test required in Table IWC-2500-1, Category C-H, provides periodic verification of the leak-tight integrity of Class 2 piping systems or segments at least once during every 10-year ISI interval.

The 10 CFR 50, Appendix J pressure testing provides periodic verification of the leak-tight integrity of the reactor containment, and systems and components that penetrate containment. The Appendix J test frequency provides assurance of containment pressure boundary integrity by monitoring the deterioration of seals, valves, and piping. Appendix J 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.

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 Harris Nuclear Plant 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 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).

6. Alternate Testing

In lieu of performing interval pressure testing, Harris Nuclear Plant will perform 10 CFR 50, Appendix J testing in accordance with ASME Code Case N-522.

7. Conclusion

The ASME Code, Section XI pressure testing does not provide an increase in the level of quality or safety because 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 third period of its first ten-year ISI interval and is to complete remaining inspections during the next refueling outage, currently scheduled to begin in March 1997. NRC approval is requested by December 31, 1996 to support the planning required for a 10-year ISI outage.

