



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM
RELIEF REQUEST NO. 13, REVISION 1, FROM CERTAIN HYDROSTATIC TESTS
FOR
ROCHESTER GAS AND ELECTRIC CORPORATION
R. E. GINNA NUCLEAR POWER PLANT
DOCKET NO. 50-244

1.0 INTRODUCTION

In a letter dated December 15, 1994, the Rochester Gas and Electric Corporation (RG&E), the licensee, submitted a request for relief from performing certain hydrostatic tests at R.E. Ginna Nuclear Power Plant during the Third 10-Year Inservice Inspection (ISI) Interval. In place of the hydrostatic tests required by the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), the licensee proposed the alternative to use Code Case N-522. Code Case N-522 has not been endorsed in Regulatory Guide 1.147. The NRC staff has evaluated the licensee's request to use the proposed alternative to the Code requirements.

2.0 BACKGROUND

In a letter of January 25, 1993, RG&E submitted a reformatted Third 10-Year ISI Program Plan with associated requests for relief. The program implemented the requirements of the 1986 Edition to Section XI of the ASME Code. Relief Request 13 proposed using Appendix J tests as an alternative to the code-required system hydrostatic tests for certain Class 2 piping systems that penetrate primary containment. In a letter to RG&E dated September 8, 1993, the NRC concluded that Relief Request 13 was unacceptable. The December 15, 1994 submittal from RG&E contained Revision 1 to Relief Request 13 with additional supporting information for the request.

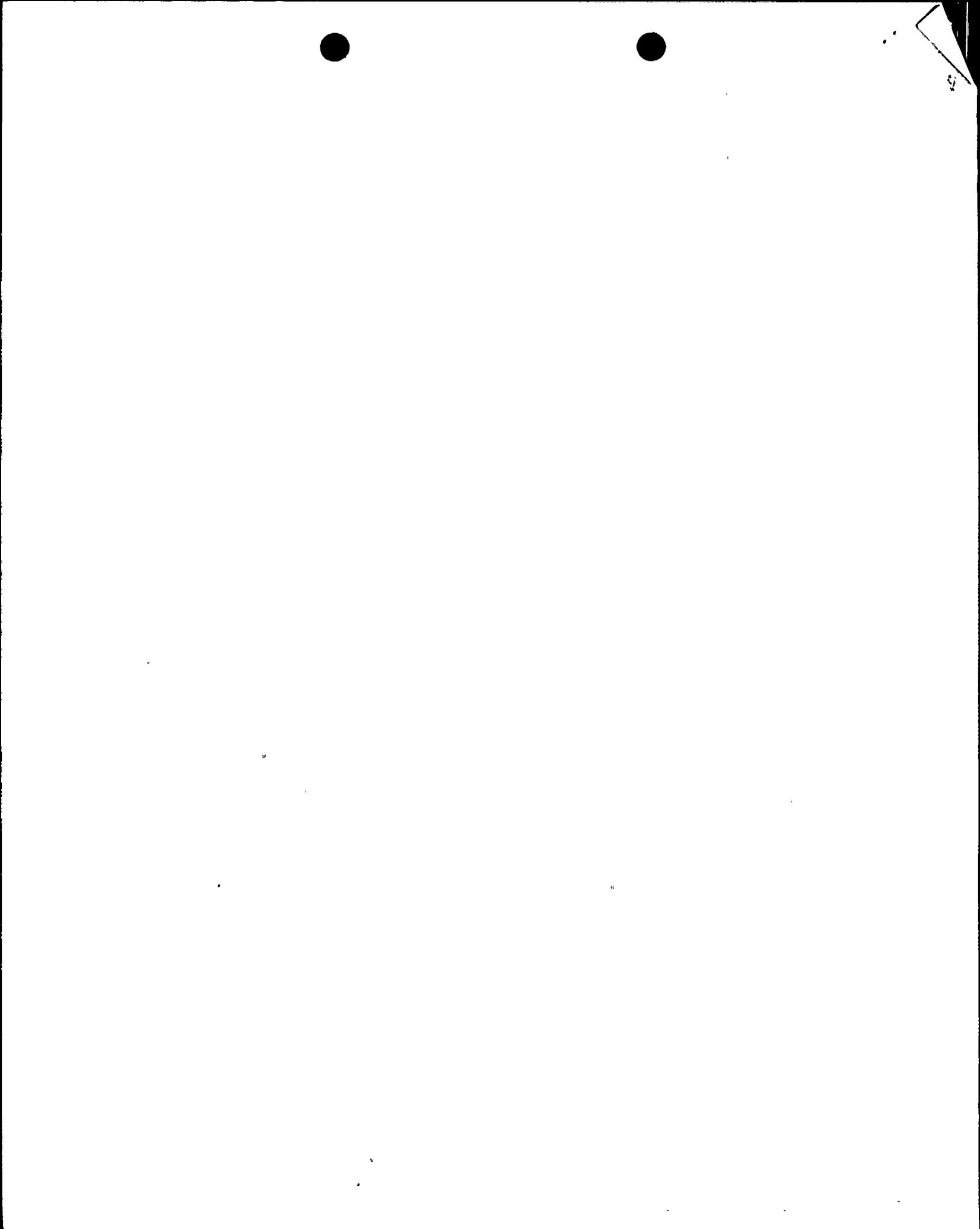
3.0 EVALUATION/CONCLUSION

3.1 Code Requirements

In accordance with IWA-1320(d), Table IWC-2500-1, Category C-H, of the 1986 Edition, periodic system pressure testing is required to be performed on Class 2 piping.

9507140091 950707
PDR ADOCK 05000244
PDR

Enclosure



3.2 Request for Relief

The licensee requested generic relief from performing the Code-required periodic system pressure tests on the Class 2 segments of piping systems that penetrate containment where the balance of the adjoining system is classified as non-Code class.

3.3 Basis for Relief

The safety function of the lines penetrating containment is to become part of the containment isolation system during periods when containment isolation is required. Therefore, the pressure testing requirements should be based on the containment system design, not the associated process system design requirements. These lines are tested in accordance with 10 CFR Part 50, Appendix J, "Reactor Containment Leakage Testing for Water Cooled Power Reactors," commensurate with the safety function the line performs and in accordance with technical specification surveillance requirements. Recognizing this situation, the ASME Committee has approved Code Case N-522, which allows use of the leakage testing requirements of 10 CFR Part 50, Appendix J, to satisfy the periodic pressure test requirements of ASME Code, Section XI, Subsection IWC, for these isolated portions of Class 2 piping which are classified only for the purpose of containment integrity.

3.4 Proposed Alternative Examination

As an alternative to Code requirements, the licensee proposed using 10 CFR Part 50, Appendix J tests to satisfy the periodic pressure test requirements for those Class 2 segments of piping systems that penetrate containment where the balance of the adjoining system is classified as non-Code class, as described in Code Case N-522.

3.5 Evaluation

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 Appendix J pressure testing provides periodic verification of the leak-tight integrity of the primary reactor containment, and systems and components that penetrate containment. The Appendix J tests frequency provides assurances that the containment pressure boundary is being maintained at an acceptable level while monitoring for deterioration of seals, valves, and piping. Appendix J requires that three Type A tests be performed at approximately equal intervals during the 10 year ISI interval, with the third test done while shutdown for the 10-year plant ISI. Appendix J also requires Type B and C tests be performed during each refueling outage, but in no case at intervals greater than 2 years.

In situations where the Appendix J test pressure is equal to or greater than the normal system pressure, the hydrostatic test essentially would be redundant. If an event occurred in containment with pressures higher than the pressures in a pipe with a through-wall flaw, the isolation valves located on both sides of the containment wall would prevent any release outside containment. Multiple through-wall flaws or leakage paths occurring simultaneously inside and outside of containment between the isolation valves in a low pressure pipe segment is unlikely. However, the Appendix J test provides surveillance for such leakage.

In situations where the Appendix J test pressure is less than the normal system test pressure, the hydrostatic test would be overly conservative. If a through-wall flaw occurred and the penetration was not isolated, leakage of the process fluid from the pipe would be released, thus preventing containment bypass. The fluid in the pipe system is not safety-related as evident by the non-Code classification assigned to the pipe segments on the non-penetration sides of the isolation valves. Therefore, containment material from an accidental release could not enter a through-wall flaw in an unisolated segment of pipe that penetrates containment as long as the pressure in the pipe exceeds the pressure in containment.

3.6 CONCLUSION

Based on the above evaluation and information submitted, the NRC staff concludes that compliance with the Code-required hydrostatic test of Class 2 piping that penetrates containment, where the balance of the piping system is non-Code class, would result in hardships or unusual difficulty without a compensating increase in the level of quality and safety. Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee's proposal (Relief Request 13, Revision 1) to use Code Case N-522 is authorized until such time as the Code Case N-522 is published in a future revision of Regulatory Guide (RG) 1.147. At that time, if the licensee intends to continue to implement Code Case N-522, the licensee is to follow all its provisions, with the limitations issued in RG 1.147.

Principal Contributor: Donald G. Naujock

Date: July 07, 1995