ATTACHMENT

SAFETY EVALUATION REPORT RELATED TO
REQUEST FOR RELIEF FROM INSERVICE PRESSURE TEST REQUIREMENTS
INDIANA AND MICHIGAN ELECTRIC COMPANY
DONALD C. COOK NUCLEAR POWER PLANT UNIT 1
DOCKET NO. 50-315

Introduction

Technical Specification 4.4.10 for the Donald C. Cook Power Plant Unit 1 states that inservice examination of ASME B&PV Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the Code and applicable addenda as required by 10 CFR 50.55a(g) except where specific written relief has been granted by the Commission. The Examination Program for Unit 1 is based upon the requirements of the 1974 Edition with the addenda through the Summer of 1975. Certain requirements of this Edition and Addenda of Section XI are impractical to perform on older plants because of the plants' design, component geometry, materials of construction or the need for extensive temporary modifications and the resultant substantial radiation exposure to plant personnel.

By letter dated July 15, 1985, the Indiana and Michigan Electric Company requested relief from the pressure test inspection requirements of the Code for sections of pipes determined to be impractical to perform these tests.

Evaluation of Request for Relief

1. Auxiliary Spray to Reactor Coolant System and Pressurizer, CVCS-Reactor Letdown and Charging System, Flow Diagram 1-5129 Piping Boundaries:

Valves QRV-51	CS-326
Valves QRV-61	CS-322
Valves QRV-62	

ISI Code Class-2 Requirements:

For a system design pressure of 2735 psig, Article IWC-5000 of the ASME Code, Section XI, requires that the piping be tested at a pressure of 3418 psig, and a temperature not less than 100°F.

Basis for Relief Request Request:

In order to perform the pressure test in this ISI Class 2 section of piping, valve QRV-51 has to be used as an isolation valve. The valve is between Class 1 and Class 2 sections of pipe. This 1,500 lb. class, air-operated, control valve is designed to withstand a test pressure of 3418 psig in the open position, i.e, with the stem withdrawn and pressurizing only the valve body. However, it cannot be used as an isolation valve for this test because it was designed for a differential pressure of 1200 psig in the closed position. At higher differential pressure, the valve must be maintained closed by additional, rigid mechanical means to prevent valve lifting and leakage.

The valve can be maintained closed by means of a "stem block", which is available at the site, to be tight against a differential pressure of 2800 psig. Installation of the "stem block" can be done without extensive rigging and with plant personnel exposed to relatively small amounts of radiation.

The valve cannot be kept closed during pressure testing at 3418 psig without extensive, temporary rigging. The modification would require: (1) removal of the air operator and installation of a "strong back" to keep the valve closed during the testing, (2) removal of the strong back after the testing, and (3) re-installation of the air operator on the valve and restoring the valve to operable condition before returning to service. The valve is located inside the re-generative heat exchanger room which is a very high radiation area and plant personnel would be subjected to radiation exposure of 5 to 7 man rems.

Licensee's Proposed Alternative Test

The licensee proposes as an alternative to pressurize the above sections of pipe to a pressure of 2800 psig with valve QRV-51 closed. The valve will be held closed with a "stem block" and the Class 1 side of the valve at ambient pressure.

Evaluation and Conclusion

The proposed test pressure is higher than the normal operating pressure of 2235 psig in the approximately 30 feet long section of piping for which code relief is requested. The proposed test pressure is 565 psig, or 25%, above the normal operating pressure, thus the test provides reasonable assurance of the integrity of the piping.

The above piping system cannot be tested to ASME Code requirements without modifying the system and/or exposing personnel to unnessary radiation hazards. The materials used in the construction of Class 2 systems in D.C. Cook Unit 1 were specified to have a ductile-to-brittle transition temperature far below 100°F.

This valve and the piping section discussed above were hydrostatically tested during the prestartup test sequences. They have not been tested since because there were no requirements for these tests during the first inspection interval. These tests have become a Code requirement for the updated second ten-year interval.

Based upon the above, the staff concludes that the code requirements are impractical and if imposed upon the licensee would result in hardship or difficulties without a compensating increase in the safety margins

of the D.C. Cook Unit 1. The alternative test proposed by the licensee will provide reasonable assurance of the integrity of the section of pipe and maintaining the margin of safety of the plant. We therefore conclude that relief from the code requirements can be granted as requested.

Dated:

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