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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF FROM ASME CODE REPAIR REQUIREMENTS

FOR ASME CODE CLASS 3 PIPING

GPU NUCLEAR CORPORATION

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1. BACKGROUND

Temporary Non-Code Repairs

The Code of Federal Regulations at 10 CFR 50.55a(g) requires nuclear power facility piping and components to meet the applicable requirements of Section XI of the ASME Boiler and Pressure Vessel Code (hereafter called the Code). Section XI of the Code specifies Code-acceptable repair methods for flaws that exceed Code acceptance limits in piping that is in service. A Code repair is required to restore the structural integrity of flawed Code piping, independent of the operational mode of the plant when the flaw is detected. Those repairs not in compliance with Section XI of the Code are non-Code repairs. However, the required Code repair may be impractical for a flaw detected during plant operation unless the facility is shut down. Under 10 CFR 50.55a(g)(6)(i), the Commission will evaluate determinations of impracticability and may grant relief and may impose alternative requirements.

Licensee's Relief Request

In its letters of January 15, 1992, and July 2, 1992, GPU Nuclear Corporation (the licensee) requested relief from Code repair requirements of certain Code Class 3 piping at the Oyster Creek Nuclear Generating Station. While excavating and inspecting a underground pipe in the Condensate Transfer system, the licensee found a 3-foot long section that had pitting corrosion. The pipe had been externally coated to minimize corrosion. Part of the coating had failed causing the pipe to corrode from exposure to underground moisture. The licensee decided to clean the corrosion from the 10-inch aluminum pipe. During cleaning, a pit began to leak. To determine the extent of the pitting, the licensee performed ultrasonic testing on the pipe next to the pitted area. The thickness readings were .400 inches at the elbow and .380 inches on the pipe with a nominal wall thickness of .365 inch. Adjacent inspected lengths did not have similar failures.

The licensee stopped the leak by a temporary non-Code repair. The repair consisted of clamping a gasket over the leak with stainless steel clamps. The

stainless steel is isolated from the aluminum by gasketing so accelerated corrosion from galvanic effects is not a concern. Two more clamps installed next to the corroded area further provide strength to the piping. Calculations showed that the strength of the clamps exceed the strength of the pre-existing pipe.

The safety significance of this pitting is considered minimal. The licensee found that the damage is localized and not indicative of the overall coating condition. The probability of similar damage in other locations on this system is small.

The pipe is connected to the condensate storage tank whose level is monitored hourly by licensed operators. Moreover, the pipe is buried in a highly traveled area and any large leakage would saturate the ground there. Significant leakage would be detected in a short time and corrective actions taken. The water contains no hazardous products. Calculations document that a release of over 200,000 gallons would have no offsite dose significance.

2.0 EVALUATION OF RELIEF REQUEST

The staff finds that Code repair requirements in the case are impractical. Repairing the pipe in conformance with Code requirements would require a plant shutdown.

The licensee's submittal shows that the temporary repair is acceptable. The affected system is Class 3 moderate energy piping. The NRC staff recognizes that circumstances may justify taking temporary corrective measures for such systems that cannot be isolated without a plant being shut down. The leakage was stopped and so the system is fully functional. The cause was determined to be pitting corrosion due to localized damage to the outside coating. The pitting corrosion was shown to be limited and to have no significant safety significance. An evaluation of system interactions showed that any further leakage would be detected in enough time to apply further corrective measures. The leakage will be monitored by hourly observing the level in the condensate storage tank.

Accordingly, the staff concludes that granting relief where Code requirements are impractical and imposing alternative requirements are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest, given due consideration to the burden upon the licensee and facility that could result if the Code requirements were imposed on the facility. Under 10 CFR 50.55a(g)(6)(i) relief is granted until the next scheduled outage exceeding 30 days, but no later than the next scheduled refueling outage. The flawed pipe must then be repaired or replaced in accordance with the Code.

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Date: August 12, 1992