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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Response to Request for Additional Information

By letter dated January 15, 1992, GPU Nuclear requested relief from the requirements of ASME XI for a class 3 piping repair. In response to the GPUN request, the USNRC requested additional information to assist in their relief evaluation. This letter responds to that request for additional information.

Attachment I to this letter contains the specific information requested. If any further additional assistance is required, please call Mr. John Rogers, of my staff, at 609.971.4893.

Very truly yours,

John J. Barton
Vice President and Director
Oyster Creek

JJB/JJR
Attachment

cc: Administrator, Region I
Senior NRC Resident Inspector
Oyster Creek NRC Project Manager

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ATTACHMENT I

1. **Flaw Description and Size.**

On November 25, 1991, maintenance workers were in the process of performing final cleaning on a section of underground piping (an elbow) in the Condensate Transfer System. The piping is 10 inches in diameter and is made of aluminum. The pipe had been externally coated to minimize corrosion. A portion of the external coating had failed, and the resultant corrosion products were being cleaned prior to restoring the coating.

The section of pipe in question was approximately 3 feet in length and exhibited scattered pits approximately .375 inches in diameter and between .160 and .325 deep. As one of the pits was being cleaned, it started to "weep". Pipe wall adjacent to this location was ultrasonically tested to determine wall thickness. The thickness readings were .400 inches at the elbow and .380 inches on the pipe. The pitting was localized to the 90 degree butt welded elbow area, with most of the pits found at the weld seams.

Adjacent lengths of piping were inspected for similar failures. No other coating failures were located.

2. **Pipe/system Details.**

The system operating pressure is approximately 20 psig and the temperature is approximately 100 degrees. The piping is aluminum alloy 6061-T6 under ASTM B241, and the elbow is aluminum alloy 6061-T6 under ASTM B361. The piping is 10 inch schedule 40 with a nominal wall thickness of .365 inches. The elbow is slightly thicker due to its manufacturing process.

The piping had been externally coated with one coat of Polyken primer (a rubber and synthetic resin compound) in 1980. The primer coated pipe was then wrapped with Polyken dielectric tape, .015 inches thick, with a 50% overlap.

3. **Root Cause Determination.**

The root cause of the pitting corrosion was determined to be localized damage to the Polyken coating/taping, resulting in the substrate being exposed to underground moisture.

4. **Safety Significance.**

The safety significance of this event is considered minimal. The condensate transfer system is a low pressure, low temperature system. The failure mode was induced by localized damage and is not indicative of overall coating condition. The probability of similar damage in other locations on this system is small.

The pipe is directly connected to the Condensate Storage Tank (CST), whose level is monitored hourly by licensed operators. Any leakage of a significant magnitude would be detected in a relatively short period of time and corrective actions taken. If the CST level were to decrease below 20 feet and the rate of decrease were greater than one foot per hour, the reactor would be manually scrammed. There is no impact on reactor safe shutdown capability.

The water in the tank contains no hazardous or toxic products. Existing calculations document that a release of over 200,000 gallons would have no off-site dose significance.

5. **Implications of the Root Cause.**

The root cause of this weepage has no significant implications. The affected piping system is part of the Oyster Creek underground piping inspection program which systematically excavates, inspects, and evaluates the condition of underground piping.

This combination of pipe and coating had also been selected for the underground portion of the Demineralized Water System.

6. **Monitoring the Condition.**

Although monitoring of piping affected by erosion type wall failures is highly advantageous (as noted in Generic Letter 90-05), the possible benefits derived from routine inspection for localized pitting corrosion are minimal.

The portion of piping addressed by this relief request is underground and presently covered with a stainless steel clamp. Therefore, it is not accessible for monitoring. Removing the clamp to allow visual inspection is not recommended.

Monitoring of leakage will be performed on an hourly basis by observing the level in the CST.

7. **Describe the Repair.**

A 15 inch long, 10 inch diameter stainless steel Ford Clamp was installed on the location of the weepage. Two additional clamps were installed on the adjacent locations of pitting corrosion. All three clamps were designed to 200 psig (ten times the system operating pressure) and 150 degrees temperature (50 degrees above system operating temperature). Additionally, rubber gasketing material was placed between the aluminum pipe and the stainless steel clamps to minimize galvanic corrosion.

This design far exceeds the original system design strengths and is more than adequate for acceptable service until the piping can be replaced during the next refueling outage.

8. **Flaw Monitoring.**

As discussed in the response to question 6, the corrosion is not accessible. However, this pipe is buried in a highly traveled location and any large leakage would saturate the ground in the area. Additionally, any leakage would be reflected in the CST level which is monitored once per hour by licensed operators. No additional inspections are required.