



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20565-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF FROM ASME CODE REPAIR REQUIREMENTS

FOR ASME CODE CLASS 3 PIPING

NORTH ATLANTIC ENERGY SERVICE CORPORATION

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

1.0 INTRODUCTION

By letter dated November 12, 1993, North Atlantic Energy Service Corporation, (North Atlantic), requested relief from the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (hereafter called the Code), Section XI requirements regarding repair to a leak in a Class 3, moderate energy pipe at the Seabrook Station, Unit No. 1. The leak was detected in a 3-inch nominal pipe size pressure sensing line weld downstream of the two Train A ocean service water (SW) pumps. The ocean SW system conveys ambient temperature water at 150 psig design. The pipe is cement lined-carbon steel.

The leak is in a girth weld between two SA-105 carbon steel forgings: a weld neck flange and a weldolet attached to the SW header. The leak is a through-wall pit, believed to be initiated on the pipe I.D. at the location of a break in the cement lining.

2.0 DISCUSSION AND EVALUATION

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 Code. This section 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.

In some circumstances the required Code repair may be impractical unless the facility is shut down. In such cases, the Commission may evaluate determinations of impracticality and may grant relief and impose alternative requirements pursuant to 10 CFR 50.55a(g)(6)(i). Generic Letter 90-05, Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2,

and 3 Piping (dated June 15, 1990), provides guidance to the staff for evaluating relief requests submitted by licensees for temporary non-Code repairs to Code class 3 piping.

On November 7, 1991, the Commission issued Generic Letter 91-18, Information to Licensees regarding two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability. This generic letter and the attached NRC Inspection Manual Part 9900 provided detailed discussions of specific operability determinations, one of which was operational leakage. In this regard, Section 6.15 of Part 9900 states the following:

Upon discovery of leakage from a Class 1, 2, or 3 component pressure wall (i.e., pipe wall, valve body, pump casing, etc.) the licensee should declare the component inoperable. The only exception is Class 3 moderate energy piping as discussed in Generic Letter 90-05. For Class 3 moderate energy piping, the licensee may treat the system containing the through-wall flaw(s), evaluated and found to meet the acceptance criteria in Generic Letter 90-05, as operable until relief is obtained from the NRC.

North Atlantic asserts that the leaking pressure sensing line cannot be isolated; therefore, to perform a Code repair, the Train A service water pumps and the cooling tower pump must be taken out of service, and Train A piping must be drained partially. (This assertion has been verified by the NRC Resident Inspector Office at Seabrook.) These actions would render that entire service water train inoperable. The Seabrook Station Technical Specifications do not permit operation with one service water train inoperable. Therefore, since a station shutdown would be required to effect a Code repair, North Atlantic asserts that a Code repair is impractical and has requested approval for use of a temporary non-Code repair until the next outage exceeding 30 days or the next refueling outage.

North Atlantic has evaluated the flaw in accordance with the guidance of Generic Letter 90-05 and has found that the structural integrity is adequate for continued service. The issues of flooding, water spraying on other equipment, and loss of flow were analyzed and found to be insignificant to the operation of the SW system or safe shut-down. A rubber patch and hose clamp was applied over the leak for housekeeping purposes. An augmented inspection using ultrasonic testing was performed. No other degraded areas were discovered.

North Atlantic has proposed daily visual monitoring of the affected location. Periodic nondestructive examination reinspection would occur at least once every 3 months.

3.0 CONCLUSION

North Atlantic has committed to the guidance provided in Generic Letter 90-05. North Atlantic has submitted a structural integrity analysis and a safety analysis for the subject flaw that fully satisfy the conditions of Generic

Letter 90-05. The staff has reviewed North Atlantic's request for relief and finds that North Atlantic has followed the analytical methods provided in Generic Letter 90-05. Furthermore, the staff finds that performing a Code repair on the leaking service water piping while the station is operating is impractical.

The staff concludes that the granting of relief where Code requirements are impractical and imposing alternative requirements is authorized by law and will not endanger life or property or the common defense and security and is 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. Pursuant to 10 CFR 50.55a(g)(6)(i) and consistent with the guidance in Generic Letter 90-05, relief is granted until the next scheduled outage exceeding 30 days, but no later than the next refueling outage. The temporary non-Code repair must then be replaced with a Code repair.

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