

NRR-DRMAPEm Resource

From: Pulvirenti, April
Sent: Wednesday, July 24, 2019 4:19 PM
To: Zamber, Maria
Cc: Singal, Balwant; Pascarelli, Robert
Subject: Waterford 3 -- Documentation of Verbal Authorization to ASME Code Case N-666-1 for Weld Overlay repair at Waterford 3 (EPID 2019-LLR-0066)

Maria,

By telephone on July 24, 2019, the U.S. Nuclear Regulatory Commission (NRC) staff provided a verbal authorization to Entergy Operations, Inc. (Entergy, the licensee) for the requested alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), at Waterford Steam Electric Station, Unit 3.

By letter dated July 18, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19199A708), as supplemented by letter dated July 22, 2019 (ADAMS Accession No. ML19203A365), the licensee requested relief from certain requirements of the ASME Code Case N-666-1, "Weld Overlay of Class 1, 2, and 3 Socket Welded Connections, Section XI, Division 1." Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee submitted Alternative WF3-RR-19-1 for the alternate weld overlay repair of the degraded dissimilar metal welds in the cold leg drain lines of the reactor coolant system, on the basis that the alternate repair provides an acceptable level of quality and safety. The NRC staff's evaluation and verbal authorization is repeated in this email.

The following NRC and licensee personnel participated in the conference call:

NRC:

April Pulvirenti, Project Manager
Angela Buford, Acting Chief, Piping and Head Penetrations Branch
Balwant Singal, Acting Chief, Plant Licensing Branch 4
John Tsao, Senior Materials Engineer, Piping and Head Penetrations Branch

Waterford 3:

Remy DeVoe, Engineer III
Grace Settoon, Supervisor, Engineering-Design
William Steelman, Manager, Design Engineering
Paul Wood, Manager, Regulatory Assurance
Maria Zamber, Senior Licensing Specialist, Regulatory Assurance

Entergy Corporate:

Ron Gaston, Director, Nuclear Licensing
John Schrage, Senior Staff Engineer, Licensing

Please contact me if you have any questions.

April Pulvirenti
Project Manager – Waterford 3
US Nuclear Regulatory Commission
Division of Operating Reactor Licensing
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VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
10 CFR 50.55a REQUEST NUMBER WF3-RR-19-2
ALTERNATE REPAIR OF DEGRADED DRAIN LINE OF
CHEMICAL AND VOLUME CONTROL SYSTEM
WATERFORD STEAM ELECTRIC STATION, UNIT 3
ENERGY OPERATIONS, INC.
DOCKET NUMBER 50-382
JULY 24, 2019

Technical Evaluation read by Angela Buford, Acting Chief of the Piping and Head Penetrations Branch, Office of Nuclear Reactor Regulation

By letter dated July 18, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19199A708) with supplement dated July 22, 2019 (ADAMS Accession No. ML19203A365), Entergy Operations, Inc. (the licensee) requested relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, IWA-4000, at Waterford Steam Electric Station Unit 3.

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), Entergy submitted 10 CFR 50.55a Request Number WF3-RR-19-2 proposing an alternate repair of the degraded drain line, 2CH1-30, of the Chemical and Volume Control System (CVCS) on the basis that complying with ASME Code, Section XI, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

On July 2, 2019, the licensee identified a leaking flaw in the 1-inch nominal pipe size drain line 2CH1-30. The licensee stated that the through wall flaw was caused by vibration. The licensee proposed to install a weld overlay at the leaking location of the drain line based on ASME Code Case N-666-1, "Weld Overlay of Class 1, 2, and 3 Socket Welded Connections Section XI, Division 1," with four exceptions.

The NRC staff determines that (1) the thickness of the weld overlay has sufficient margin with respect to the minimum required thickness of the drain pipe, (2) the plant leakage detection systems are capable to monitor the potential leakage after the weld overlay installation, (3) the plant Technical Specification 3.4.5.2 limits unidentified leakage to 1 gallon per minute (gpm) which is applicable to the subject CVCS drain line. In addition, the licensee has implemented an operations decision point which limits the reactor coolant system unidentified leakage to be less than 0.6 gpm or requires a plant shutdown, (4) the proposed four exceptions to the code case are acceptable, and (5) the licensee has demonstrated that the risk impact of the existing flaw is not significant because the change to the core damage frequency is small.

The NRC staff further determines that performing an ASME Code repair of the drain line is a hardship because it will require the plant to shut down, which could lead to transients and potential risk without a compensating increase in the level of quality and safety.

The NRC finds that the licensee has demonstrated that the proposed alternative provides reasonable assurance that structural integrity of the overlaid drain line and its intended safety function will be maintained until the next scheduled refueling outage which is scheduled for Fall 2020.

Authorization read by Balwant Singal, Acting Chief of the Plant Licensing Branch 4, NRR

As Acting Chief of the Plant Licensing Branch 4, Office of Nuclear Reactor Regulation, I concur with the conclusions of the Piping and Head Penetrations Branch.

The NRC staff determines that the proposed alternative provides reasonable assurance of structural integrity of the subject drain piping. The NRC staff finds that complying with the requirements of the ASME Code, Section XI, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, on July 24, 2019, the NRC authorizes the use of 10 CFR 50.55a Request Number WF3-RR-19-2 at Waterford Steam Electric Station Unit 3 until the end of refueling outage 23, which is scheduled for Fall 2020.

All other requirements in ASME Code, Section XI, for which relief was not specifically requested and approved in this proposed alternative remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

This verbal authorization does not preclude the NRC staff from asking additional clarification questions regarding the proposed alternative while preparing subsequent written safety evaluation.

Thank you,

Dr. April Pulvirenti
Project Manager, Waterford
NRR/DORL/LPL4
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