

## **NRR-DMPSPEm Resource**

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**From:** Pulvirenti, April  
**Sent:** Wednesday, February 6, 2019 4:15 PM  
**To:** Zamber, Maria  
**Cc:** Pascarelli, Robert; Cumblidge, Stephen; Collins, Jay; Davis, Robert; Tsao, John; Young, Austin; Drake, James; Anchondo, Isaac; Ramirez Munoz, Frances; Speer, Chris  
**Subject:** Verbal Authorization for Relief Request WF3-RR-19-1, Proposed Alternative for ASME Code Section XI, IWA-400 for Waterford Steam Electric Station, Unit 3 (EPID L-219-LLR-0003)

Maria,

By telephone on February 6, 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 January 28, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No.ML19028A436), as supplement by letter dated February 4, 2019 (ADAMS Accession No. ML19035A658), the licensee requested relief from certain requirements of the ASME Code, Section XI, IWA-4000. Pursuant to Title 10 of the Code of Federal Regulations (CFR) 50.55a(z)(1), the licensee submitted Inservice Inspection Program Alternative WF3-RR-19-1 for the alternate 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  
Steven Cumblidge, Acting Chief, Piping and Head Penetrations Branch  
Robert Pascarelli, Chief, Plant Licensing Branch 4  
John Tsao, Senior Materials Engineer, Piping and Head Penetrations Branch  
Austin Young, Materials Engineer, Vessels and Internals Branch

Waterford 3:

Maria Zamber, Senior Licensing Specialist, Regulatory Assurance  
Alva Stuard, Supervisor, Engineering  
Jacob Shackelford, Engineer III, Engineering Design

Entergy Corporate Office:

Mandy Halter, Director, Nuclear Licensing  
John Schrage, Engineer, Senior Staff, Licensing  
Joseph Weicks, Senior Staff Technical Specialist, Engineering, Central Programs  
Michael Briley, Non-Destructive Examination Level III Specialist IV, Fleet Production  
Greg Norris, Senior Staff Technical Specialist, Licensing

Please contact me if you have any questions.

April

April Pulvirenti  
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Division of Operating Reactor Licensing  
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VERBAL AUTHORIZATION BY THE OFFICE NUCLEAR REGULATION  
INSERVICE INSPECTION PROGRAM ALTERNATIVE WF3-RR-19-1  
ALTERNATE REPAIR OF DEGRADED WELDS IN COLD LEG DRAIN LINES  
WATERFORD STEAM ELECTRIC STATION UNIT NO.  
ENTERGY OPERATIONS INC  
DOCKET NO. 50-382  
FEBRUARY 6, 2019

**Technical Evaluation read by Stephen Cumblidge, Acting Chief of the Piping and Head Penetration Branch, Office of Nuclear Reactor Regulation**

By letter dated January 28, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No.ML19028A436), with supplement dated February 4, 2019 (ADAMS Accession No. ML19035A658) 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 (CFR) 50.55a(z)(1), the licensee submitted Inservice Inspection Program Alternative WF3-RR-19-1 for the alternate 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.

During the 2019 refueling outage (RF 22), the licensee detected unacceptable axial indications located within weld 07-009 in a drain line of cold leg Loop 1A and weld 11-007 in a drain line of cold leg Loop 2A.

The licensee proposed to install a full structural weld overlay on the subject welds using ASME Code Case N-740-2, "Dissimilar Metal Weld Overlay for Repair or Mitigation of Class 1, 2, and 3 Items," Code Case N-653-1, "Qualification Requirements for Full Structural Overlay Wrought Austenitic Piping Welds Section XI, Division 1," and Code Case N-638-6, "Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW [gas tungsten arc welding] Temper Bead Technique."

The NRC staff has approved Code Cases N-638-6 and N-653-1 but not N-740-2. To evaluate the proposed alternative, the NRC staff used NRC-approved ASME Code Case N-504-4 "Alternative Rules for Repair of Classes 1, 2 and 3 Austenitic Stainless Steel Piping," ASME Code, Section XI; Section XI Appendix Q; and Code Case N-770-2, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR

Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities Section XI, Division 1,” as basis for its review.

The NRC staff finds that the proposed full structural weld overlay is designed, installed, and inspected consistent with Code Cases N-504-4 and N-770-2; ASME Code, Section XI; and Section XI Appendix Q. The NRC staff also finds that a full structural weld overlay will provide an effective mitigation against the cracking in the subject welds to cause leakage or pipe rupture for the design life of the repair. Therefore, the NRC finds that the proposed alternative will provide reasonable assurance that the structural integrity of the subject overlaid welds is acceptable for the design life of the repair.

**Authorization read by Robert Pascarelli, Chief of the Plant Licensing Branch IV, Office of Nuclear Reactor Regulation**

As Chief of the Plant Licensing Branch IV in the Office of Nuclear Reactor Regulation, I concur with the conclusions of the Piping and Head Penetration Branch.

As set forth above, the NRC staff determines that the proposed alternative provides acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, as of February 6, 2019, the NRC authorizes the use of Inservice Inspection Program Alternative WF3-RR-19-1 as revised in the licensee’s letter dated February 4, 2019, at Waterford Steam Electric Station, Unit 3, for the fourth inservice inspection interval which ends on November 30, 2027.

The full structural weld overlay for the subject drain nozzles, installed in accordance with the provisions of this alternative, will remain in place for the design life of the repair.

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 the subsequent written safety evaluation.

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