

## **NRR-DMPSPeM Resource**

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**From:** Williams, Shawn  
**Sent:** Monday, September 17, 2018 8:09 AM  
**To:** MOORE, MICHAEL S; DALICK, SARA BETH  
**Subject:** September 15, 2018, Verbal Relief Request Authorization Script for Relief Request RR-4-18 - Leak in Service Water Discharge line from B Train Emergency Diesel Generator  
**Attachments:** Final VERBAL AUTH VC SUMMER.docx

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301-415-1009

**Hearing Identifier:** NRR\_DMPS  
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**From:** Williams, Shawn

**Created By:** Shawn.Williams@nrc.gov

**Recipients:**  
"MOORE, MICHAEL S" <MICHAEL.S.MOORE@scana.com>  
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Tracking Status: None

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VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELIEF REQUEST RR-4-18  
TEMPORARY ACCEPTANCE OF DEGRADATION AND  
USE OF A TEMPORARY NON-CODE REPAIR IN SERVICE WATER PIPING  
VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1  
DOCKET NO. 50-395  
SEPTEMBER 15, 2018

**Technical Evaluation read by Steve Ruffin, Chief of Piping and Head Penetrations  
Branch, Division of Materials and License Renewal, NRR**

By letter dated September 14, 2018, supplemented by e-mail dated September 15, 2018, South Carolina Electric and Gas Company (the licensee) requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, IWA-4000, at Virgil C. Summer Nuclear Station Unit 1.

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee submitted Relief Request RR-4-18 to use Generic Letter 90-05, with certain exceptions, to disposition a degraded area with pin hole leaks in an 8-inch weld neck flange ASME Code Class 3 service water system piping in lieu of performing an ASME Code repair/replacement.

On September 13, 2018, the licensee discovered a small pin-hole leak on the weld neck flange downstream of valve XVB03121B-SW on a service water discharge line from the B-Train Emergency Diesel Generator. At the time, the licensee reported the leak rate was approximately 2000 ml/minute.

The NRC staff reviewed the proposed alternative and finds it acceptable based on the following findings:

1. The NRC staff finds that the licensee calculated an allowable leak rate of 11.5 gallons/minute based on a 0.375-inch diameter postulated hole at 20 psig. The allowable leak rate is sufficiently low, so as to not challenge the structural integrity of the piping, affect the required safety function of the service water piping, or create issues associated with flooding or water spray. The NRC staff notes that the current leak rate has sufficient margin with respect to the allowable leak rate.
2. The NRC staff finds that the licensee calculated allowable axial length of 9.1 inches and allowable circumferential length of 13.45 inches based on a through wall flaw acceptable because the licensee followed the linear-elastic fracture mechanics method of the ASME Code, Section XI, Appendix C-7000. The NRC staff notes that the licensee's limiting flaw is a hole of 0.375-inch diameter based on leak rate which has sufficient safety margin as compared to the allowable flaw size.

3. The licensee will visually monitor the degraded component every shift and will quantify the leakage at least once every 24 hours until the leak is repaired or removed from service. In addition, the licensee has an administrative limit (i.e., leak rate increase greater than 1000 ml/min in a 24 hour period) beyond which the licensee will perform further evaluation to determine corrective actions.
4. The licensee will minimize the leakage by applying a compression tape or a clamp with rubber gasket material to initially seal the leaks. A fiber wrap coated with a two-part resin will then be installed. The licensee will not remove the temporary non-code repair so as to minimize potential for additional damage to the degraded area.
5. The duration of the proposed alternative is no later than the completion of Fall 2018 refueling outage or before exceeding the temporary acceptance criteria of this relief request. The probability of a catastrophic failure would be small during this short period of time because of the licensee's limiting leak rate and periodic monitoring.

The NRC staff finds that there is sufficient margin in terms of flaw size and leak rate with respect to the licensees calculated acceptable limits, until the next refueling outage (RF24), currently scheduled to start on October 6, 2018. The NRC staff finds that the licensee has demonstrated that Relief Request RR-4-18 will provide reasonable assurance that the structural integrity of the subject service water piping and its intended safety function will be maintained.

**Authorization read by Michael Markley, Chief of Plant Licensing Branch II-1, Division of Operating Reactor Licensing, NRR**

As chief of the Plant Licensing Branch II-1, Office of Nuclear Reactor Regulation, I concur with the conclusions of the Piping and Head Penetrations Branch.

The NRC staff concludes that the proposed alternative provides a reasonable assurance of the structural integrity of the subject service water piping. The NRC staff finds that complying with the ASME Code, Section XI repair/replacement requirements 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 of the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, as of September 15, 2018, the NRC authorizes the use of Relief Request RR-4-18 at Virgil C. Summer Nuclear Station Unit 1, until the end of the upcoming Fall 2018 refueling outage, currently scheduled for October 6, 2018, or exceeding the temporary acceptance criteria of 11.5 gallons per minute and the requirements of proposed alternative, whichever occurs first.

All other requirements in ASME Code, Section XI, for which relief was not specifically requested and approved in this relief request 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 question(s) regarding the proposed alternative while preparing the subsequent written safety evaluation.