From: Miller, Ed
Sent: Monday, December 2, 2019 7:47 AM
To: gary.d.miller@dominionenergy.com
Subject: Surry Nuclear Station, Unit 2 - Verbal Authorization of Relief Request (EPID L-2019-LLR-0108)
Attachments: Surry verbal authorization.docx

By telephone conversation on November 27, 2019, the U.S. Nuclear Regulatory Commission (NRC) staff provided a verbal authorization to Virginia Electric and Power Company (Dominion, the licensee) for the proposed alternative to the requirements of the 2004 Edition of the American Society of Mechanical Engineer's Boiler and Pressure Vessel Code (ASME Code), Section XI, Appendix IX, "Mechanical Clamping Devices for Class 2 and 3 Piping Pressure Boundary," regarding the temporary repair of a degraded weld at the elbow of a 1-inch pipe to the Surry, Unit 2, auxiliary feedwater pump steam supply. The licensee submitted the proposed alternative (Agencywide Documents Access and Management System Accession No. ML19331A916) for NRC review and approval, proposing to implement a temporary repair of the degraded weld until the unit's next refueling outage in Spring 2020. The NRC staff's evaluation and verbal authorization is provided in the attachment to this e-mail.

The NRC staff will follow this action by issuance of a written Safety Evaluation. The NRC staff anticipates completion of this follow-up activity by April 27, 2020, and expects this activity to take approximately 100 hours.

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

<u>NRC</u>
Michael T. Markley, Chief, Plant Licensing Branch II-1
Matthew Mitchell, Chief, Piping and Head Penetrations Branch (NPHP)
John Tsao, Senior Materials Engineer (NPHP)
David Nold, Safety and Plant System Engineer (SCPB)
Nageswara Karipineni, Safety and Plant System Engineer (SCPB)
Vaughn Thomas, Project Manager (LPL II-1)
Ed Miller, Project Manager (LPL II-1)

<u>Dominion</u>
Ed Turko – Supv. Nuclear Engineering – ISI Material NDE-SPS
Bret Rickert – Supv. Nuclear Engineering – ISI Material NDE-SPS
Barry Garber – Station Licensing Manager – SPS
Stephen Newman – Licensing Engineer – SPS
Brian Derreberry – Supv. Nuclear Engineering Mechanics – Corporate
Craig Sly – Manager – Nuclear Regulatory Affairs – Corporate
Gary Miller – Consulting Engineer - Nuclear Regulatory Affairs – Corporate

Please contact me if you have any questions.

G. Edward Miller, Project Manager
U.S. Nuclear Regulatory Commission
Division of Operating Reactor Licensing
Plant Licensing Branch II-1

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VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
ALTERNATIVE REQUEST S2-I5-ISI-05
ALTERNATE REPAIR OF AUXILIARY FEEDWATER PUMP STEAM SUPPLY PIPING
SURRY POWER STATION UNIT 2
VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
DOCKET NUMBER 50-281
NOVEMBER 27, 2019

Technical Evaluation read by Matthew Mitchell, Chief of the Piping and Head Penetration Branch, Office of Nuclear Reactor Regulation

On November 22, 2019, while at 100 percent power, Virginia Electric and Power Company (the licensee) detected a leak from a socket weld at an elbow in a 1-inch bypass line in the turbine-driven auxiliary feedwater pump steam supply piping at Surry, Unit 2. The licensee reported that the measured leak rate was six drops per minute. In accordance with the Surry, Unit 2 Updated Final Safety Analysis Report, the licensee considered the leaking line as part of the unit's containment boundary and the leak is unisolable.

By letter dated November 27, 2019, the licensee requested an alternative to the requirements of the 2004 Edition of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Appendix IX, "Mechanical Clamping Devices for Class 2 and 3 Piping Pressure Boundary," regarding the temporary repair of the degraded weld until the Spring 2020 refueling outage by the installation of a mechanical clamp. The licensee requested an alternative to not meet the requirement of Appendix IX, Subparagraphs IX-1000(c)(2) which prohibits the use of a mechanical clamp on the containment boundary and IX-6000(a) which requires periodic volumetric examination after the clamp is installed.

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee submitted Alternative Request S2-I5-ISI-05 on the basis that compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff reviewed the licensee's proposed alternative and finds that: (1) the licensee has adequately evaluated the condition of the piping being repaired; (2) the licensee's proposed temporary repair is adequate to mitigate leakage with an acceptance criterion of no leakage; therefore, the containment boundary is maintained; (3) the licensee has demonstrated by analyses that the mechanical clamp will ensure structural integrity of the degraded pipe, even if the pipe weld failed completely; (4) the licensee has demonstrated that the design of the mechanical clamp would not have an adverse effect on the remainder of the piping system; (5) the licensee will visually monitor the repaired location daily which exceeds the weekly monitoring requirement of Subparagraph IX-6000(c); (6) the intended use and operation of the Auxiliary Feedwater (AFW) pumps during normal, accident, and station blackout sequences will not be changed, and (8) cycling the plant for an unplanned shutdown to perform a permanent ASME Code repair would result in a hardship because cycling of the plant may cause unnecessary loading on components.

Based on its review, the NRC finds that the licensee's proposed alternative, as a temporary repair, maintains the structural integrity of the subject piping, will not

adversely impact the containment boundary, provides for effective leakage mitigation, and is supported by the existence of a hardship if the licensee were required to shut down the plant to affect a permanent ASME Code repair. Therefore, the use of the clamp as described in Alternative Request S2-I5-ISI-05 is acceptable.

Authorization read by Michael Markley, Chief of the Plant Licensing Branch II-1, Office of Nuclear Reactor Regulation

As Chief of the Plant Licensing Branch II-1, Office of Nuclear Reactor Regulation, I concur with the Piping and Head Penetration Branch's determinations.

The NRC concludes that the proposed alternative provides reasonable assurance of structural integrity and leak tightness of the subject piping and does not adversely affect the containment boundary. The NRC determines that complying with the ASME Code requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2). As of November 27, 2019, the NRC authorizes the use of Alternative Request S2-I5-ISI-05 for Surry Unit 2, until the end of the next refueling outage, 2R29, which is scheduled for Spring 2020.

All other requirements of ASME Code, Section XI, for which relief was not specifically requested and authorized by the NRC staff remain applicable, including the third party review by the Authorized Nuclear In-service 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.