VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FOR ALTERNATIVE VEGP-ISI-ALT-04-03

ALTERNATE REPAIR OF INSTRUMENT LINE OFF STEAM GENERATOR NO. 2

VOGTLE ELECTRIC GENERATING PLANT UNIT 2

SOUTHERN NUCLEAR OPERATING COMPANY

DOCKET NUMBER 50-425

JULY 12, 2017

Technical Evaluation read by David Alley, Chief of the Component Performance, Non-Destructive Examination, and Testing Branch, Office of Nuclear Reactor Regulation

By letter dated July 10, 2017, Southern Nuclear Operating Company (the licensee) requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel (BPV) Code, Section XI, Appendix IX, regarding the alternate repair of a ¾ - inch pipe stub off of steam generator number 2 at Vogtle Electric Generating Plant, Unit 2 (VEGP).

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee submitted alternative VEGP-ISI-ALT-04-03 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.

On June 28, 2017, while at 100 percent power, the licensee detected a steam leak from a 3/4-inch pipe-to-cap socket weld off of the steam generator number 2 shell. This pipe stub is an abandoned instrument nozzle that was capped in 1990. The licensee reported that the leak appears to be at the base of the toe of the socket weld at the cap and that the measured leak rate is less than 1 gallon per minute. The licensee considered the leaking line as a part of the containment boundary because it is part of the secondary side of the steam generator.

The licensee proposed to install a mechanical clamp in accordance with Appendix IX, "Mechanical Clamping Devices for Class 2 and 3 Piping Pressure Boundary," of the ASME BPV Code, Section XI, 2007 Edition, 2008 Addenda. However, the licensee asked relief from the requirement of Appendix IX, Article IX-1000(c)(2), which prohibits the use of a mechanical clamp on the containment boundary.

The NRC staff reviewed the licensee's proposed alternative regarding the design, installation, defect characterization, material selection, pressure testing, and monitoring of the proposed mechanical clamp. The NRC staff finds that the proposed alternative satisfies the requirements in the ASME BPV Code, Section XI, Appendix IX, except for Article IX-1000(c)(2). The NRC staff determines that the licensee's proposed alternative repair will maintain the structural integrity of the subject piping because the licensee follows all of the requirements in the ASME BPV Code, Section XI, Appendix IX, except for Article IX-1000(c)(2).

Regarding the exception to Appendix IX, the licensee satisfactorily evaluated potential containment leakage caused by the flaw in the pipe stub and demonstrated that the projected containment leakage has sufficient margin with respect to the VEGP technical specifications allowed containment leakage rate. In addition, the licensee will monitor the repair and potential leakage with a remote camera and containment sumps. Given that the clamp will control leakage and arrest the growth of the crack, the NRC staff finds that the application of a clamp will not adversely affect the integrity of the containment boundary.

The NRC staff finds that cycling the plant for an unplanned shutdown to perform the required ASME Code repair is a hardship because cycling of the plant may cause unnecessary loading on components.

Based on the above review, the NRC staff finds that the licensee's proposed alternative maintains the structural integrity of the subject piping, that containment boundary is not adversely impacted, and a hardship exists for the licensee. The NRC staff concludes that requiring the ASME Code repair constitutes a hardship without a compensating increase in the level of quality and safety. Therefore, the use of the clamp as described in alternative VEGP-ISI-ALT-04-03 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 Component Performance, Non-Destructive Examination, and Testing Branch's determinations.

The NRC staff concludes that the proposed alternative provides reasonable assurance of structural integrity of the subject piping and does not adversely affect the containment boundary. The NRC staff determines that complying with the ASME BPV Code requirement 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). As of July 12, 2017, the NRC authorizes the use of alternative VEGP-ISI-ALT-04-03 for VEGP, Unit 2, until the end of the next refueling outage (2R19) which is scheduled to start on September 17, 2017.

All other requirements of ASME BPV 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.