

NRR-PMDAPEm Resource

From: Thompson, Jon
Sent: Friday, November 02, 2012 10:57 AM
To: Thorpe, April
Subject: Verbal Authorization of Relief - Note to File
Attachments: Verbal Authorization for Vogtle 1 on 10-31-2012.docx

As described in the attachment, on November 1, 2012, the NRC staff granted a verbal authorization for an alternative under 10 CFR 50.55a(a)(3)(ii). Attendees for the NRC staff included T. Lupold, K. Hoffman, R. Pascarelli, and J. Thompson. Attendees for the licensee included M. Ajluni, D. McKinney, R. Retherford, M. Altizer, T. Honeycutt, E. Groves, G. Gunn, and T. Petrak.

Please place this into ADAMS, pursuant to LIC-102, "Relief Request Reviews," for the Vogtle Electric Generating Plant, Unit 1, Docket No. 50-424.

Hearing Identifier: NRR_PMDA
Email Number: 522

Mail Envelope Properties (0A64B42AAA8FD4418CE1EB5240A6FED1DB53C18215)

Subject: Verbal Authorization of Relief - Note to File
Sent Date: 11/2/2012 10:56:42 AM
Received Date: 11/2/2012 10:56:43 AM
From: Thompson, Jon

Created By: Jon.Thompson@nrc.gov

Recipients:
"Thorpe, April" <April.Thorpe@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	Size	Date & Time
MESSAGE	539	11/2/2012 10:56:43 AM
Verbal Authorization for Vogtle 1 on 10-31-2012.docx		22121

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

VERBAL AUTHORIZATION FOR
RELIEF REQUEST VEGP-ISI-ALT-08
PROPOSED ALTERNATIVE TO ALLOW INSTALLATION
OF A MECHANICAL CLAMP ON A NON-PRESSURE BOUNDARY LEAK
VOGTLE ELECTRIC GENERATING PLANT UNIT 1
DOCKET NO. 50-424
NOVEMBER 1, 2012

On November 1, 2012, a telephone conference was held between the U.S. Nuclear Regulatory Commission (NRC) staff and the Southern Nuclear Operating Company, Inc. (the licensee) for the purpose of commuting the NRC staff's verbal authorization of the licensee's proposed alternative VEGP-ISI-ALT-08.

During this telephone conference, the following was stated by Timothy R. Lupold, Chief, Piping and Non-Destructive Evaluation Branch:

By letter dated October 25, 2012, as supplemented by letter dated October 29, 2012, Southern Nuclear Operating Company, Inc., the licensee, proposed an alternative (VEGP-ISI-ALT-08) to Appendix IX of Section XI of the American Society of Mechanical Engineer's Boiler and Pressure Vessel (ASME) Code to allow installation of a mechanical clamp on a non-pressure boundary leak from a Class 1 Chemical and Volume Control valve 1-1208-U4-A11. The licensee proposes this alternative during the current 2012 operating cycle at the Vogtle Electric Generating Plant, Unit 1 (VEGP-1). The licensee states that the mechanical clamp will only be in place until the 1R18 refueling outage in the spring of 2014 or until an outage of sufficient duration to allow VEGP-1 to perform either a permanent repair to the affected valve or replace the valve. The licensee also provided information on the hardship involved with performing a plant shutdown and cooldown to Mode 5, which the licensee assessed as an option. Therefore the licensee requested authorization of their proposed alternative under the requirements of Title 10 of the Code of Federal Regulations Part 50 (10 CFR 50) 50.55a(a)(3)(ii).

The staff reviewed the licensee's proposed alternative under the requirements of 10 CFR 50.55a(a)(3)(ii), such that;

Compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Without the proposed alternative, the licensee stated that in order to stop the leakage they would need to return the plant to Mode 5. The licensee stated the activities associated with the shutdown and startup processes would cause an additional estimated radiation dose of approximately 400-500 mREM. The licensee also cited the

inherent risk associated with a shutdown transient and the extra cycles of thermal and pressure stresses for plant components. The startup and shutdown activities also present otherwise unnecessary challenges to personnel safety. The staff finds the radiological dose and risk associated with these startup and shutdown evolutions, to be significantly larger than that expected to be associated with the installation of the mechanical clamping device to resolve the non-pressure boundary leakage concern associated with valve 1-1208-U4-A11. Therefore the staff finds the licensee has identified sufficient hardship under 10 CFR 50.55a(a)(3)(ii).

The licensee proposed to install a mechanical clamp at the degraded body to bonnet seal weld on valve 1-1208-U4-A11 to encapsulate the steam leak. The mechanical clamp is designed using Appendix IX of the ASME Code, Section XI, as guidance with two exceptions, use of the device on a class 1 valve under Article IX-1000(c)(1) and monitoring requirements under Article IX-6000(a). The staff reviewed the licensee's Minor Design Change 439341 and its associated worksheets, and found the licensee's design meets the requirements of Appendix IX in that all of the calculated stresses were below the code allowable stresses. The licensee had a piping analysis done to demonstrate that the piping system would continue to operate safely with the additional weight of a clamp on valve 1-1208-U4-A11. The licensee performed calculation X4CPS0351 which concluded the new loading conditions are still acceptable and there is adequate inherent reserve margin to accommodate the increased loads from the clamp. Therefore, the staff finds the licensee's design will provide reasonable assurance of structural integrity.

To support the leakage integrity of the degraded seal weld, the licensee proposed to inject a sealant into the mechanical clamp enclosure to minimize the leakage. The licensee stated that the sealant is approved for use on a Class 1 system. The staff finds that the use of a sealant that has low concentration of halogens along with the temporary nature of the application will limit the potential for stress corrosion cracking of the stainless steel piping and valve, and is therefore acceptable in this time limited application.

The licensee proposed not to perform ultrasonic examination of the clamp area in accordance with Article IX-6000(a). In this specific case, the NRC staff finds this deviation acceptable based on the configuration of the valve and the clamp installation. Due to the temporary nature of this application and its conservative design, the staff finds the required ultrasonic examination is not necessary as any potential degradation mechanism should not affect the structural integrity of the system and clamping device. In addition, the licensee has committed to perform visual monitoring of the valve and the temporary clamp for leakage on a daily basis for seven days. If after the initial seven days no leakage is observed, a monitoring schedule of weekly remote observations along with monthly VT-2 visual examinations will be implemented to ensure the structural and leakage integrity of the temporary repair.

On the basis of the above evaluation, the NRC staff finds that the proposed alternative will provide reasonable assurance that the structural integrity and leakage integrity of the degraded seal weld on valve 1-1208-U4-A11 will be maintained until the next refueling outage.

After the remarks by Mr. Lupold, the following was stated by Robert J. Pascarelli, Chief, Plant Licensing Branch II-1.

Therefore, given the hardship presented by the licensee, the temporary nature of the proposed alternative, and the staff's review of the design of the mechanical clamping device, the NRC staff concludes that the licensee has provided sufficient technical basis to find that compliance with the limitation of Appendix IX Article XI-1000(c)(1) and required exams of Article IX-6000(a) would cause an unnecessary hardship 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(a)(3)(ii), and is in compliance with the ASME Code's requirements. Therefore, in accordance with 10 CFR 50.55a(a)(3)(ii) the NRC authorizes use of the licensee's proposed alternative, VEGP-ISI-ALT-08, at Vogtle Electric Generating Plant, Unit 1 until the 1R18 refueling outage in the spring of 2014.

The staff notes that all other ASME Code, Section XI requirements 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.