



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 17, 2017

LICENSEE: Exelon Generating Company, LLC
FACILITY: Limerick Generating Station, Unit 2
SUBJECT: SUMMARY OF MAY 17, 2017, TELEPHONE CONFERENCE REGARDING
VERBAL AUTHORIZATION OF RELIEF REQUEST FOR LIMERICK
GENERATING STATION, UNIT 2 (CAC NO. MF9702)

INTRODUCTION

By letter dated May 15, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17135A423), as supplemented by letter dated May 16, 2017 (ADAMS Accession No. ML17137A068), Exelon Generation Company, LLC (Exelon, the licensee) requested relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, at the Limerick Generating Station (Limerick), Unit 2. Specifically, the licensee requested approval for Relief Request I4R-17 associated with the alternate repair of a 2-inch instrument line nozzle at penetration N-16D on the reactor pressure vessel. Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee requested to use the proposed alternative on the basis that complying with the specified requirement would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

This memorandum summarizes the telephone discussion on May 17, 2017, between the U.S. Nuclear Regulatory Commission (NRC) staff and Exelon regarding the relief request. During this telephone call, the NRC staff provided verbal authorization of the relief request as described below. Participants in the discussion are included in the enclosure to this memorandum.

BACKGROUND

On May 8, 2017, Limerick, Unit 2, performed a system leakage test of the reactor pressure vessel in accordance with IWB-521 O(a). A leak of approximately one pint per minute was observed from the N-160 instrument penetration. Exelon intends to repair the penetration by modifying the presently installed weld pad using Ambient Temperature Temper Bead welding in accordance with ASME Code Case N-638-4, "Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique, Section XI, Division I."

In support of the flaw evaluation and applicable acceptance criteria, ASME Code paragraphs IWB-3420 and IWB-3600 require characterization of the flaw in the penetration. Currently, there is not a qualified technique to perform volumetric non-destructive examination of the partial penetration weld in this configuration that can be used to accurately characterize the location, orientation, or size of a flaw in the weld. As an alternative to performing the

non-destructive examination required to characterize the flaw in instrument penetration N-160, Exelon is proposing to analyze a maximum postulated flaw that bounds the range of flaw sizes that could exist in the original J-groove weld and nozzle.

As discussed in the licensee's letter dated May 15, 2017, during refueling outage Li2R14, the licensee discovered a leak at the instrument penetration nozzle N-16D as part of the routine system leakage test. The licensee proposed to repair the subject nozzle using a half-nozzle repair method based on applicable requirements of the ASME Code, Section XI. The licensee proposed to remove a portion of the existing nozzle penetration, install a new reinforcement pad onto the existing weld pad, weld a new nozzle to the new weld pad, weld a reducing insert to the new nozzle, and weld the existing piping to the reducing insert.

RELIEF REQUEST TELEPHONE CONFERENCE

The NRC staff discussed the following during the telephone conference with Exelon on May 17, 2017, with respect to the proposed relief request.

In its request, the licensee proposed to repair the subject nozzle using a half-nozzle repair method based on applicable requirements of the ASME Code, Section XI. The licensee proposed to remove a portion of the existing nozzle penetration, install a new reinforcement pad onto the existing weld pad, weld a new nozzle to the new weld pad, weld a reducing insert to the new nozzle, and weld the existing piping to the reducing insert.

The NRC staff reviewed the licensee's flaw evaluation. It showed that a postulated flaw in the existing Alloy 82/182 weld will not affect the reactor vessel base metal significantly during fuel cycle 15. The design analysis showed that the nozzle will not eject from the reactor vessel shell during fuel cycle 15. The corrosion evaluation showed that the reactor vessel base metal will not be significantly affected by general corrosion, crevice corrosion, and galvanic corrosion during fuel cycle 15. The NRC staff further finds that the licensee satisfied the extent-of-condition inspection and that loose parts will not be a safety concern. The NRC staff also finds the licensee's hardship justification acceptable. The NRC staff finds the hardship justification is acceptable because performing the repair in accordance with ASME Code, Section XI, would result in significant increase in radiological exposure. The NRC staff finds that the licensee's proposed repair of nozzle N-16D provides reasonable assurance of structural integrity and leak-tightness for fuel cycle 15.

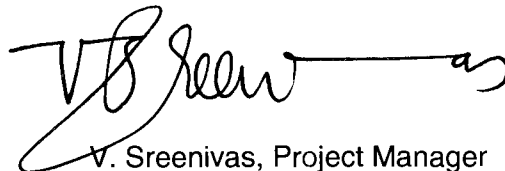
The NRC staff concludes that the proposed alternative provides reasonable assurance of structural integrity and leak-tightness of the instrument line nozzle at penetration N-16D on the reactor vessel. The NRC staff has determined that complying with the ASME Code requirement would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety. Accordingly, the NRC staff has concluded that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, as of May 17, 2017, the NRC staff authorizes the use of Relief Request I4R-17 for fuel cycle 15, which is scheduled to end in the spring of 2019, at Limerick, Unit 2.

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 Inservice Inspector.

This verbal authorization does not preclude the NRC staff from asking additional clarification questions regarding Relief Request I4R-17 while preparing the subsequent written safety evaluation. The NRC staff's written safety evaluation will be provided by separate correspondence.

The verbal relief was authorized with the concurrence of Rick Ennis, Acting Chief, Plant Licensing Branch I, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation (NRR), and David Alley, Chief, Component Performance, Non-Destructive Examination and Testing Branch, Division of Engineering, NRR.

If you have any questions, please contact me at (301) 415-2597 or by e-mail to V.Sreenivas@nrc.gov.

A handwritten signature in black ink, appearing to read 'V. Sreenivas', with a long horizontal flourish extending to the right.

V. Sreenivas, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-353

Enclosure
List of Attendees

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GENERATING STATION, UNIT 2 (CAC NO. MF9702) DATED MAY 17, 2017

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MAY 17, 2017, TELEPHONE CONFERENCE REGARDING VERBAL AUTHORIZATION OF
RELIEF REQUEST FOR LIMERICK GENERATION STATION, UNIT 2

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Enclosure