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

March 5, 2019

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION, UNIT 2 – ISSUANCE OF RELIEF REQUEST IR4-17, REVISION 1, RE: REACTOR PRESSURE VESSEL NOZZLE REPAIR IN LIEU OF SPECIFIC ASME CODE REQUIREMENTS (EPID L-2018-LLR-0071)

Dear Mr. Hanson:

By letter dated May 4, 2018 (Agencywide Documents Access and Management System Accession No. ML18129A331), Exelon Generation Company, LLC (Exelon, the licensee) submitted Relief Request I4R-17, Revision 1, requesting relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, regarding repair of a 2-inch instrument line nozzle at penetration N-16D on the reactor pressure vessel at Limerick Generating Station (Limerick), Unit 2.

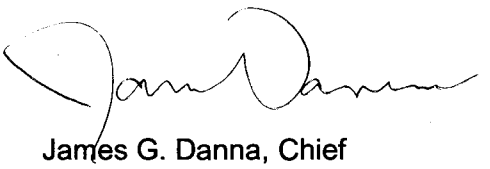
Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), Exelon requested relief on the basis that conformance with the specified requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined the licensee demonstrated that the proposed alternative provides a reasonable assurance of structural integrity and leaktightness of the subject component, and that complying with the specified ASME requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes, as set forth in the enclosed safety evaluation, that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, the NRC staff authorizes the use of Relief Request I4R-17, Revision 1, at Limerick, Unit 2, for the remainder of the fourth 10-year inservice inspection interval, which began on February 1, 2017, and will conclude on January 31, 2027, and the reminder of the current operating license, which is scheduled to conclude on June 22, 2049.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in the subject request for relief remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact the Limerick Project Manager, V. Sreenivas, at 301-415-2597 or V.Sreenivas@nrc.gov.

Sincerely,



James G. Danna, Chief
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-353

Enclosure:
Safety Evaluation

cc: Listserv

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST I4R-17, REVISION 1

ALTERNATE REPAIR OF REACTOR VESSEL INSTRUMENT LINE NOZZLE N-16D

EXELON GENERATION COMPANY, LLC

LIMERICK GENERATING STATION, UNIT 2

DOCKET NO. 50-353

1.0 INTRODUCTION

By letter dated May 4, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18129A331), Exelon Generation Company, LLC (Exelon, the licensee) submitted Relief Request (RR) I4R-17, Revision 1, requesting relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, regarding repair of a 2-inch instrument line nozzle at penetration N-16D on the reactor pressure vessel (RPV) at Limerick Generating Station (Limerick), Unit 2.

On May 17, 2017 (ADAMS Accession No. ML17137A307), the U.S. Nuclear Regulatory Commission (NRC) verbally authorized the use of RR I4R-17 at Limerick, Unit 2, for repair of the RPV 2-inch nominal pipe size instrument nozzle at penetration N-16D for one operating cycle following the Spring 2017 refueling outage. The NRC staff followed up with its written authorization for RR I4R-17 on August 14, 2017 (ADAMS Accession No. ML17208A090). With the current RR I4R-17, Revision 1, Exelon seeks relief from certain ASME Code, Section XI requirements regarding penetration N-16D for the reminder of its fourth 10-year inservice inspection interval, and the remainder of the Limerick, Unit 2, current operating license.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), Exelon requested relief on the basis that conformance with the specified requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

2.0 REGULATORY EVALUATION

Adherence to Section XI of the ASME Code is mandated by 10 CFR 50.55a(g)(4), which states, in part, that ASME Code Class 1, 2, and 3 components must meet the requirements, except the design and access provisions and the preservice examination requirements set forth in Section XI of the ASME Code.

The regulation in 10 CFR 50.55a(z) states that alternatives to the requirements of paragraphs (b) through (h) of 10 CFR 50.55a, or portions thereof, may be used when authorized by the Director, Office of Nuclear Reactor Regulation. A proposed alternative must be submitted and authorized prior to implementation. The licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety, or (2) compliance with the specified requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

Based on the above, and subject to the following technical evaluation, the NRC staff finds that regulatory authority exists for Exelon to request the use of an alternative and the NRC to authorize the proposed alternative.

3.0 TECHNICAL EVALUATION

3.1 ASME Code Component Affected

ASME Code:	Class 1
Reference:	IWB-2500, Table IWB-2500-1
Exam Category:	B-P
Item Number:	B15.10
Description:	RPV instrument penetration nozzle, 2-inch nominal pipe size
Component Number:	Instrument penetration nozzle N-16D

3.2 Applicable Code

The current Code of Record for Limerick, Unit 2, during the fourth 10-year inservice inspection interval is the ASME Code, Section XI, 2007 Edition with the 2008 Addenda. The Code of Construction for the RPV is the ASME Code, Section III, 1968 Edition, up to, and including, the Summer 1969 Addenda, except that Article 4 of the Winter 1969 Addenda applies.

3.3 Applicable Code Requirements

The following subarticles, paragraphs, and subparagraphs of the ASME Code, Section XI, contain the provisions regarding flaw removal and flaw evaluation.

Flaw Removal

- Subarticle IWA-5250(a)(3) states, "Components requiring corrective action shall have repair/replacement activities performed in accordance with IWA-4000 or corrective measures performed where the relevant condition can be corrected without a repair/replacement activity."

- Paragraph IWA-4412 states, "Defect removal shall be accomplished in accordance with the requirements of IWA-4420."

- Subparagraph IWA-4611.1(a) states, "Defects shall be removed in accordance with IWA-4422.1. A defect is considered removed when it has been reduced to an acceptable size."

- Subarticle N-528, "Repair of Weld Defects," of the ASME Code, Section III, 1968 Edition up to, and including, the Summer 1969 Addenda, except that Article 4 of the Winter 1969 Addenda applies, requires repair of weld defects, including complete and satisfactory removal of defects detected visually, by examinations, or by leakage tests.

Flaw Evaluation

- Subparagraph IWB-3522.1 states, in part, "A component whose visual examination (IWA-5240) detects any of the following relevant conditions shall meet IWB-3142 and IWA-5250 prior to continued service ..."

- Subparagraph IWB-3142.1(b) states, "A component whose visual examination detects the relevant conditions described in the standards of Table IWB-3410-1 shall be unacceptable for continued service, unless such components meet the requirements of IWB-3142.2, IWB-3142.3, or IWB-3142.4."

- Subarticle IWA-3300(a) states, in part, "Flaws detected by the preservice and inservice examinations shall be sized ..."

- Subarticle IWA-3300(b) states, in part, "Flaws shall be characterized in accordance with IWA-3310 through IWA-3390, as applicable ..."

- Subarticle IWB-3610(b) states, in part, "For purposes of evaluation by analysis, the depth of flaws in clad components shall be defined in accordance with Fig. IWB-3610-1 ..."

- The implementing reply of ASME Code Case N-749 states, "It is the opinion of the Committee that, in lieu of IWB-3610 and IWB-3620, flaws in ferritic steel components operating in the upper shelf temperature range may be evaluated using the following acceptance criteria." The methods and criteria of N-749 are based on the methods of elastic-plastic fracture mechanics.

- Subarticle IWB-3420 states, "Each detected flaw or group of flaws shall be characterized by the rules of IWA-3300 to establish the dimensions of the flaws. These dimensions shall be used in conjunction with the acceptance standards of IWB-3500."

3.4 Reason for Alternative

On May 8, 2017, during Limerick, Unit 2, refueling outage pre-startup leakage testing of the RPV, a leak of approximately one pint per minute was observed between the RPV wall and a 2-inch instrument line penetration nozzle N-16D. Exelon performed a "half-nozzle" repair that replaced part of the existing nozzle assembly with a nozzle penetration that is resistant to intergranular stress corrosion cracking (IGSCC).

The licensee applied a welded pad to a preexisting weld pad on the outside diameter (OD) of the RPV by using an IGSCC-resistant nickel-based Alloy 52M (ERNiCrFe-7A) filler metal. The

preexisting weld pad was installed as part of the RPV's initial design. The new weld pad was welded using the machine gas tungsten arc welding process and ambient temperature temper bead welding technique. Following this, Exelon welded an IGSCC-resistant nozzle to the new weld pad with a partial penetration weld using a non-temper bead manual welding technique and an IGSCC-resistant nickel-based Alloy 52M filler metal. This new partial penetration weld became the new pressure boundary.

As part of this repair, the original partial penetration attachment weld (J-groove weld) on the inside diameter (ID) of the RPV and a remnant of the original nozzle remained in place and are the subject of the proposed alternative. At the time of the repair in 2017, Exelon performed a one-cycle flaw evaluation to demonstrate acceptability of leaving the original partial penetration weld in service for one cycle with a maximum postulated flaw.

Additionally, the licensee stated that while it performed ultrasonic examinations prior to and after performing the repair, currently there are no qualified techniques that can accurately characterize the flaw (i.e., location, orientation, or size) in the subject J-groove weld that can meet the requirements of subarticle IWB-3420 and subparagraph IWB-3610(b). Since the existing flaw on penetration nozzle N-16D was not removed or reduced in size in accordance with subarticle IWA-4410 and subparagraph IWA-4611, and because the previous RR was for one cycle only, the licensee either needs relief again or must meet the applicable ASME Code requirements.

With the current RR, the licensee provided additional technical information that includes a multi-cycle flaw evaluation, along with corrosion evaluations, and requested relief from the ASME Code requirements for the modified instrument penetration nozzle N-16D on the basis that complying with those requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety. Specifically, the licensee indicated that a repair performed in accordance with the ASME Code requirements to remove the flaw would require a full core offload to access the area to be repaired and would result in significant risk associated with loose parts, foreign material, and significant radiological dose.

3.5 Proposed Alternatives and Basis for Use

Exelon proposes the following alternatives to the requirements specified above on the basis that performing the ASME Code-required repair would result in hardship, without a compensating increase in the level of quality and safety.

As an alternative to flaw removal or reduction in size to meet the applicable acceptance standards of subparagraph IWA-5250(a)(3) of the ASME Code, Section XI, Exelon proposes the continued use of the OD-repaired RPV instrument nozzle N-16D utilizing the OD weld pad as described above, and in RR I4R-17, Revision 1.

Additionally, Exelon is seeking an alternative to performing the required nondestructive examination (NDE) to characterize the flaw under subarticles IWB-3420 and IWB-3610(b) of the ASME Code, Section XI, for the subject penetration N-16D. Specifically, Exelon proposes analyzing a maximum postulated flaw that bounds the range of flaw sizes that could exist in the original J-groove weld and nozzle. In addition, Exelon proposes to use followup ultrasonic testing (UT) and bare metal VT-2 examinations to confirm that the as-left J-groove weld flaw does not propagate into the vessel material.

Exelon stated that the Limerick, Unit 2, RPV is manufactured from SA-533, Grade B, quenched and tempered low alloy steel that is clad with a stainless steel weld overlay on the ID. During its refueling outage in the spring of 2017, the licensee discovered a leak at the instrument penetration nozzle N-16D located on the RPV. Exelon stated that the instrument nozzle penetrations for Limerick, Unit 2, are fabricated from Alloy 600 (nickel based alloy), and are J-grove welded to the RPV with Alloy 182 filler metal, and capped by an Alloy 82 weld overlay. The licensee also stated that the leakage was discovered by visual examination, and the leakage was located at the nozzle interface (annular gap) with the OD of the vessel nozzle reinforcement.

Two visual examinations were performed from the ID of the RPV in an effort to characterize the flaw. The visual examination performed prior to the repair identified two suspect areas, but no definitive crack-like indications were identified on the original weld overlay or the nozzle bore. Visual examinations performed after the repair and subsequent cleaning of the area identified two relevant indications: (1) a rounded indication in the Alloy 82 overlay, and (2) a linear "crack-like" indication on the ID of the Alloy 600 nozzle.

Additionally, a volumetric examination was performed from the OD of the RPV using UT on the N-16D J-groove weld prior to the weld repair in accordance with topical report BWRVIP-03, Revision 19, "BWR [Boiling Water Reactor] Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines." The examination volume included the J-groove weld, weld butter, and the RPV low alloy steel interface. The licensee stated that the examination was performed for informational purposes and to supplement the visual examinations performed from the RPV ID. Exelon further stated that the weld overlay and nozzle could not be distinguished with this volumetric technique. However, the licensee did not identify crack-like indications in the RPV low alloy steel or the Alloy 182 weld butter. Several aligned fabrication-like flaws were detected along the nozzle to J-groove weld fusion line, although IGSCC could not be ruled out. Exelon stated that as the Inconel 82 weld overlay at the RPV ID surface could not be distinguished by this examination, no determination of whether the fabrication defects were open to the surface could be made. While no definitive crack or leak path was observed, the licensee stated that the UT examination provided reasonable confidence that the flaw had not propagated into the RPV low alloy steel.

Exelon stated that as part of this RR, it will perform additional best efforts UT examinations of the RPV low alloy steel surrounding the N-16D penetration during the next outage, and every 10 years thereafter, to confirm that the as-left J-groove weld flaw does not propagate into the vessel wall.

The licensee performed a flaw evaluation along with a weld residual stress analysis. These analyses confirmed that the postulated flaw of the repaired nozzle would be acceptable for 40 years from the time of the repair. Additionally, because the current configuration of instrumentation penetration nozzle N-16B exposed RPV low alloy steel to the reactor coolant, the licensee also performed a corrosion evaluation. Based on the corrosion evaluation, the licensee concluded that the potential material degradation is acceptable. Exelon provided proprietary and nonproprietary versions of its evaluations as Attachments 3, 4, 5, 6, 7, and 8 to its RR. Attachments 6 and 7 document Exelon's nonproprietary evaluations for the as-left J-groove weld analysis and weld residual stress analysis, respectively (ADAMS Accession Nos. ML18129A332 and ML18129A333, respectively). With Attachment 8, the licensee provided its nonproprietary corrosion evaluation for Limerick, Unit 2, N-16D nozzle modification (ADAMS Accession No. ML18129A334).

Based on the above discussed evaluations, the licensee concluded that performing an ASME Code-required repair would result in hardship, without a compensating increase in quality and safety.

3.6 Duration of Proposed Alternative

The licensee stated that the proposed alternative will be applicable for the remainder of the current fourth 10-year inservice inspection interval, which began on February 1, 2017, and will conclude on January 31, 2027, and the reminder of the current plant life, scheduled to conclude on June 22, 2049.

4.0 NRC STAFF EVALUATION

In May of 2017, Exelon identified a leak of approximately one pint per minute between the RPV wall and the instrument line nozzle penetration N-16D at Limerick, Unit 2. Prior to restart, Exelon proposed using alternatives to the ASME Code, and requested relief from certain ASME Code repair replacement requirements for Limerick, Unit 2, for one cycle. The NRC staff evaluated the licensee's proposed alternatives, the weld design, flaw evaluations, welding, and licensee examinations. Based on its detailed evaluation, NRC staff determined that the licensee's proposed alternatives provided an acceptable level of quality and safety for one operating cycle. The acceptability of the licensee's alternative and repair techniques was evaluated in the safety evaluation for the original RR I4R-17 dated August 14, 2017 (ADAMS Accession No. ML17208A090). Other than the ASME Code requirements related to removal and characterization of flaws, another RR would not be required for the repair technique since the welding and NDE related to the modification were performed in accordance with the ASME Code, Section XI, or NRC-approved Code Cases. Therefore, the focus of NRC staff's review for the current RR is on the additional evaluations provided by the licensee in support of continued operation of Limerick, Unit 2, with the current configuration of the instrument line nozzle penetration N-16D. These evaluations were provided to the staff in the form of attachments, which included proprietary and nonproprietary evaluations, referenced in Section 3.5 of this safety evaluation.

4.1 Hardship

The inservice inspection Code of Record during the fourth 10-year interval at Limerick, Unit 2, is the ASME Code, Section XI, 2007 Edition through 2008 Addenda. ASME Code, Section XI, subparagraph IWA-5250(a)(3), requires repair or replacement activities in accordance with Article IWA-4000 for components requiring corrective action or correction of the relevant condition. Additionally, subarticles IWB-3420 and IWB-3610(b) require that the flaws be characterized to establish dimensions and depth. The NRC staff notes that the original J-grove weld for instrument penetration nozzle N-16D is located on the ID of the RPV and is inaccessible from the OD of the RPV for removal or repair. Additionally, while the ferritic portions of the RPV near the J-groove weld can be volumetrically examined from the OD of the RPV, there is no qualified procedure to examine the J-groove weld or the existing flaw. The licensee stated that access to perform the repair would require a full core offload and would result in significant dose and plant risk. The NRC staff recognizes that a core offload and subsequent repair from the ID of the RPV represents significant risk in terms of radiation dose and plant risk in terms of introduction of foreign materials during the repair. Therefore, the NRC staff finds that the required ASME Code repair for the original J-grove weld for instrument penetration nozzle N-16D cannot be performed without hardship or unusual difficulty. Accordingly, the NRC staff agrees that compliance with the ASME Code requirements under the

above discussed circumstances may result in hardship, without a compensating increase in the level of quality and safety.

4.2 Corrosion

Regarding the corrosion evaluations, the licensee's Attachment 8 to RR I4R-17, Revision 1, provides licensee's nonproprietary corrosion evaluations for the N-16D nozzle, "Corrosion Evaluation for Limerick, Unit 2, N-16D Nozzle Modification" (ADAMS Accession No. ML18129A334). The corrosion evaluations addressed general corrosion, galvanic corrosion, crevice corrosion, and stress corrosion cracking in exposed RPV low alloy steel, nickel-based Alloys 690, and 52M. The licensee provided data on each type of potential corrosion mechanisms that the modified nozzle could be subject to. Based on the results of these evaluations, the licensee concluded that the repaired penetration with its new configuration is acceptable.

Specifically, these evaluations provided a conservative assumed general corrosion rate on a per-year basis for low-Alloy steel based on laboratory testing and available operating experience from similar reactors. These corrosion evaluations also qualitatively evaluated the susceptibility of the low-alloy steel to crevice corrosion, galvanic corrosion, and stress corrosion cracking, and evaluated the susceptibility of the repair materials (Alloys 690, 52, and 152) to IGSCC. The NRC staff found the evaluation of these mechanisms to be acceptable. Based on the very low per-year corrosion rate of the low-alloy steel, the NRC staff finds that corrosion of RPV low alloy steel at the repaired nozzle location will not adversely affect the integrity of the RPV.

Additionally, the NRC staff finds that the licensee's evaluation of the potential for general corrosion, galvanic corrosion, and crevice corrosion is based on laboratory testing and operating experience in boiling water reactors under conditions that conservatively bound those at Limerick, Unit 2, and therefore, the licensee's corrosion evaluation is acceptable.

4.3 Loose Parts

Because the original nozzle N-16D was not removed entirely, Exelon also performed a loose parts evaluation that assessed the potential for nozzle segments to become loose during power operations. The licensee's evaluations considered interfacing systems, other RPV internals components, and flow blockage, as well as adverse chemical reactions. As a result of these evaluations, Exelon determined that the potential for loose parts did not pose a safety concern. The NRC staff finds that the remnant nozzle with its existing J-groove weld does not pose a significant hazard of becoming loose parts. The staff notes that multiple visual examination identified only minor indications on the nozzle and the J-groove weld. Additionally, the licensee conservatively assumed loose parts and evaluated its effects and found that they do not pose a safety hazard. Therefore, the staff finds the licensee's loose parts' evaluations acceptable.

4.4 Flaw Evaluation

The licensee performed flaw evaluation to determine the suitability of leaving the original degraded J-groove weld in the RPV following the repair of nozzle N-16D. The nonproprietary flaw evaluation and the weld residual stress analysis in support of the flaw evaluation are provided in licensee's Attachments 8 and 7, respectively.

The licensee used a three-dimensional finite element analysis to predict the weld-induced residual stresses in the as-left original J-grove weld. This included simulation of the original butter and J-groove weld along with the original overlay attaching the original N-16D nozzle to the ID of the RPV. The analysis also included the simulation of the repair, which accounted for residual stresses from the new weld pad and the new J-groove weld on the OD of the RPV. The staff finds that the weld residual modeling used to perform the finite element analysis used all of the as-built features of the original nozzle, as well as the modified nozzle, and the model was validated by standard verification testing. Therefore, the staff finds the licensee has adequately accounted for the residual stresses.

The final results from the finite element analysis were used to support the fracture mechanics evaluation. For the fracture mechanics evaluation, the licensee assumed that the entire J-groove weld and the weld butter are completely cracked. The licensee also conservatively postulated that a radial-axial corner flaw would grow into the low-alloy steel RPV by fatigue crack growth under cyclic loading. Additionally, for conservatism, the licensee included the possibility of flaw propagation due to stress corrosion cracking of the low-alloy steel. The licensee utilized a combination of linear-elastic fracture mechanics and elastic-plastic fracture mechanics for its flaw evaluation. In summary, the licensee used fatigue and stress corrosion cracking crack growth in its fracture mechanics evaluation of the postulated flaw in the as-left J-groove weld. Based on a combination linear-elastic fracture mechanics and elastic-plastic fracture mechanics, the postulate flaw was shown to be acceptable for 40 years after the modification. The NRC staff notes that the licensee has adequately demonstrated by analytical methods that the postulated flaw would remain acceptable for the remainder of the Limerick, Unit 2, plant life, utilizing applicable safety factors and J-R curves from Regulatory Guide 1.161, "Evaluation of Reactor Pressure Vessels with Charpy Upper-Shelf Energy Less than 50 Ft-Lb," dated June 1995 (ADAMS Accession No. ML003740038). Therefore, the NRC staff finds the licensee's flaw evaluation acceptable.

4.5 Examinations

As part of its proposal, Exelon stated that it will perform bare metal VT-2 examination of the N-16D nozzle from the OD of RPV every refueling outage during the ASME Code, Section XI, IWB-5000, System Leakage Test. Additionally, the licensee stated that it will perform a best-effort of UT of the RPV low-alloy steel around the N-16D during the next refueling outage and every 10 years thereafter. The NRC staff notes that these examinations provide adequate assurance that if significant deterioration was to occur during the current plant life, it would be detected prior to becoming a safety concern. Therefore, the NRC staff finds the licensee's proposed examinations acceptable.

5.0 CONCLUSION

As set forth above, the NRC staff determines the licensee has demonstrated that the proposed alternative provides a reasonable assurance of structural integrity and leaktightness of the subject component and that complying with the specified ASME 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, the NRC staff authorizes the use of RR I4R-17, Revision 1 at Limerick, Unit 2, for the remainder of the fourth 10-year inservice inspection interval, which began on February 1, 2017, and will conclude on January 31, 2027, and the reminder of the current operating license, which is scheduled to conclude on June 22, 2049.

All other requirements of the ASME Code, Section XI, for which relief has not been specifically requested and approved in this RR remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: R. Kalikian

Date: March 5, 2019

SUBJECT: LIMERICK GENERATING STATION, UNIT 2 – ISSUANCE OF RELIEF REQUEST IR4-17, REVISION 1, RE: REACTOR PRESSURE VESSEL NOZZLE REPAIR IN LIEU OF SPECIFIC ASME CODE REQUIREMENTS (EPID L-2018-LLR-0071) DATED MARCH 5, 2019

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