

RS-21-043

10 CFR 50.55a

March 26, 2021

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

LaSalle County Station, Unit 2
Renewed Facility Operating License No. NPF-18
NRC Docket No. 50-374

Subject: Supplemental Information regarding Relief Request I4R-12 Relief from Code Examinations for 2B33-F060A and 2B33-F060B Repairs, Revision 2

- References:
1. Letter from D. Murray (Exelon Generation Company, LLC) to U.S. NRC (Nuclear Regulatory Commission), "Relief Request I4R-12 Relief from Code Surface Examinations for 2B33-F060B Valve Repair," dated March 7, 2021 (ML21067A000).
 2. Email from B. Vaidya (U.S. NRC) to J. Taken (EGC), "LASALLE UNITS 1 AND 2 – REQUEST FOR ADDITIONAL INFORMATION (RAI) RE: Relief Request I4R-12 Relief from Code Surface Examinations for 2B33-F060B Valve Repair, (EPID-L-2021-LLR-0016)," dated March 9, 2021.
 3. Letter from D. Murray (Exelon Generation Company, LLC) to U.S. NRC (Nuclear Regulatory Commission), "Relief Request I4R-12 Relief from Code Examinations for 2B33-F060A and 2B33-F060B Repairs," dated March 9, 2021 (ML21068A442).
 4. Email from B. Vaidya (U.S. NRC) to J. Taken (EGC), "LaSalle Unit 2 - Verbal Authorization of LaSalle Unit 2 Relief Request I4R-12, Revision 1 re: Valve Repairs on Valves 2B33-F060A and 2B33-F060B," dated March 15, 2021.
 5. Letter from D. Murray (Exelon Generation Company, LLC) to U.S. NRC (Nuclear Regulatory Commission), "Relief Request I4R-12 Relief from Code Examinations for 2B33-F060A and 2B33-F060B Repairs, Revision 2," dated March 26, 2021 (ML21085A000).

In Reference 5, Exelon Generation Company, LLC (EGC) requested NRC approval of relief request I4R-12, Revision 2 associated with the fourth Inservice Inspection (ISI) interval for

LaSalle County Station (LSCS), Unit 2 in accordance with 10 CFR 50.55a, "Codes and standards," paragraph (z)(2). Specifically, the referenced letter requested authorization of alternative examination requirements for the repair of Unit 2 Reactor Recirculation flow control valves 2B33-F060A and 2B33-F060B, currently in progress, in accordance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, paragraph IWA-4000.

The fourth interval of the LSCS Unit 2 ISI Program is based on the ASME Code, Section XI, 2007 Edition through 2008 Addenda. The fourth ISI interval at LSCS began on October 1, 2017 and is currently scheduled to end September 30, 2027.

Following submittal of Reference 5, a clarification telephone call took place on March 26, 2021 between NRC and EGC. NRC determined that clarification to the information submitted in Reference 5 was required to complete its review of relief request I4R-12, Revision 2.

The attachment to this letter provides the supplemental information to support NRC review of Reference 5.

EGC requests authorization of the proposed relief request for both 2B33-F060A and 2B33-F060B by March 29, 2021.

There are no regulatory commitments contained within this letter. Should you have any questions concerning this letter, please contact Mr. Jason Taken at (630) 657-3660.

Respectfully,



Dwi Murray
Sr. Manager – Licensing
Exelon Generation Company, LLC

Attachment: Supplemental Information regarding Relief Request I4R-12 Associated with Alternative Examination Requirements for Repairs of Reactor Recirculation Flow Control Valves, Revision 2

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector – LaSalle County Station
NRC Project Manager, NRR – LaSalle County Station
Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT

**Supplemental Information regarding Relief Request I4R-12 Associated with
Alternative Examination Requirements for Repair of Reactor Recirculation Flow
Control Valves 2B33-F060A and 2B33-F060B, Revision 2**

ATTACHMENT

Supplemental Information regarding Relief Request I4R-12 Associated with Alternative Examination Requirements for Repair of Reactor Recirculation Flow Control Valves 2B33-F060A and 2B33-F060B, Revision 2

In the referenced letter, Exelon Generation Company, LLC (EGC) requested NRC approval of relief request I4R-12, Revision 2 associated with the repairs of Unit 2 Reactor Recirculation flow control valves 2B33-F060A and 2B33-F060B. In support of the Nuclear Regulatory Commission (NRC) continued review of the referenced letter, the following supplemental information is provided.

1. **Approximate size of the wear area and the size of area to be restored above minimum wall thickness.**

The total internal surface area of the valve is estimated by assuming the shape of a cylinder with a diameter of 21.83 inches and a length of 72 inches. This results in a total internal surface area of approximately 4937 square-inches. The general wear area in the lower plug guide region was approximated assuming a dome shape. The wear area for 2B33-F060A is noted in the highlighted portions of Figure I4R-12-4 in the referenced letter. The wear area for 2B33-F060B is noted in the highlighted portions of Figure I4R-12-2 in the referenced letter. Conservatively assuming wear on 50% of the surface area of 2B33-F060A and 75% of the surface area of 2B33-F060B, this results in a general wear area of less than 3% of the total valve internal surface area.

The below minimum wall thickness region was a small groove that crosses the minimum wall line at an angle, 360 degrees around. The machined area below minimum wall thickness was approximated by computing the surface area of a bounding right triangle with legs of 0.2 inches and 0.5 inches in length. The resultant area of the exposed surfaces that was below minimum wall thickness was less than 0.6% of the total valve internal surface area for either valve.

2. **Clarification of "sufficient wall thickness" statement described in the referenced letter.**

In the referenced letter, page 6 of Attachment 1 states "Welding and machining will be done to achieve sufficient wall thickness above minimum wall thickness to support restoration of valve functionality across the entire valve body." The intent of this statement is twofold. First, welding and machining is performed to ensure that the valve wall thickness will be restored to above minimum wall thickness in all areas. Second, there are some areas where additional weld material is applied and machined (beyond minimum wall thickness) to support valve body configuration to interface with the modified lower plug guide. To ensure wear does not challenge the minimum wall thickness due to the internal design change, wear rate calculations have been performed based on the utilization of the 316 stainless steel Stellite-overlaid lower plug guide. These calculations indicate the wear rate to be 0.00015 inches per operating cycle. This supports the determination that welding/machining to approximately 0.2 inches above minimum wall in the area of wear to be of sufficient thickness to support end of life operation with the new design.

ATTACHMENT

Supplemental Information regarding Relief Request I4R-12 Associated with Alternative Examination Requirements for Repair of Reactor Recirculation Flow Control Valves 2B33-F060A and 2B33-F060B, Revision 2

3. Confirmation of as-left area to determine that minimum wall or above minimum wall thickness has been achieved.

Micrometer measurements will be taken of the depth and internal bores of the machined areas to validate proper dimensions. The measurement tools have precision of 0.001 inches. These measurements will verify the valve body configuration to allow for reassembly and functionality, as well as assuring material thickness above the minimum wall thickness and design requirements.

4. Plans, if any, to monitor that minimum wall thickness is maintained over time.

EGC does not plan to monitor minimum wall thickness over time. The internal valve conditions necessitating this repair is believed to have occurred following a sustained low power operating condition in 2015, which is atypical of normal plant operation. Due to valve internal geometry, direct monitoring of minimum wall thickness through a method such as ultrasonic testing is not possible. Additionally, wear rate calculations support valve operation through end of plant life without encroaching on minimum wall thickness.

5. Sequence of enhanced visual examination (EVT-1) performance on the anti-rotation device fillet weld.

For the anti-rotation device fillet weld, an enhanced visual examination (EVT-1) will be performed on the first pass and on the final weld in lieu of a liquid penetrant (PT) examination of the final weld.

6. Identify the material of the anti-rotation device.

The material of the anti-rotation device is specified as 304L stainless steel material.

7. Confirm relief from the radiographic examination.

EGC confirms that radiographic examination will not be performed. Proposed relief to not perform radiographic examination is described in the referenced letter in accordance with 10 CFR 50.55a(z)(2) due to the significant radiological dose associated with the radiographic examination.

Reference:

Letter from D. Murray (Exelon Generation Company, LLC) to U.S. NRC (Nuclear Regulatory Commission), " Relief Request I4R-12 Relief from Code Examinations for 2B33-F060A and 2B33-F060B Repairs, Revision 2," dated March 26, 2021 (ML21085A000).