

RS-15-222

10 CFR 50.55a

July 30, 2015

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

LaSalle County Station, Units 1 and 2  
Facility Operating License Nos. NPF-11 and NPF-18  
NRC Docket Nos. 50-373 and 50-374

Subject: Response to Request for Additional Information Follow-up Clarification  
Regarding LaSalle County Station Relief Request I3R-14

- References:
- 1) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Proposed Alternative to the Examination Requirements for Nozzle-to-Vessel Welds and Inner Radii Sections in Accordance with 10 CFR 50.55a(z)(1)," dated January 29, 2015 (ADAMS Accession No. ML15030A175)
  - 2) Letter from D. M. Gullott (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding LaSalle County Station Relief Request I3R-14," dated June 8, 2015 (ADAMS Accession No. ML15160A611)
  - 3) Email from B. Vaidya (U. S. Nuclear Regulatory Commission) to L. A. Simpson (Exelon Generation Company, LLC) and D. M. Gullott (Exelon Generation Company, LLC), "LaSalle Units 1 and 2, TAC Nos. MF5654 and 5655, FOLLOW-UP RAI," dated June 30, 2015

In Reference 1, Exelon Generation Company, LLC (EGC) submitted relief request (RR) I3R-14 for LaSalle County Station (LSCS), Units 1 and 2. RR I3R-14 is intended to apply American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code), Code Case N-702, "Alternative Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-Shell Welds," to reactor pressure vessel nozzles at LSCS. EGC supplemented Reference 1 with a letter dated June 8, 2015 (Reference 2).

In Reference 3, the U. S. Nuclear Regulatory Commission (NRC) provided a follow-up RAI related to its review of RR I3R-14. Attachments 1 and 2 of this letter provide the requested information.

There are no regulatory commitments contained within in this letter.

Should you have any questions concerning this letter, please contact Ms. Lisa A. Simpson at (630) 657-2815.

Respectfully,

A handwritten signature in black ink, appearing to read 'D. Gullott', followed by a horizontal line extending to the right.

David M. Gullott  
Manager – Licensing  
Exelon Generation Company, LLC

Attachments:

- 1) Response to Request for Additional Information
- 2) Structural Integrity Associates, Inc.<sup>®</sup> Report No. 1400187.401, Revision 0, Response to NRC RAI Regarding Stress Corrosion Cracking (SCC) Initiation Time

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

**ATTACHMENT 1**  
**Response to Request for Additional Information**

By letter to the U. S. Nuclear Regulatory Commission (NRC) dated January 29, 2015, Exelon Generation Company, LLC (EGC) submitted relief request (RR) I3R-14 for LaSalle County Station (LSCS), Units 1 and 2 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15030A175). RR I3R-14 is intended to apply American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code), Code Case N-702, "Alternative Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-Shell Welds," to reactor pressure vessel nozzles at LSCS. EGC supplemented RR I3R-14 with a letter dated June 8, 2015.

In an email dated June 30, 2015, the NRC provided a follow-up RAI related to its review of RR I3R-14.

**NRC RAI-1 Follow-up Clarification**

The June 8, 2015, response to the NRC RAI provides proprietary and non-proprietary nozzle stress reports (Attachments 3 and 4) and probabilistic fracture mechanics (PFM) reports (Attachments 5 and 6) to support the January 29, 2015, relief request I3R-14. Attachments 5 and 6 do not mention the stress corrosion cracking (SCC) initiation time. The December 19, 2007 SE on BWRVIP-108, "Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii," states **[on page 8]**, "The original BWRVIP-108 report assumed that the nozzle weld cladding is non-susceptible to SCC and applied a factor of 5 to the curve based on cast austenitic stainless steel weld data as the mean SCC initiation curve in the PFM analyses. Since this assumption was not justified, the staff requested that the BWRVIP use a mean curve without the factor of 5 in this evaluation. This change increased the P(FIE) for nozzle significantly." Since the December 19, 2007, SE on BWRVIP-108 is based on the PFM results using a mean SCC initiation curve without the factor of 5, please confirm that the PFM analyses of Attachments 5 and 6 are consistent with the December 19, 2007, SE approach regarding the SCC initiation time.

**EGC Response**

The SCC initiation time used in the PFM reports (Attachments 5 and 6) of the EGC RAI response dated June 8, 2015, is  $8.42E19 * (\sigma)^{-10.5}$ . This input is consistent with the NRC SE for BWRVIP-108 dated December 19, 2007.

The Structural Integrity Associates, Inc.<sup>®</sup> Report confirming this response is provided in Attachment 2.

**ATTACHMENT 2**

**Structural Integrity Associates, Inc.<sup>®</sup>  
Report No. 1400187.401, Revision 0**

**Response to NRC RAI Regarding  
Stress Corrosion Cracking (SCC) Initiation Time**

**2 pages follow**



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July 27, 2015

Report No. 1400187.401.R0

Quality Program: ☒ Nuclear ☐ Commercial

Ms. JoAnn Shields

LaSalle County Generating Station – Exelon Corporation

2601 North 21<sup>st</sup> Road

Marseilles, Illinois 61341-9757

Subject: Response to Nuclear Regulatory Committee (NRC) Request for Additional Information (RAI) Regarding Stress Corrosion Cracking (SCC) Initiation time.

Reference:

1. *Structural Integrity Calculation Package: Probability of Failure for LaSalle Unit 2 N1 Nozzle-to-Shell-Welds and Nozzle Blend Radii Regions, Revision 2, SI File Number 1400187.302.*
2. *Safety Evaluation of Proprietary EPRI Report: BWR Vessel and Internals Project, Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor nozzle-to-Vessel Shell Welds and Nozzle Inner Radius (BWRVIP-108). EPRI PROPRIETARY INFORMATION.*
3. BWRVIP Report, “BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05),” Electric Power Research Institute TR-105697, September 1995. **EPRI PROPRIETARY INFORMATION.**

Dear JoAnn,

This letter is to response to Nuclear Regulatory Committee (NRC) Request for Additional Information (RAI) regarding Stress Corrosion Cracking (SCC) initiation time used in analyses for probability of failure for LaSalle Unit 2 N1 nozzle-to-shell welds and nozzle blend radii regions [1]. The objective of this letter is to confirm that the approaches used in the analyses documented in Reference 1 are consistent with the approach approved in the Safety Evaluation (SE) report dated December 19, 2007 [2] in regard to SCC initiation time.

The SCC initiation time used by SI is  $0.842 \times 10^{20} \sigma^{-10.5}$ , per Reference 3 where  $\sigma$  is the applied stress, and is used in calculating the probability of failure for LaSalle Unit 2 N1 nozzle-to-shell-welds and nozzle blend radii regions documented in Reference 1.

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If you need further information, please do not hesitate to contact Structural Integrity Inc.

Prepared by:

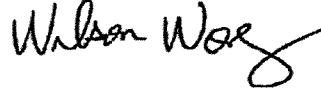


Jim Wu  
Consultant

7/27/15

July 27, 2015

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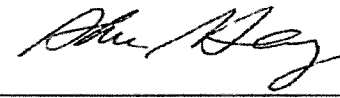


Wilson Wong  
Engineer

7/27/15

July 27, 2015

Approved by:



Stan Tang  
Associate

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July 27, 2015