



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

October 23, 2015

Mr. Michael P. Gallagher
Vice President, License Renewal Projects
Exelon Generation Company, LLC
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
LASALLE COUNTY STATION, UNITS 1 AND 2 LICENSE RENEWAL
APPLICATION – SET 12 (TAC NOS. MF5347 AND MF5346)

Dear Mr. Gallagher:

By letter dated December 9, 2014, Exelon Generation Company, LLC (Exelon) submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54, to renew the operating licenses NPF-11 and NPF-18 for LaSalle County Station (LSCS), Units 1 and 2, respectively. The staff of the U.S. Nuclear Regulatory Commission (NRC or the staff) is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

These requests for additional information were discussed with Mr. John Hufnagel, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3019 or by e-mail at Jeffrey.Mitchell2@nrc.gov.

Sincerely,

/RA/

Jeffrey S. Mitchell, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-373 and 50-374

Enclosure:
As stated

cc: Listserv

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Letter to Michael Gallagher from Jeffrey S. Mitchell dated October 23, 2015

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**LASALLE COUNTY STATION, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL INFORMATION – SET 12
(TAC NOS. MF5347 AND MF5346)**

RAI 4.2.5-1a

Background:

By letter dated August 26, 2015, the applicant responded to RAI 4.2.5-1 that addresses the comparison between the applicant's reactor vessel axial weld failure probability assessment and the staff's March 7, 2000, supplemental safety evaluation regarding BWRVIP-05.

In its response, the applicant revised license renewal application (LRA) Table 4.2.5-1 to compare the limiting LSCS Unit 1 axial weld mean RT_{NDT} value at 54 effective full power years (EFPY) (139.9 °F without margin) to the mean RT_{NDT} value (114 °F without margin) determined for the limiting CE reactor, "Mod 2" variant in the staff's supplemental safety evaluation.

The applicant indicated that, since the mean RT_{NDT} value (114 °F) from the staff's assessment does not bound the limiting Unit 1 mean RT_{NDT} value (139.9 °F), the Unit 1 axial welds at 54 EFPY are not bounded by the staff's failure probability of 5.02×10^{-6} per reactor year. The applicant also stated that the limiting Unit 1 axial welds are projected to reach the 114 °F mean RT_{NDT} value at approximately 39.15 EFPY. The applicant further indicated that, for reference, the Unit 1 cumulative neutron exposure through July 2015 is equivalent to 24.05 EFPY. The LRA also indicates that the LSCS Unit 1 license expires at midnight on April 17, 2022.

In addition, the applicant indicated that, since the axial weld failure probability assessment for Unit 1 is not projected to remain valid through the period of extended operation, the failure probability assessment time-limited aging analysis (TLAA) for Unit 1 is dispositioned in accordance with 10 CFR 54.21(c)(1)(iii). The applicant indicated that the effects of aging on the Unit 1 reactor vessel axial welds will be managed by the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD program, which includes periodic volumetric examinations, and the Reactor Vessel Surveillance program, which manages neutron embrittlement by monitoring neutron fluence and ensuring that neutron embrittlement analyses are updated as necessary to evaluate bounding neutron fluence values.

The applicant also identified two enhancements of the Reactor Vessel Surveillance program as follows:

- Enhancement 1: Prior to the period of extended operation, the applicant will establish a monitoring limit for neutron fluence at the limiting Unit 1 axial weld (currently 39.15 EFPY) that corresponds to the axial weld failure probability of 5.02×10^{-6} per reactor year specified in the supplement to the final safety evaluation of BWRVIP-05.
- Enhancement 2: Prior to 39.15 EFPY, the applicant will complete a probabilistic axial weld failure analysis for Unit 1 that demonstrates the 60-year axial weld failure probability is no greater than 5.02×10^{-6} per reactor year.

ENCLOSURE

Issue:

The staff noted the following issues related to the Unit 1 reactor vessel axial weld failure probability analysis:

- The applicant's response did not provide a neutron fluence level ($E > 1$ MeV) that corresponds to 39.15 EFPY, up to which the applicant identified that Unit 1 reactor vessel failure frequency (also called "axial weld failure probability") is bounded by 5.02×10^{-6} per reactor year.
- It is not clear to the staff whether the updated analysis will include the confirmation the analytical results do not affect the basis for the adequacy of existing inservice inspections of the Unit 1 reactor vessel axial welds.
- It is not clear to the staff whether operating restrictions will be established to ensure that the Unit 1 reactor is operated within the neutron fluence range for which the applicant's analysis remains valid.
- It is not clear to the staff whether the applicant will submit the updated analysis for staff's review and approval sufficiently in advance of the reactor vessel fluence level exceeding the fluence range for which the applicant's analysis remains valid.

Request:

1. Provide a neutron fluence level ($E > 1$ MeV) that corresponds to 39.15 EFPY.
2. Clarify whether the program includes an enhancement that operating restrictions will be established to ensure that the Unit 1 reactor is operated within the neutron fluence range for which the analysis remains valid. If not, justify why such enhancement is not identified.
3. Clarify whether the applicant will submit an updated analysis on the Unit 1 reactor vessel axial weld failure probability for staff's review and approval sufficiently in advance of the reactor vessel fluence level exceeding the fluence range for which the applicant's analysis remains valid (e.g., submittal at least 3 years before the analysis is projected to become invalid). In addition, ensure that the applicant's program enhancements are consistent with the applicant's response.