



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

November 3, 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 13 (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](mailto: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

November 3, 2015

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Vice President, License Renewal Projects  
Exelon Generation Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

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Letter to Michael Gallagher from Jeffrey S. Mitchell dated November 03, 2015

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LASALLE COUNTY STATION, UNITS 1 AND 2 LICENSE RENEWAL  
APPLICATION – SET 13 (TAC NOS. MF5347 AND MF5346)

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**LASALLE COUNTY STATION, UNITS 1 AND 2  
LICENSE RENEWAL APPLICATION  
REQUESTS FOR ADDITIONAL INFORMATION – SET 13  
(TAC NOS. MF5347 AND MF5346)**

**RAI 4.3.3-1a**

Background:

License renewal application (LRA) Section 4.3.3 states that the location with the highest ASME cumulative usage factor (CUF) for each material within a Class 1 system that normally contacts liquid reactor coolant will be considered limiting. The applicant defined the criteria for determining a bounded location as: a) must be affected by the same transients as the analyzed location, b) must have a lower ASME CUF than the analyzed location, and c) must be made from the same material or, if of a different material, the bounded material must have a lower environmentally assisted fatigue correction factor ( $F_{en}$ ) value than the bounding material. The LRA further states that the environmental fatigue analyses will be managed by the Fatigue Monitoring program, which includes corrective actions that could result in revisions to the analyses. The LRA states that the environmental fatigue analyses will be reviewed and updated if necessary to ensure that the limiting locations have been satisfactorily evaluated for reactor water environmental effects.

In its response to RAI 4.3.3-1, by letter dated August 6, 2015, the applicant stated that the leading location bounds a location of a differing material for the Reactor Core Isolation Cooling (RCIC), Residual Heat Removal (RHR) Supply and Return, Reactor Recirculation, and Reactor Water Cleanup systems. In its response, the applicant provided its justification to selecting a stainless steel location to bound a carbon steel location within the system to monitor for the effects of environmentally-assisted fatigue (EAF). In addition to the limiting location selection criteria listed above, the applicant also justified its selection by stating that the fatigue analysis for the leading location was performed using a more rigorous methodology.

Issue:

In its response, the applicant provided Table 1 and Table 2 which contain the ASME CUF – highest location and Bounding  $F_{en}$  Multiplier values for stainless steel and carbon steel locations with the highest CUF values. The staff is unclear if the ASME CUF – highest location values represent the environmentally-adjusted CUF values. The staff is also unclear on how the Bounding  $F_{en}$  Multiplier values were calculated and why these values differ from the  $F_{en}$  values provided in LRA Tables 4.3.3-3 and 4.3.3-4.

Also, the applicant stated that for Unit 1, the Reactor Recirculation system, RHR Supply and Return system, and Reactor Water Cleanup system are subjected to “similar transients.” For Unit 2, the applicant stated that the Reactor Recirculation system and Reactor Water Cleanup system are subjected to “similar transients.” LRA Section 4.3.3 uses the term “same” when referencing transient sets. The staff is unclear if the similar transients represent the same transient set for each system.

ENCLOSURE

After selecting the limiting locations for these systems, the applicant stated that the CUF values were refined based on NUREG/CR-6909 and 60-year transient cycle projections. In Table 1 and Table 2 in the applicant's response to RAI 4.3.3-1, the applicant provided the ASME CUF values for the highest stainless steel and carbon steel locations. Because the applicant determined that the stainless steel locations were limiting, the applicant stated that the environmental fatigue evaluations were not performed on the bounded carbon steel locations. The staff needs additional information on how the applicant refined the ASME CUF values for the limiting locations to calculate the NUREG/CR-6909 60-year projected CUF values, to ensure that if the same methodology was performed on the carbon steel locations, the resulting refinement would produce an effect on the carbon steel location which is either proportional to that for the stainless steel location or provides assurance that the stainless steel location will remain bounding. The staff needs reasonable assurance that after refinement of these ASME CUF values, the stainless steel locations would remain the limiting locations.

The LRA states that the environmental fatigue analyses will be reviewed and updated if necessary to ensure that the limiting locations have been satisfactorily evaluated for reactor water environmental effects. The staff is unclear if the applicant will review only those locations that the applicant had initially determined are limiting (locations included in LRA Tables 4.3.3-1 through 4.3.3-4) or if the applicant will re-evaluate its limiting location screening determination to ensure that locations selected are still the most limiting in the system or subsystem. If the applicant is only reviewing the environmental fatigue analyses for the locations in LRA Tables 4.3.3-1 through 4.3.3-4, the staff needs additional justification on how the applicant ensures that the limiting locations have not changed, especially accounting for systems that include different materials.

Request:

1. In reference to Table 1 and Table 2 in the response to RAI 4.3.3-1:
  - a) Clarify if the "ASME CUF – highest location" values represent the environmentally-adjusted CUF values.
  - b) Clarify how the "Bounding  $F_{en}$  Multiplier" values were calculated.
2. For Unit 1, clarify if the Reactor Recirculation system, RHR Supply and Return system, and Reactor Water Cleanup system are subjected to the same set of transients. For Unit 2, clarify if the Reactor Recirculation system and Reactor Water Cleanup system are subjected to the same set of transients. If not, justify that the fatigue analyses for these systems can be evaluated together when there are discrepancies in the transient input set for the fatigue analyses.
3. When performing environmental fatigue evaluations for the selected limiting locations:
  - a) Describe how the CLB ASME CUF values in Table 1 and Table 2 were refined to achieve the 60-year NUREG/CR-6909 CUF values represented in the LRA.

- b) Justify that the methodology applied to refine the CUF values of the stainless steel locations would provide an effect on the carbon steel location which is either proportional to that for the stainless steel location or provides assurance that the stainless steel location will remain bounding.
4. When initiating corrective actions to review and update environmental fatigue analyses, clarify if the selection of limiting locations will also be evaluated and updated, as necessary. If not, justify how the applicant will ensure that the limiting locations have not changed, especially accounting for systems that include different materials. Provide any necessary updates or clarifications to the UFSAR supplement.