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

June 30, 2014

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE BYRON STATION, UNITS 1 AND 2, AND BRAIDWOOD STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION, SET 31 (TAC NOS. MF1879, MF1880, MF1881, AND MF1882)

Dear Mr. Gallagher:

By letter dated May 29, 2013, Exelon Generation Company, LLC, submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54, to renew the operating licenses NPF-37, NPF-66, NPF-72, and NPF-77 for Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2, respectively, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). 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 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 301-415-4115 or by e-mail at Lindsay.Robinson@nrc.gov.

Sincerely,

/RA/

Lindsay R. Robinson, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-454, 50-455, 50-456, and 50-457

Enclosure:
Request for Additional Information

cc w/encl: Listserv

June 30, 2014

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

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Letter to M.P. Gallagher from Lindsay R. Robinson dated June 30, 2014

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE BYRON STATION, UNITS 1 AND 2, AND BRAIDWOOD STATION, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION, SET 31 (TAC NOS. MF1879, MF1880, MF1881, AND MF1882)

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BYRON STATION, UNITS 1 AND 2
AND BRAIDWOOD STATION, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION, SET 31
(TAC NOS. MF1879, MF1880, MF1881, AND MF1882)

RAI 4.3.4-3a

Applicability:

Byron Station (Byron) and Braidwood Station (Braidwood), all units

Background:

License renewal application (LRA) Section 4.3.4 states that the Class 1 components were grouped into transient sections, which is defined as a group of sub-components or locations that experience the same transients. The LRA further states that components that reside in the same transient section can easily be compared with each other to determine the most limiting component (or leading location), which is the location with the highest cumulative usage factor (CUF_{en}) value. The differences in stresses experienced by each component in a transient section are generally the result of the material and geometry differences.

In its response to request for additional information (RAI) 4.3.4-3, by letter dated March 28, 2014, the applicant described its environmentally-assisted fatigue (EAF) screening evaluation for the equipment locations that considered different materials within a transient section. The applicant provided details of its evaluation of the reactor vessel outlet nozzle region as an example to support its methodology description. In its response, the applicant stated that the leading location for this transient section was the safe end location, which is stainless steel, because it produced the highest screening CUF_{en} greater than 1.0.

Issue:

The staff noted that within a transient section that contains components of various materials (e.g., low alloy steel, nickel alloy, stainless steel), the applicant did not provide a basis for selecting a leading location based on the highest CUF_{en} value. The staff noted that the CUF_{en} value of different materials may respond differently when the EAF is being refined in the future. In the example of the reactor vessel outlet nozzle region, the applicant did not provide sufficient justification that the stainless steel component would continue to be the leading location for components made from other materials eliminated during this screening process after the CUF_{en} has been refined for the stainless steel component. The applicant did not justify that the refinement of the higher CUF_{en} of one material would ensure the reduction of CUF_{en} values for another material within the same transient section such that the selected leading location would remain appropriate.

Request:

1. Considering that refinements in CUF_{en} values may not always be equal, especially when evaluating different materials, justify, including any assumptions, that a location made from one material can serve as the leading location for other locations with CUF_{en} values greater than 1.0 within a transient section.

ENCLOSURE

2. Identify the transient section, component, location, and material in which one material and location bound other materials and locations within a transient section.

3. Confirm that this methodology or justification in Request 1 was applied to all instances identified in Request 2. For those instances where the methodology was not used, provide the different, additional bases for the selection of the leading location for a transient section that considered components of different materials and with CUF_{en} values greater than 1.0.