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

October 28, 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 43 (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 30 days from the date of this letter. If you have any questions, please contact me at 301-415-4115 or e-mail 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

October 28, 2014

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

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Letter to M.P. Gallagher from Lindsay R. Robinson dated October 28, 2014

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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 43
(TAC NOS. MF1879, MF1880, MF1881, MF1882)

RAI 4.3.4-3b

Applicability:

Byron Station and Braidwood Station (BBS), all units

Background:

In its response to request for additional information (RAI) 4.3.4-3a, by letter dated September 11, 2014, the applicant provided its principles and bases for choosing a location made from one material to serve as the leading location for components within the same transient section that are made from different materials. In its response, the applicant stated that there are four transient sections at BBS that included components of different materials. To justify screening out components and selecting the leading location(s) to bound the other components, the applicant stated it applied bases dependent on the screening CUF_{en} values, the conservatism of the analysis method, and the range of the F_{en} potential reduction of each component and material.

Issue:

In its evaluation of the Pressurizer Transient Section, the applicant provided its justification to: (a) select the Surge Nozzle Structural Weld Overlay (SWOL) as the leading location and (b) remove the Lower Head at Heater Penetration and Upper Shell locations from consideration. The applicant stated that these eliminated components were analyzed using a more conservative methodology, therefore, more reduction in the CUF_{en} values are expected than for the Surge Nozzle SWOL. In its evaluation for the Unit 1 Replacement Steam Generator (RSG) Transient Section, the applicant also applied this same justification to eliminate the Inlet & Outlet Nozzle, Weld location. The staff is unclear how this justification would ensure that refinement of the CUF_{en} value of one material could bound the locations of different materials. The applicant did not provide sufficient justification that removing conservatism for one material would result in a proportional refinement for another material. The applicant did not demonstrate that these components would not need to be monitored by the Fatigue Monitoring program for environmentally assisted fatigue.

Also in its evaluation of the Unit 1 RSG transient section, the applicant removed the Primary Head Drain Hole from consideration. The leading location for this transient section, the Primary Head/Tubesheet Juncture, has a screening CUF_{en} value of 2.16. The screening CUF_{en} value for the Primary Head Drain Hole has a higher screening CUF_{en} value of 2.234 but was analyzed with a more conservative methodology. As part of its stress analysis ranking methodology, the applicant stated that it would only eliminate components from consideration if: (a) its screening CUF_{en} value is lower or the same and (b) its analysis method was more conservative. However, the applicant justified removing the Primary Head Drain Hole by stating that the screening CUF_{en} value for the leading location was only slightly less than the eliminated location. The applicant stated that this is not a concern because the Primary Head Drain Hole has a different analysis rank, therefore the potential reduction in the CUF_{en} value is greater. The staff is

unclear why the analysis rank difference justifies removing this component from consideration. The staff is unclear if there are other instances where the applicant removed components from consideration that had a higher screening CUF_{en} than the selected leading location.

Request:

1. For the following components, provide justification that the refinement of the leading component material analysis would result in the leading component material location bounding these component materials in the transient section:

   a. Lower Head at Heater Penetration (Pressurizer Transient Section)
   b. Upper Shell (Pressurizer Transient Section)
   c. Inlet & Outlet Nozzle, Weld (Unit 1 RSG Transient Section)

2. For the Primary Head Drain Hole (Unit 1 RSG Transient Section), provide justification why the component was removed from consideration when the screening CUF_{en} was higher than the screening CUF_{en} value for the retained leading location.

3. Identify any additional instances where the screening CUF_{en} value for a component that was removed from consideration was higher than the screening CUF_{en} value of the retained leading location within the transient section. Justify removing these locations from consideration.