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

June 23, 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 33 (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 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

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Vice President, License Renewal Projects
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Letter to M.P. Gallagher from Lindsay R. Robinson dated June 23, 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 33
(TAC NOS. MF1879, MF1880, MF1881, AND MF1882)

RAI B.2.1.28-3b

Applicability:

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

Background:

1. The response to request for additional information (RAI) B.2.1.28-3a, dated May 15, 2014, stated that soil corrosion probes will not necessarily be installed at each cathodic protection survey test point; but rather, the soil corrosion probe assemblies will most often be installed away from existing cathodic protection test points. The response also stated that:
    - Selection of soil corrosion probe locations and utilization of the data will be subject to assistance in selection of the location(s) by National Association of Corrosion Engineers (NACE) qualified cathodic protection experts.
    - "[g]enerally, both the soil corrosion probes and the permanent reference electrode are installed below-grade and in close proximity to the buried piping of interest."
    - "[i]n such situations, other adjacent convention test points exhibiting values less negative than -850mV could be evaluated, as applicable, in accordance with the criteria described above."
    - A NACE qualified cathodic protection expert will evaluate the difference in the respective locations between the soil corrosion probes and the existing test point to determine whether the difference in the relative data could be reasonably attributed to other significant site features (e.g., exposed large surface area tank bottoms, heavily congested areas of other buried piping, very large diameter pipes).
2. The response to RAI B.2.1.28-3a stated that soil corrosion probe data will only be used in locations where in-scope buried piping has been volumetrically examined.

Issue:

1. The staff noted that:

    a. NACE offers four levels of qualification consisting of cathodic protection tester, cathodic protection technician, cathodic protection technologist, and cathodic protection specialist (NACE Courses CP 1 through CP 4). It is not clear to the staff what level of qualification will be required for individuals who determine locations of soil corrosion probes and the impact of localized site features.

b. Given the use of the term “generally” in relation to the location of the installation of soil corrosion probes, it is not clear to the staff whether soil corrosion probes will be installed in close proximity to the buried piping of interest.

c. Based on its review of the response to RAI B.2.1.28-3a, the staff understands that a soil corrosion probe could be used to verify that effective cathodic protection has been provided to pipe segment locations remote from the probe. The staff has the following concerns:

   i. A NACE qualified cathodic protection expert will evaluate the impact of significant site features as they could affect cathodic protection effectiveness. However, the response did not state the factors that will be considered when evaluating the impact of local site features.

   ii. The response did not state how local soil conditions (e.g., moisture content, pH, and resistivity) could be impactful. For example, if the soil in the vicinity of the soil corrosion probe were less corrosive than at other pipe segment locations, the soil corrosion probe could under-predict the corrosion rate at other points of interest along the pipe length.

2. The staff noted that license renewal application (LRA) Section B.2.1.28 was not revised to state that soil corrosion probe data will only be used in locations where in-scope buried piping has been volumetrically examined in conjunction with installation of the probes.

Request:

1. State:

   a. The level of NACE cathodic protection qualification of the individuals involved in selecting soil corrosion probe locations and for determining the impact of localized site features.

   b. Whether soil corrosion probes will be installed in close proximity to the buried piping of interest, or state the basis for its location if installed remotely from the pipe of interest.

   c. What factors will be considered when evaluating local site features including examples of how the factors would be applied.

   d. How local soil conditions will be factored into use of the soil corrosion probe data.

   In addition, make any applicable changes to LRA Section B.2.1.28.

2. Revise the Buried and Underground Piping program (LRA Section B.2.1.28) to state that soil corrosion probe data will only be used in locations where in-scope buried piping has been volumetrically examined in conjunction with installation of the probes.