



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

January 23, 2014

LICENSEE: Exelon Generation Company, LLC.

FACILITY: Byron Station, Units 1 and 2  
Braidwood Station, Units 1 and 2

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON NOVEMBER 12, 2013, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND EXELON GENERATION COMPANY, LLC, CONCERNING DRAFT REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE BYRON STATION AND BRAIDWOOD STATION, LICENSE RENEWAL APPLICATION, SET 6 (TAC NOS. MF1879, MF1880, MF1881, MF1882)

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Exelon Generation Company, LLC (Exelon or the applicant), held a telephone conference call on November 12, 2013, to discuss and clarify the staff's draft requests for additional information (D-RAIs), Set 6, concerning the Byron Station, Units 1 and 2, and the Braidwood Station, Units 1 and 2, license renewal application. The telephone conference call was useful in clarifying the intent of the staff's D-RAIs.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the D-RAIs discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

A handwritten signature in black ink, appearing to read "Lindsay Robinson", is positioned above the typed name.

Lindsay 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

Enclosures:

1. List of Participants
2. List of Draft Requests for Additional Information

cc w/encls: Listserv

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TELEPHONE CONFERENCE CALL  
BYRON STATION, UNITS 1 AND 2, AND BRAIDWOOD STATION, UNITS 1 AND 2  
LICENSE RENEWAL APPLICATION

LIST OF PARTICIPANTS  
November 12, 2013

**PARTICIPANTS**

Lindsay Robinson  
Cliff Doult  
Rui Li  
John Hufnagel  
John Hilditch  
Deb Spamer

**AFFILIATIONS**

U.S. Nuclear Regulatory Commission (NRC)  
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NRC  
Exelon Generation Company, LLC (Exelon)  
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Exelon

DRAFT REQUESTS FOR ADDITIONAL INFORMATION  
BYRON STATION, UNITS 1 AND 2, AND BRAIDWOOD STATION, UNITS 1 AND 2  
LICENSE RENEWAL APPLICATION

November 12, 2013

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Exelon Generation Company, LLC (Exelon or the applicant), held a telephone conference call on November 12, 2013, to discuss and clarify the following draft requests for additional information (D-RAIs), SET 6, concerning the Byron Station, Units 1 and 2, and the Braidwood Station, Units 1 and 2, license renewal application (LRA).

**D-RAI B.2.1.38-1**

**Applicability:**

Byron and Braidwood Stations, all units.

**Background:**

The applicant stated that license renewal application (LRA) aging management program (AMP) B.2.1.38, "Insulation Material For Electrical Cables and Connections Not Subject To 10 CFR 50.49 Environmental Qualification Requirements Used In Instrumentation Circuits", is a new program that is consistent with the Generic Aging Lessons Learned (GALL) Report AMP XI. E2, "Insulation Material For Electrical Cables and Connections Not Subject To 10 CFR 50.49 Environmental Qualification Requirements Used In Instrumentation Circuits."

The "scope of program" program element of the LRA AMP states that the in-scope cables and connections that are used in instrumentation circuits with sensitive, high voltage, low level current signals, which are not part of the EQ program, are within the scope of this program. The applicant further stated that portions of the radiation monitoring system and portions of the reactor protection system are in scope of the program. For Braidwood, the applicant stated that source range/intermediate range neutron monitoring circuits (SR/IR) are in-scope of this program. For Byron, the SR and IR are not in scope of the program because they are managed by the Environmental Qualification of Electric Components program. Power range neutron monitoring circuits (PR) are not stated in scope for any LRA AMPs.

The GALL Report AMP recommends that this AMP applies to electrical cables and connections (cable system) used in circuits with sensitive, high voltage, low-level current signals, such as radiation monitoring and nuclear instrumentation, that are subject to aging management review and installed in adverse localized environments caused by temperature, radiation, or moisture.

**Issue:**

The applicant did not identify power range neutron monitoring circuits as in scope of this AMP for both Byron and Braidwood or explain why these circuits are not in scope of this program.

ENCLOSURE 2

Request:

Explain why power range neutron monitoring circuits are not in scope of AMP B.2.1.38 for both Byron and Braidwood.

**Discussion:** The applicant noted minor grammatical errors in the Background discussion and identified an incorrect reference. The staff agreed to revise the Background as indicated. The revised question will be sent as a formal RAI titled "RAI B.2.1.38-1."

**D-RAI B.2.1.38-2**

Applicability:

Byron and Braidwood Stations, all units.

Background:

The applicant stated that LRA AMP B.2.1.38, "Insulation Material For Electrical Cables and Connections Not Subject To 10 CFR 50.49 Environmental Qualification Requirements Used In Instrumentation Circuits", is a new program that is consistent with GALL Report AMP XI.E2, "Insulation Material For Electrical Cables and Connections Not Subject To 10 CFR 50.49 Environmental Qualification Requirements Used In Instrumentation Circuits."

The "detection of aging effects" program element of LRA AMP B.2.1.38 states that cable system testing will be credited as an alternative approach to the review of surveillance or calibration results and will be performed using a proven, industry accepted, cable system test for detecting deterioration of the insulation system.

The GALL Report AMP recommends that cable testing be conducted when the calibration or surveillance program does not include the cabling system in the testing circuit. A proven cable system test for detecting deterioration of the insulation system (such as insulation resistance tests, time domain reflectometry tests, or other testing judged to be effective in determining cable system insulation as justified in the application) should be performed.

Issue:

The GALL Report recommends cable system testing when the calibration or surveillance program does not include the cable system. The applicant's AMP could allow reviewing of calibration results even though the cable system is not included in the calibration or surveillance program. The applicant's AMP states that a proven, industry accepted, cable system test for detecting deterioration for the insulation will be performed. However, the applicant does not identify the type of test that can be used. In the absence of these testing techniques, the staff cannot determine the consistency of the "detection of aging effects" program element to the GALL Report.

Request:

Clarify the cable system test requirements applicability. Also, identify the testing techniques to be used for detecting deterioration of the insulation system for nuclear instrumentation circuits.

**Discussion:** The applicant noted a minor grammatical error in the Background discussion and identified an incorrect reference. The staff agreed to revise the Background as indicated. The revised question will be sent as a formal RAI titled "RAI B.2.1.38-2."

**D-RAI B.2.1.38-3**

**Applicability:**

Byron and Braidwood Stations, all units.

**Background:**

The applicant stated that LRA AMP B.2.1.38, "Insulation Material For Electrical Cables and Connections Not Subject To 10 CFR 50.49 Environmental Qualification Requirements Used In Instrumentation Circuits", is a new program that is consistent with GALL Report AMP XI.E2, "Insulation Material For Electrical Cables and Connections Not Subject To 10 CFR 50.49 Environmental Qualification Requirements Used In Instrumentation Circuits."

Standard Review Plan (SRP) Table 3.0-1, FSAR Supplement for Aging Management of Applicable Systems under AMP XI.E2, states that in cases where cables are not part of a calibration or surveillance program, a proven test (such as insulation resistance tests, time domain reflectometry tests, or other test judged to be effective as justified in the application) for detecting deterioration of insulation system are performed. LRA Section A.2.1.38 states that a proven cable test is performed in cases where cables are not included as part of the calibration or surveillance program testing circuit.

**Issue:**

The applicant does not identify the type of tests (e.g., such as insulation resistance tests, time domain reflectometry tests, or other test judged to be effective as justified in the application) that can be used in the updated final safety analysis report (UFSAR) Supplement. In the absence of these testing techniques, the UFSAR Supplement is inconsistent with GALL Report AMP XI.E2 and SRP Table 3.0-1 which provide guidance on the specific tests.

**Request:**

Provide the testing techniques to be used for detecting deterioration of the instrumentation circuit insulation system.

**Discussion:** The applicant noted a minor grammatical error in the Background discussion and identified an incorrect reference. The staff agreed to revise the Background as indicated. The revised question will be sent as a formal RAI titled "RAI B.2.1.38-3."

**D-RAI B.2.1.41-1**

Applicability:

Byron only.

Background:

The applicant stated that LRA AMP B.2.1.41, "Fuse Holders," is a new condition monitoring program that is consistent with the GALL Report AMP XI.E5, "Fuse Holders."

The "acceptance criteria" program element of the applicant's site AMP Basis Document states the thermography program establishes acceptance criteria for thermography testing. When thermography is not practical, other acceptance tests are implemented, such as connection resistance measurement. The AMP Basis Document states: "Acceptance criteria are set in accordance with good practice."

The GALL Report AMP recommends the acceptance criteria for each test are defined by the specific type of test performed and the specific type of fuse holder tested. The temperature of the metallic clamp of the fuse holder needs to be below the maximum allowed temperature for the application when thermography is used; otherwise, a low resistance value appropriate for the application when resistance measurement is used.

Issue:

"Acceptance criteria set in accordance with good practice" is unclear. An acceptance criterion consistent with the GALL Report needs to be established in order for the applicant to take corrective action. Acceptance criteria ensure that the intended function of the fuse holders can be maintained consistent with the current license basis.

Request:

Explain why the establishment of AMP B.2.1.41 "acceptance criteria as accordance with good practice" is consistent with the GALL Report and not an enhancement or exception.

**Discussion:** The applicant identified an incorrect reference in the Background and Request discussion. The staff agreed that the correct reference was the site's Basis Document vice the originally referenced LRA. The staff agreed to revise the Background and Request as indicated. The revised question will be sent as a formal RAI titled "RAI B.2.1.41-1."