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

April 25, 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 APRIL 9, 2014, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND EXELON GENERATION COMPANY, LLC CONCERNING DRAFT REQUEST FOR ADDITIONAL INFORMATION, SET 23, PERTAINING TO THE BYRON STATION AND BRAIDWOOD STATION, LICENSE RENEWAL APPLICATION (TAC NOS. MF1879, MF1880, MF1881, AND 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 April 9, 2014, to discuss and clarify the staff's draft request for additional information (DRAI), Set 23, 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 DRAIs.

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

The applicant had an opportunity to comment on this summary.

/RA/ for

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 Request for Additional Information

cc w/encls: Listserv

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/RA Richard Plasse for/
Lindsay Robinson, Project Manager
Projects Branch 1
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DATE	4/22/14	4/24/14	4/25/14	4/25/14

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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
April 9, 2014

PARTICIPANTS	AFFILIATIONS
Lindsay Robinson	U.S. Nuclear Regulatory Commission (NRC)
John Wise	NRC
George Thomas	NRC
Gautam Banerjee	NRC
Chris Wilson	Exelon Generating Company, LLC (Exelon)
Don Warfel	Exelon
Al Fulvio	Exelon
Albert Piha	Exelon
John Hilditch	Exelon
Jim Annett	Exelon
Paul Cervenka	Exelon
Phil O'Donnell	Exelon
Dylan Cimock	Exelon
Casey Muggleston	Exelon
Don Brindle	Exelon
Ralph Wolen	Exelon

ENCLOSURE 1

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

April 9, 2014

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 April 9, 2014, to discuss and clarify the following draft request for additional information (DRAI), Set 23, concerning the Byron Station, Units 1 and 2, and the Braidwood Station, Units 1 and 2, license renewal application (LRA).

DRAI 3.5.2.2.2.2-1

Applicability:

Byron and Braidwood

Background:

SRP-LR Section 3.5.2.2.2.2, "Reduction of Strength and Modulus due to Elevated Temperature," recommends further evaluation for any concrete elements of safety-related structures and other concrete structures that exceed temperature limits of 66°C (150°F) for general areas and 93°C (200°F) for local areas. The SRP-LR also states that higher temperatures may be allowed if tests or calculations are provided to evaluate the reduction in strength and modulus of elasticity and these reductions are applied to the design calculations.

Issue:

LRA Section 3.5.2.2.2.2 states, in part, that:

> High energy line penetrations have been designed to limit surrounding concrete surfaces to temperatures less than 200°F, except for the special pipe whip restraints that are located around each feedwater and main steam pipe as it passes through the concrete wall separating the main steam isolation valve room from the main steam tunnel. The design documents for the concrete at these pipe whip restraints include an evaluation for elevated temperatures, which determined that the concrete temperature up to 300°F at the local areas of the pipes was acceptable.

LRA Table 3.5-1, item 3.5.1-48, which references LRA section 3.5.2.2.2.2, states that the aging effect and mechanism of reduction of concrete strength and modulus due to elevated temperature is not applicable to Byron and Braidwood. It further states that the main steam (MS) tunnel and main steam isolation valve (MSIV) room walls have been evaluated and found acceptable for temperatures up to 300°F. It is not clear if the elevated temperatures experienced by the concrete walls of the MS tunnel and the MSIV room near the special pipe whip restraints remain below the 300°F used in the evaluation and why the AMR line item would not be applicable to these MSIV room and MS tunnel concrete walls. The staff reviewed the Byron and Braidwood updated final safety analyses report (UFSAR), specifically Section 3.8.4, and did not find any discussion of an engineering evaluation that accounted for possible reductions in concrete strength or modulus of elasticity due to elevated temperatures.

Request:

1. Provide the maximum temperature that is experienced by the concrete walls of the MSIV room and MS tunnel near the special feedwater and main steam pipe whip restraints.

2. Provide a discussion of the engineering evaluation that was conducted to demonstrate the concrete would be able to perform its intended functions while being exposed to elevated temperatures above the GALL Report recommended limits. Include any reductions in strength or modulus of elasticity that were applied to the design calculations or any test results used in the evaluation.

3. Justify why AMR line item 3.5.1-48 is not applicable to the MSIV room and MS tunnel concrete walls that experience elevated temperatures above 200°F and the required evaluation.

Discussion: The applicant requested clarity on the staff's concern. The applicant requested that requests 2 and 3 be made conditional based on the response to request 1. The staff agreed to make the change and will preface requests 2 and 3 with the following conditional statement, "If the maximum temperature experienced is greater than 200°F." This question will be sent as part of the formal request titled: "RAI 3.5.2.2.2.2-1."

DRAI 3.5.2-6

Applicability:

Byron and Braidwood

Background:

Item 24 located in SRP-LR Table 3.5-1references the GALL Report item II.A1.CP-100. The AMP recommended for item II.A1.CP-100 in the GALL Report is XI.S2, "ASME Section XI, Subsection IWL," or XI.S6, "Structures Monitoring."

The GALL Report AMP XI.S2, "ASME Section XI, Subsection IWL," Program Description states that 10 CFR 50.55a imposes the examination requirements of ASME Code, Section XI, Subsection IWL, for Class CC reinforced and prestressed concrete containments. The GALL Report AMP "Scope of Program" (Program Element 1) states that the components within the scope of Subsection IWL are reinforced concrete and unbonded post-tensioning systems of Class CC containments. Subsection IWL exempts from examination portions of the concrete containment that are inaccessible such as concrete covered by liner, foundation material, or backfill or obstructed by adjacent structures or other components. However, 10 CFR 50.55a(b)(2)(viii) specifies additional requirements for inaccessible areas that requires the licensee to evaluate the acceptability of concrete in inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation of inaccessible areas.

Issue:

The corresponding LRA Table 3.5.1, Item 3.5.1-24, states in the "Discussion" column that this item is consistent with the GALL Report and cites the Structures Monitoring (LRA Section B.2.1.34) program as the AMP for managing this aging effect and mechanism for inaccessible

areas of containment concrete exposed to groundwater and soil environments, including groundwater chemistry. In the context of the LRA, the description for Item II.A1.CP-100 in the GALL Report does include containment pressure-resisting boundary concrete components in inaccessible areas above grade in an "Air – Outdoor" environment as well as below-grade areas in a "Groundwater/Soil" environment. The applicant has not addressed inaccessible components in the "Air – Outdoor" environment for this AMR line item. Further, the ASME Section XI, Subsection IWL program, mandated by the GALL Report and 10 CFR 50.55a for concrete containment pressure-resisting boundary components in both accessible and inaccessible areas, is not included as an applicable AMP for AMR line item 3.5.1-24 and the corresponding line items in LRA Table 3.5.2-4.

Request:

With regard to AMR line item 3.5.1-24 in LRA Table 3.5-1 that corresponds to Item II.A1.CP-100 in the GALL Report, provide the technical basis to justify why the ASME Code, Section XI, Subsection IWL program, recommended by the GALL Report and required by 10 CFR 50.55a for concrete containment pressure-resisting boundary components in both accessible and inaccessible areas, is not included as an applicable AMP for the line item and corresponding line items in LRA Table 3.5.2-4. Update the LRA, as necessary, based on the response to this request.

Discussion: The applicant requested clarity on the staff's concern. No edits were proposed. The applicant mentioned that this question is closely related to another question listed in Set 24 and asked that it be removed from Set 23 and added to Set 24. The staff agreed to remove this question from Set 23 and add it to Set 24.

DRAI B.2.1.12-1a

Applicability:

Byron and Braidwood

Background:

The response to RAI B.2.1.12-1, dated February 27, 2014, stated that existing station procedures require a general visual inspection of internal surfaces of components within the scope of the Closed Treated Water Systems program when the systems are opened. In addition, the personnel performing the inspections are qualified to Exelon job qualifications and in accordance with the Institute of Nuclear Power Operations (INPO) National Academy for Nuclear Training accredited training program.

The staff notes that, similar to the Closed Treated Water Systems program, the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program uses opportunistic visual inspections to monitor aging effects of component internal surfaces. However, during its AMP audit, the staff noted that the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components program does not rely on the use of existing station procedures to identify age-related degradation. Rather, a new procedure was proposed to inspect for evidence of loss of material, leakage, cracking, and reduction of heat transfer when the internal surfaces of metallic components were made accessible.

Issue:

It is unclear to the staff how the existing station opportunistic inspections will be capable of detecting the specific applicable aging effects of components internal surfaces in the Closed Treated Water Systems program. The RAI response did not provide sufficient information regarding:

1. The details within the INPO training program and Exelon job qualifications that demonstrate that personnel performing the opportunistic inspections are qualified to identify the applicable aging effects, and

2. The details within the existing station procedures that demonstrate that, when piping internal surfaces are made accessible, personnel will be inspecting for parameters that are capable of detecting the presence and extent of aging effects.

Request:

1. State the details within the INPO training program and Exelon job qualifications that demonstrate that personnel performing the opportunistic inspections are qualified to identify loss of material due to general, pitting, crevice, and galvanic corrosion; and cracking due to stress corrosion cracking.

2. State the process-based (in lieu of knowledge-based) controls that exist in station procedures that will ensure that, when component internal surfaces are made accessible, personnel will be inspecting for parameters that are capable of detecting the presence and extent of loss of material due to general, pitting, crevice, and galvanic corrosion; and cracking due to stress corrosion cracking (e.g., prejob brief details, checklists within the work order). Alternatively, propose a new procedure that specifically addresses these controls.

Discussion: The applicant requested clarity on the staff's concern. The applicant requested that the second question either be merged with the first question or be made conditional on the first question. The staff will have to conduct additional review to evaluate the applicant's request. Therefore, this question will be removed from Set 23 and added to Set 24.

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