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

June 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 JUNE 4, 2014, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND EXELON GENERATION COMPANY, LLC CONCERNING DRAFT REQUEST FOR ADDITIONAL INFORMATION, SET 31, PERTAINING TO THE BYRON STATION AND BRAIDWOOD STATION, LICENSE RENEWAL APPLICATION (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 June 4, 2014, to discuss and clarify the staff's draft request for additional information (DRAI), Set 31, 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/

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

LIST OF PARTICIPANTS
June 4, 2014

PARTICIPANTS	**AFFILIATIONS**
Lindsay Robinson	U.S. Nuclear Regulatory Commission (NRC)
Mark Yoo	NRC
On Yee	NRC
John Hufnagel	Exelon Generating Company, LLC (Exelon)
Al Fulvio	Exelon
Don Warfel	Exelon
Albert Piha	Exelon
Tom Quintenz	Exelon
Don Brindle	Exelon
Ralph Wolen	Exelon
Charles Meyer	Westinghouse
Mark Gray	Westinghouse
Thomas Meikle	Westinghouse

ENCLOSURE 1

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

June 4, 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 June 4, 2014, to discuss and clarify the following draft request for additional information (DRAI), Set 31, concerning the Byron Station, Units 1 and 2, and the Braidwood Station, Units 1 and 2, license renewal application (LRA).

DRAI 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 stated that, within a transient section, all locations with materials other than nickel alloy were compared using the same fatigue curves from the American Society of Mechanical Engineers (ASME) Code Section III, Appendix I for each respective material. The applicant further stated that "for nickel alloy locations, the effects of the NUREG/CR-6909 fatigue curve were considered when comparing to other locations in a transient section."~~

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 a comparison of Environmentally Adjusted Cumulative Usage Factor (CUF_{en}) values calculated based on non-ASME and ASME fatigue curves would not be a straight comparison and would require additional consideration and evaluation in order to compare them on an equivalent basis. It is not clear to the staff how the applicant justified that the CUF_{en} values for nickel alloy were compared to the CUF_{en} values for other materials within a transient section on a valid and meaningful basis for Byron and Braidwood, Units 1 and 2.~~

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:

~~Describe and justify that the comparison of CUF_{en} values calculated based on ASME Code Section III, Appendix I, and non-ASME fatigue curves was evaluated and considered on an equivalent basis.~~

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.

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.

Discussion: The applicant requested clarification of the request. Following the discussion with the applicant, the staff revised the original draft RAI to focus the issue on the applicant's screening process for comparison of environmentally adjusted CUF for components of different materials within a transient section. The staff requested additional information concerning the applicant's justification to determine that one material within a transient section can bound other materials in the same transient section. The staff also requested that the applicant provide additional examples, if any, of screening components locations of different materials within a transient section to sufficiently support its methodology and justification. Deleted information is annotated by strikethrough, and additions are annotated by underline. This question will be sent as a formal request titled: "RAI 4.3.4-3a."