



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

January 30, 2019

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO)
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2, AND BYRON STATION, UNIT NOS. 1 AND 2 – SUPPLEMENTAL INFORMATION NEEDED FOR ACCEPTANCE OF REQUESTED LICENSING ACTION REGARDING REVISION OF TECHNICAL SPECIFICATIONS TO ADOPT RISK INFORMED COMPLETION TIMES (EPID L-2019-LLA-0757)

Dear Mr. Hanson:

By letter dated December 13, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18352B063), Exelon Generation Company, LLC (Exelon, the licensee) submitted a license amendment request (LAR) for Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2. The proposed LAR would revise technical specifications to adopt Technical Specification Task Force (TSTF)-505, Revision 2, "Provide Risk-Informed Extended Completion Times – RITSTF [risk informed technical specification task force] Initiative 4b," dated July 2, 2018 (ADAMS Accession No. ML 18183A493). The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of this amendment request. The acceptance review was performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the application has any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plant.

Consistent with Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), an amendment to the license (including the technical specifications) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal address the design and operating characteristics, unusual or novel design features, and principal safety considerations.

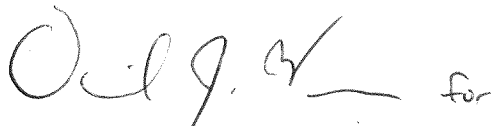
Based on the results of the NRC staff initial review of your application, the staff concluded that the information delineated in the enclosure to this letter is necessary to enable the staff to make an independent assessment regarding the acceptability of the proposed amendment request in terms of regulatory requirements and the protection of public health and safety and the environment.

In order to make the application complete, the NRC staff requests that Exelon supplement the application to address the information requested in the enclosure by February 15, 2019. This will enable the NRC staff to begin its detailed technical review. If the information responsive to the staff's request is not received by the above date, the application will not be accepted for review pursuant to 10 CFR 2.101, and the NRC will cease its review activities associated with the application. If the application is subsequently accepted for review, you will be advised of any further information needed to support the staff's detailed technical review by separate correspondence.

The information requested and associated time frame in this letter were discussed with David Helker, Ryan Sprengel, and other members of your staff on January 29, 2019.

If you have any questions, please contact the Braidwood and Byron Project Manager, Joel Wiebe, at (301) 415-6606 or Joel.Wiebe@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel S. Wiebe", followed by the word "for" in a smaller, cursive script.

Joel S. Wiebe, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-454, 50-455, 50-456 and 50-457

Enclosure:
As stated

cc: Listserv

SUPPLEMENTAL INFORMATION NEEDED FOR
LICENSE AMENDMENT REQUEST REGARDING REVISION OF TECHNICAL
SPECIFICATIONS TO ADOPT RISK INFORMED COMPLETION TIMES

EXELON GENERATION COMPANY, LLC

BRAIDWOOD STATION, UNITS 1 AND 2,

BYRON STATION, UNIT NOS. 1 AND 2

By letter dated December 13, 2018, Exelon Generation Company, LLC (Exelon) submitted license amendment request (LAR) to amend the technical specifications (TS) for Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2. The proposed amendments would modify TS requirements to permit the use of risk-informed completion times (RICTs) in accordance with the Technical Specifications Task Force (TSTF)-505, Revision 2, "Provide Risk-Informed Extended Completion Times – RITSTF [risk-informed TSTF] Initiative 4b" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18183A493). The U.S. Nuclear Regulatory Commission (NRC) staff transmitted the final revised model safety evaluation (SE) for TSTF-505, Revision 2 (ADAMS Accession No. ML18269A041), on November 21, 2018. This SE approved the TSTF-prepared Revision 2 of TSTF-505 submitted on July 2, 2018 (ADAMS Accession No. ML18183A493).

The NRC staff performed an acceptance review of the LARs in accordance with the Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC 109, Revision 2, "Acceptance Review Procedures," dated January 16, 2017 (ADAMS Accession No. ML16144A521), and determined that the application is unacceptable for review with opportunity to supplement because it is missing a significant analysis and, therefore, is lacking completeness of scope. The regulatory basis for the NRC staff's determination and the specific missing analysis items are described below.

Regulatory Basis

This LAR would modify TS requirements to permit the use of RICTs in accordance with TSTF-505, Revision 2.

LAR Attachment 1, Section 1, states:

The methodology for using the risk-informed completion time (RICT) program is described in Nuclear Energy Institute (NEI) 06-09-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines, Revision 0, which was approved by the NRC on May 17, 2007 [ADAMS Accession No. ML071200238]. Adherence to NEI 06-09-A is required by the RICT program.

The NEI Topical Report (TR) 06-09-A (ADAMS Package Accession No. ML122860402), provides guidance for implementation of a generic TS improvement that establishes a risk management approach for voluntary extensions of completion times for certain limiting condition for operation (LCOs). The NRC staff's SE, dated May 17, 2007 (ADAMS Accession No. ML071200238), found the guidance in NEI 06-09-A, to be acceptable, with clarifying NRC

Enclosure

staff positions, limitations, and conditions. The NEI issued NEI 06-09-A by including the NRC staff's SE in the front of the NEI 06-09 document, but not incorporating the NRC staff positions, limitations, and conditions into the guidance described in the document. Accordingly, NEI 06-09-A could be acceptable for referencing by licensees proposing to amend their TSs to implement RMTS when the NRC staff positions, limitations, and conditions described in the NRC staff's SE dated May 17, 2007, are met.

Limitation and Condition 3 in the NRC staff's SE on NEI 06-09 dated May 17, 2007 states:

The LAR will provide a discussion of the results of peer reviews and self-assessments conducted for the plant-specific PRA models which support the RMTS, including the resolution or disposition of any identified deficiencies (i.e., findings and observations from peer reviews). This will include a comparison of the requirements of RG [Regulatory Guide] 1.200 using the elements of ASME [American Society of Mechanical Engineers] RA-Sb-2005 for capability Category II for internal events PRA models, and for other models for which RG 1.200 endorsed standards exist. If additional standards have been endorsed by revision to RG 1.200, the LAR will also provide similar information for those PRA models used to support the RMTS program.

RG 1.200, Revision 2, was issued in March 2009 (ADAMS Accession No. ML090410014) and endorsed with comments and limitations, the ASME/ANS (ASME/American Nuclear Society) probabilistic risk analysis (PRA) Standard ASME/ANS RA-Sa-2009, "Addenda to ASME/ANS RA S 2008, Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications."

1. Fire PRA supporting requirements that might have been assigned a Capability Category I without any Facts and Observations

LAR Enclosure 2, Section 4, states that a full-scope peer review of the Braidwood and Byron fire PRAs was performed in October 2015, and June 2015, using the NEI 07-12 Fire PRA peer review process, respectively. NEI 07-12 states that, "[i]f the utility chooses to be reviewed against CC [Capability Category] I for a given SR [supporting requirement], an F&O [fact and observation] need not be written for those SRs if assessed as CC I."

RG 1.200, Revision 2, placed internal fires into the internal hazard category, and endorsed ASME/ANS RS-Sa-2009 Part 4, "Technical and Peer Review Requirements for At-Power Internal Fires," with comments and limitations.

Therefore, consistent with RG 1.200, Revision 2, and the NRC staff's SE on NEI 06-09, which describe that a LAR should include a comparison of plant-specific risk models against CC II of the ASME/ANS PRA Standard, provide the following:

- i. A statement confirming that the Braidwood and Byron Fire PRAs used to support this LAR were peer-reviewed against ASME/ANS PRA Standard CC II SRs, and
- ii. A description of any fire SRs that were assigned a CC I (or not met), but were not provided with an associated peer review F&O, as permitted by NEI 07-12. For each SR assigned only a CC I (or a not met) provide a description of why the SR was not assigned a CC II and disposition the impact of not meeting CC II on this application.

2. Additional justification required by TSTF-505, Revision 2, Table 1

Table 1, "Conditions Requiring Additional Technical Justification," of TSTF-505 Revision 2 (ADAMS Accession No. ML18183A493) contains a list of required actions that may be proposed for inclusion in the RICT program, but requires additional technical justification to be provided by the licensee.

The following six LCOs are proposed to be included in the scope of the RICT program, but are identified in Table 1 as requiring additional justification:

Condition 3.3.1.D.1 "One Power Range Neutron Flux – High channel inoperable"

Condition 3.3.1.P.1 "One [Reactor Trip Breaker] RTB train inoperable"

Condition 3.3.5.B.1, Loss of Power Diesel Generator Start Instrumentation, "One or more functions with two channels on one or more buses inoperable" (additional staff observation: note 7 from Enclosure 1 is missing)

Condition 3.6.2.C.3 "One or more containment air locks inoperable for reasons other than Condition A or B"

Condition 3.7.2.F.1 "One [Main Steam Isolation Valve] MSIV inoperable in MODE 1"

Condition 3.7.4.B.1 "Two or more [Steam Generator] SG [Power Operated Relief Valves] PORV lines inoperable"

Address the following:

For each of the condition listed above, provide the justification requested by TSTF-505 Revision 2, Table 1, which includes, among others, justification that the specified LCO condition is not a condition in which all required trains or subsystems of a TS required system are inoperable.

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*via e-mail

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| OFFICE | NRR/DORL/LPL3/PM | NRR/DORL/LPL3/LA | NRR/DRA/APLA/BC(A) |
| NAME | JWiebe | SRohrer | MWenzel* |
| DATE | 1/ 30 /19 | 1/ 24 /19 | 1/ 17 /19 |
| OFFICE | NRR/DORL/LPL3/BC | NRR/DORL/LPL3/PM | |
| NAME | DWrona | JWiebe (DWrona for) | |
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