



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

March 14, 2016

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

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 - STAFF
REVIEW OF HIGH FREQUENCY CONFIRMATION ASSOCIATED WITH
REEVALUATED SEISMIC HAZARD IN RESPONSE TO MARCH 12, 2012,
50.54(f) REQUEST FOR INFORMATION

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (NRC) is issuing this letter to inform Exelon Generation, LLC (Exelon, the licensee) of the NRC staff's review of the high frequency confirmation letter for Quad Cities Nuclear Power Station, Units 1 and 2 (Quad Cities) and conclusion that the licensee's assessment was performed consistent with the guidance.

BACKGROUND

By letter dated March 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12053A340), the U.S. Nuclear Regulatory Commission (NRC) issued a request for information pursuant to Title 10 of the *Code of Federal Regulations* Part 50, Section 50.54(f) (hereafter referred to as the 50.54(f) letter). The request was issued as part of implementing lessons-learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 1 to the 50.54(f) letter requested that licensees reevaluate seismic hazards at their sites using present-day methodologies and guidance. Enclosure 1, Item 4, of the 50.54(f) letter requested that licensees perform a comparison of the ground motion response spectrum (GMRS) and safe shutdown earthquake (SSE); and if the GMRS exceeds the SSE only at higher frequencies, information related to the functionality of high frequency sensitive structures, systems and components (SSCs) is requested. Attachment 1, Step 3 of the March 12, 2012, 50.54(f) letter further clarified that licensees with high frequency exceedance should provide a confirmation that SSCs, which may be affected by high-frequency ground motion, will maintain their functions important to safety.

By letter dated July 30, 2015 (ADAMS Accession No. ML15223A100), the Nuclear Energy Institute submitted an Electric Power Research Institute (EPRI) report entitled, High Frequency Program: Application Guidance for Functional Confirmation and Fragility Evaluation (EPRI 3002004396) for NRC review and endorsement. The NRC endorsed the guidance by letter dated September 17, 2015 (ADAMS Accession No. ML15218A569), as an acceptable method

for licensees to use, in addition to the SPID guidance, when responding to NRC Requested Information Item (4) in Enclosure 1 of the 50.54(f) letter.

As stated in the NRC staff assessment for Quad Cities dated February 10, 2016 (ADAMS Accession No. ML15309A493), and discussed with your staff on December 9, 2015, Quad Cities was expected to complete a high frequency confirmation to address the exceedance range above the plant licensing and design bases.

REVIEW OF LICENSEE HIGH FREQUENCY CAPACITY CONFIRMATION

By letter dated February 19, 2016 (ADAMS Accession No. ML16050A413), Exelon submitted the limited exceedance high frequency confirmation for Quad Cities. The NRC staff review confirmed that GMRS exceedance above the current design-basis is on the order of 10 percent or less of the area under the SSE curve over the frequency range of exceedance.

Specifically, the NRC staff confirmed that Quad Cities met the 3.1.2 "Limited High Frequency Exceedance Screening" criterion described in EPRI Report 3002004396. For the high frequency confirmation, this level of exceedance over limited frequency ranges does not represent a concern and thus does not warrant additional evaluation to confirm the functionality of control devices in the high frequency range.

Based on its review of the licensee's letter, the NRC staff concludes that the licensee's screening meets the criteria outlined in EPRI Report 3002004396, and, therefore, is acceptable to the staff.

If you have any questions, please contact Steve Wyman at (301) 415-3041 or via e-mail at Stephen.Wyman@nrc.gov.

Sincerely,



Stephen Wyman, Project Manager
Hazards Management Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

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Based on its review of the licensee’s letter, the NRC staff concludes that the licensee’s screening meets the criteria outlined in EPRI Report 3002004396, and, therefore, is acceptable to the staff.

If you have any questions, please contact Steve Wyman at (301) 415-3041 or via e-mail at Stephen.Wyman@nrc.gov.

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/RA/
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ADAMS Accession No. ML16060A043

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