



RS-14-171

10 CFR 50.54(f)

June 6, 2014

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
11555 Rockville Pike,
Rockville, MD 20852

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Interim Evaluation in Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident

References:

1. NRC Letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 12, 2012
2. NEI Letter, Proposed Path Forward for NTFTF Recommendation 2.1: Seismic Reevaluations, dated April 9, 2013
3. NRC Letter, Electric Power Research Institute Final Draft Report XXXXXX, "Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic," as an Acceptable Alternative to the March 12, 2012, Information Request for Seismic Reevaluations, dated May 7, 2013
4. Exelon Generation Company, LLC letter to the NRC, Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident – 1.5 Year Response for CEUS Sites, dated September 12, 2013
5. Exelon Generation Company, LLC letter to the NRC, Seismic Hazard and Screening Report (Central and Eastern United States (CEUS) Sites), Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 31, 2014 (RS-14-072)
6. NRC Letter, Screening and Prioritization Results Regarding Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Seismic Hazard Re-evaluations for Recommendation 2.1 of the Near-Term Task force Review of Insights from the Fukushima Dai-ichi Accident, dated May 9, 2014

7. NRC Letter, Supplemental Information related to Request for Information Pursuant to 10 CFR 50.54(f) regarding Seismic Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated February 20, 2014
8. NEI Letter to NRC, Seismic Risk evaluations for Plants in the Central and Eastern United States, dated March 12, 2014
9. NRC Generic Issue 199 (GI-199) Report, Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants, Safety/Risk Assessment, dated August 2010
10. EPRI Technical Report 1025286, Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic, June 2012
11. Exelon Generation Company, LLC letter to the NRC, 180-day Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated November 27, 2012 (RS-12-169)
12. ComEd Letter from R.M. Krich to U.S. Nuclear Regulatory Commission, Subject: Updated Individual Plant Examination of External Events Report, dated July 29, 1999

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Reference 1 to all power reactor licensees and holders of construction permits in active or deferred status. Enclosure 1 of Reference 1 requested each addressee located in the Central and Eastern United States (CEUS) to submit a Seismic Hazard Evaluation and Screening Report within 1.5 years from the date of Reference 1.

In Reference 2, the Nuclear Energy Institute (NEI) requested NRC agreement to delay submittal of the final CEUS Seismic Hazard Evaluation and Screening Reports so that an update to the Electric Power Research Institute (EPRI) ground motion attenuation model could be completed and used to develop that information. NEI proposed that descriptions of subsurface materials and properties and base case velocity profiles be submitted to the NRC by September 12, 2013, with the remaining seismic hazard and screening information submitted by March 31, 2014. NRC agreed with that proposed path forward in Reference 3. In Reference 4, Exelon Generation Company, LLC (EGC) provided the description of subsurface materials and properties and base case velocity profiles for Quad Cities Nuclear Power Station, Units 1 and 2.

In Reference 5, EGC provided the final CEUS Seismic Hazard Evaluation and Screening Report for Quad Cities Nuclear Power Station, Units 1 and 2. Reference 5 determined that Quad Cities Nuclear Power Station, Units 1 and 2 screened out and do not require additional seismic risk evaluation. In Reference 6, the NRC identified that until a final determination can be made Quad Cities Nuclear Power Station, Units 1 and 2 conditionally screened-in for the purposes of prioritizing and conducting additional evaluation, and requested submittal of the results of an interim evaluation by June 6, 2014.

The purpose of this letter is to provide the interim evaluation for Quad Cities Nuclear Power Station, Units 1 and 2. Additional information to support the conclusion that Quad Cities Nuclear Power Station, Units 1 and 2 screens out as indicated in Reference 5 will be provided in future discussions with NRC staff.

Interim Evaluation of Seismic Hazard

Consistent with NRC letter dated February 20, 2014, (Reference 7) the seismic hazard reevaluations presented herein are distinct from the current design and licensing bases of Quad Cities Nuclear Power Station, Units 1 and 2. Therefore, the results do not call into question the operability or functionality of Structures, Systems and Components (SSCs) and are not reportable pursuant to 10 CFR 50.72 and 10 CFR 50.73.

The Reference 7 letter also requests that licensees provide an interim evaluation or actions to demonstrate that the plant can cope with the reevaluated hazard while the expedited approach and risk evaluations are conducted. In response to that request, NEI letter dated March 12, 2014 (Reference 8) provides seismic core damage risk estimates using the updated seismic hazards for the operating nuclear plants in the Central and Eastern United States. These risk estimates continue to support the following conclusions of the NRC GI-199 Safety/Risk Assessment (Reference 9):

Overall seismic core damage risk estimates are consistent with the Commission's Safety Goal Policy Statement because they are within the subsidiary objective of 10^{-4} /year for core damage frequency. The GI-199 Safety/Risk Assessment, based in part on information from the U. S. Nuclear Regulatory Commission's (NRC's) Individual Plant Examination of External Events (IPEEE) program, indicates that no concern exists regarding adequate protection and that the current seismic design of operating reactors provides a safety margin to withstand potential earthquakes exceeding the original design basis.

The comparisons documented in the Reference 8 letter show that there has not been an overall increase in seismic risk for the fleet of U.S. nuclear plants. In addition, all sixty-one of the CEUS sites have seismic core damage risk estimates below the 10^{-4} /year threshold considered in Reference 9. The Quad Cities Nuclear Power Station, Units 1 and 2 are included in the Reference 8 risk estimates. Thus, it can be concluded that the current seismic design of Quad Cities Nuclear Power Station, Units 1 and 2 continues to provide a safety margin to withstand potential earthquakes exceeding the seismic design basis, as was concluded in Reference 9.

Seismic Walkdown Insights

In response to NTTF Recommendation 2.3, the 50.54(f) letter (Reference 1) requested licensees to perform seismic walkdowns in order to, in the context of seismic response: 1) verify that the current plant configuration is consistent with the licensing basis, 2) verify the adequacy of current strategies, monitoring, and maintenance programs, and 3) identify degraded, nonconforming, or unanalyzed conditions. Seismic walkdown guidance (EPRI 1025286, Reference 10) was developed and endorsed by the NRC as a means for all plants to provide a uniform and acceptable industry response to NTTF 2.3 seismic walkdowns.

Seismic walkdowns in response to NTTF 2.3 for Quad Cities Nuclear Power Station, Units 1 and 2 have been performed as documented in Reference 11. Any potentially degraded, nonconforming, or unanalyzed conditions identified during the seismic walkdown program were

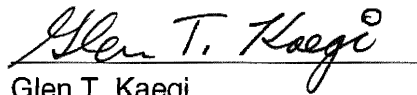
assessed in accordance with the plant corrective action program, and were identified as being minor issues. The evaluations determined the seismic walkdowns for Quad Cities Nuclear Power Station, Units 1 and 2 identified no adverse anchorage conditions, no adverse seismic spatial interactions, and no other adverse seismic conditions existing for equipment examined during the walkdowns.

Plant vulnerabilities identified in the Quad Cities Nuclear Power Station, Units 1 and 2 seismic Individual Plant Examination of External Events (IPEEE) (Reference 12) were assessed as part of the seismic walkdowns (Reference 11). All corrective actions for IPEEE outliers and IPEEE plant improvements have been completed and documented in Reference 11.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Ron Gaston at (630) 657-3359.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 6th day of June 2014.

Respectfully submitted,



Glen T. Kaegi
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

cc: Director, Office of Nuclear Reactor Regulation
Regional Administrator - NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station
NRC Project Manager, NRR – Quad Cities Nuclear Power Station
Ms. Jessica A. Kratchman, NRR/JLD/PMB, NRC
Mr. Eric E. Bowman, NRR/DPR/PGCB, NRC or Ms. Eileen M. McKenna,
NRO/DSRA/BPTS, NRC
Mr. Nicholas J. DiFrancesco, NRR/JLD/JPMB, NRC
Illinois Emergency Management Agency - Division of Nuclear Safety