



4300 Winfield Road  
Warrenville, IL 60555

630 657 2000 Office

RS-20-026

10 CFR 50.54(f)

March 6, 2020

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dresden Nuclear Power Station, Units 2 and 3  
Renewed Facility Operating License Nos. DPR-19 and DPR-25  
NRC Docket Nos. 50-237 and 50-249

**Subject:** Supplemental Information Related to Seismic Probabilistic Risk Assessment Report, 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

**References:**

1. Letter from E. J. Leeds (NRC) to all Licensees, "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 (ML12053A340)
2. EPRI Report 1025287, "Seismic Evaluation Guidance: Screening, Prioritization and Implementation Details (SPID) for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic," dated November 27, 2012 (ML12333A170)
3. Letter from G. T. Kaegi (Exelon Generation Company, LLC (EGC)) to NRC, "Exelon Generation Company, LLC, 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 (ML14091A012)
4. Letter from T. Govan (NRC) to B. Hanson (EGC), "Dresden Nuclear Power Station, Units 2 and 3 - Staff Assessment of Information Provided Pursuant to Title 10 of the Code of Federal Regulations Part 50, Section 50.54(f), Seismic Hazard Reevaluations Relating to Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident (TAC Nos. MF3877 and MF3878)," dated April 27, 2015 (ML15097A519)

5. Letter from W. M. Dean (NRC) to Power Reactor Licensees, "Final Determination of Licensee Seismic Probabilistic Risk Assessments Under the Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendation 2.1 'Seismic' of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated October 27, 2015 (ML15194A015)
6. Letter from P. R. Simpson (EGC) to NRC, "Request for Extension of Due Date for Seismic Probabilistic Risk Assessment Submittal," dated May 14, 2018 (ML18134A224)
7. Letter from L. Lund (NRC) to B. C. Hanson (EGC), "Dresden Nuclear Power Station, Units 2 and 3 – Response to Request for Extension of Seismic Probabilistic Risk Assessment Submittal," dated September 17, 2018 (ML18236A262)
8. Letter from P. R. Simpson (EGC) to NRC, "Seismic Probabilistic Risk Assessment Report, 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 October 30, 2019 (ML19304B567)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued a request for information pursuant to 10CFR 50.54(f) associated with the recommendations of the Fukushima Near-Term Task Force (NTTF) (Reference 1). Enclosure 1 of Reference 1 requested each licensee to reevaluate the seismic hazards at their sites using present-day NRC requirements and guidance, and to identify actions taken or planned to address plant-specific vulnerabilities associated with the updated seismic hazards.

Reference 2 contains industry guidance developed by Electric Power Research Institute (EPRI) that provides the screening, prioritization and implementation details (SPID) for the resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic. The SPID (Reference 2) was used to compare the reevaluated seismic hazard to the design basis hazard. The Dresden Nuclear Power Station (DNPS), Units 2 and 3 reevaluated seismic hazard (Reference 3) concluded that the ground motion response spectrum (GMRS) exceeded the design basis seismic response spectrum in the 1 to 10 Hz range, and therefore a seismic probabilistic risk assessment was required.

Reference 4 contains the NRC Assessment of the DNPS, Units 2 and 3 seismic hazard submittal which concluded that the reevaluated seismic hazard prepared for DNPS, Units 2 and 3 is suitable for other activities associated with the NTTF Recommendation 2.1: Seismic.

Reference 5 provided the NRC final seismic hazard evaluation screening determination results and the associated schedules for submittal of the remaining seismic hazard evaluation activities for DNPS, Units 2 and 3. Reference 5 indicated that the DNPS, Units 2 and 3 Seismic Probabilistic Risk Assessment (SPRA) was expected to be submitted by June 30, 2019. In Reference 6, Exelon Generation Company, LLC requested an extension of the DNPS Units 2 and 3 SPRA submittal date to December 31, 2019. This extension request was approved by the NRC in Reference 7.

The enclosure to Reference 8 contained the DNPS, Units 2 and 3 SPRA Summary Report which provided the information requested in Enclosure 1, Item (8) B. of the 10 CFR 50.54(f) letter.

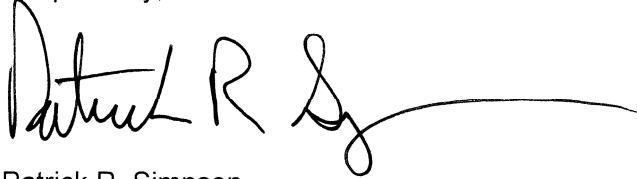
This letter corrects an issue identified in the review of information provided in Reference 8. The issue identified is related to a minor error that does not impact the results and conclusions within the Reference 8 submittal. This issue has been entered into the EGC Corrective Action Program under Issue Report No. 4319440, and an extent of condition review has determined that the issue is limited to the items discussed in the Attachment to this letter. No other text, results, or conclusions in the Reference 8 submittal are affected.

This letter contains no new regulatory commitments or revisions to existing regulatory commitments.

If you have any questions regarding this report, please contact Mitchel Mathews at (630) 657-2819.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 6<sup>th</sup> day of March 2020.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick R. Simpson", followed by a long horizontal flourish line.

Patrick R. Simpson  
Sr. Manager Licensing  
Exelon Generation Company, LLC

Attachment: Supplemental Information Related to Dresden Nuclear Power Station, Units 2 and 3 Seismic Probabilistic Risk Assessment in Response to 50.54(f) Letter with Regard to NTTF 2.1 Seismic, dated October 30, 2019

cc: Regional Administrator - NRC Region III  
NRC Senior Resident Inspector – Dresden Nuclear Power Station  
NRC Project Manager, NRR – Dresden Nuclear Power Station  
Mr. Milton Valentin-Olmeda, NRR/DLP/PBMB, NRC  
Illinois Emergency Management Agency- Division of Nuclear Safety

bcc: Site Vice President – Dresden Nuclear Power Station  
Vice President - Licensing & Regulatory Affairs  
Corporate Licensing Director - West  
Site Engineering Director – Dresden Nuclear Power Station  
Director Org. Performance and Regulatory– Dresden Nuclear Power Station  
Site Operations Director – Dresden Nuclear Power Station  
Director Corporate Engineering - PRA  
Regulatory Assurance Manager – Dresden Nuclear Power Station  
Corporate Licensing Manager – West  
Licensing Records  
Commitment Tracking Coordinator – West  
Duane Avery – Dresden Nuclear Power Station  
John A. Feigl – Dresden Nuclear Power Station  
Eyad Ali – Dresden Nuclear Power Station  
Reha Alkan – Dresden Nuclear Power Station  
Philip J. Tarpinian, Jr. – Corporate Kennett Square  
Danny Brush – Corporate Cantera

### **Attachment**

Supplemental Information Related to Dresden Nuclear Power Station, Units 2 and 3 Seismic Probabilistic Risk Assessment in Response to 50.54(f) Letter with Regard to NTTF 2.1 Seismic, dated October 30, 2019

## ATTACHMENT

### **Supplemental Information Related to Dresden Nuclear Power Station, Units 2 and 3 Seismic Probabilistic Risk Assessment in Response to 50.54(f) Letter with Regard to NTTF 2.1 Seismic, dated October 30, 2019**

During the development of the response to an NRC request for information related to the Dresden Nuclear Power Station (DNPS), Units 2 and 3 Seismic Probabilistic Risk Analysis (SPRA) submittal dated October 30, 2019, Exelon Generation Company, LLC (EGC) found that the conditional large early release probability (CLERP) values presented in Table 7c-1 of the submittal for Sensitivity Case 7c are slightly inaccurate. The CLERP results only are slightly inaccurate because the DNPS Plant Availability (i.e., criticality) factor was mistakenly incorporated twice (instead of the intended once) in the calculation of the CLERPs. Since the DNPS Plant Availability factor used in the DNPS SPRA (i.e., from the DNPS Internal Events PRA) is very close to 1.0 (i.e., 0.965 reactor critical year/calendar year) the double counting of this factor in the CLERP in Table 7c-1 has a very minor impact and does not change the conclusions of Sensitivity Case 7c. This same issue exists in the DNPS SPRA Quantification (QU) Notebook (NB), DR-PRA-020.006, Rev. 0, App. I, Table 7c-1 that was prepared by EGC. Revision 1 of DR-PRA-020.006 has been issued to address this issue. The DNPS SPRA base case results and all other sensitivity case results, especially Seismic Core Damage Frequency (SCDF) and Seismic Large Early Release Frequency (SLERF) values reported in the October 30, 2019, Submittal and the Risk Management SPRA QU NB are unaffected. Moreover, the minor error does not impact the results and conclusions within the DNPS SPRA Submittal.

This minor error for Sensitivity Case 7c was determined to exist only in that specific sensitivity case table in the CLERP column of Table 7c-1. The Conditional Core Damage Probability and Conditional Large Early Release Probability values presented in Figure 5.4-3, Table 5.7-2, Figure 5.5-3 and Table 5.7-3 of the DNPS SPRA submittal were reviewed and confirmed that they are all calculated correctly. Only the CLERP values in Table 7c-1 of the October 30, 2019, DNPS SPRA submittal and the associated table in the DNPS SPRA QU NB had the issue in question.

A revised version of Table 7c-1 is included below. This version is intended to supersede the Table 7c-1 that was provided in the DNPS SPRA submittal of October 30, 2019, in its entirety. Part of the sensitivity case discussion that references the CLERP has also been updated to reflect that the CLERP at 1.5g ground motion is close to 1.0 instead of equal to 1.0. The updated discussion is shown below, preceding the updated Table 7c-1.

## ATTACHMENT

### Supplemental Information Related to Dresden Nuclear Power Station, Units 2 and 3 Seismic Probabilistic Risk Assessment in Response to 50.54(f) Letter with Regard to NTTF 2.1 Seismic, dated October 30, 2019

Additionally, this sensitivity shows that CLERP is close to 1.0 near ground motions of 1.5g. The table below shows the base frequencies and CLERPs compared to the sensitivity CLERPs for the extended G8 intervals.

**Table 7c-1: Sensitivity Case to Extend the G8 Hazard Interval [52]**

<b>Extended G8 Hazard Interval Range (g)</b>	<b>SLERF (/yr)</b>	<b>Initiator Frequency (/yr)<sup>(1)</sup></b>	<b>CLERP</b>
1.0 to 1.1	1.78E-07	2.18E-07	8.45E-01
1.1 to 1.2	1.37E-07	1.60E-07	8.90E-01
1.2 to 1.3	1.05E-07	1.18E-07	9.23E-01
1.3 to 1.4	7.98E-08	8.74E-08	9.46E-01
1.4 to 1.5	6.06E-08	6.54E-08	9.61E-01
1.5+	2.77E-07	2.93E-07	9.78E-01
<b>Total</b>	<b>8.37E-07</b>	<b>9.41E-07</b>	<b>N/A</b>

(1) Interval frequency shown in this table is in units of /crit-yr and does not include the 0.965 criticality factor.