



Order No. EA-12-049

RS-16-082  
RA-16-034

May 25, 2016

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

Oyster Creek Nuclear Generating Station  
Renewed Facility Operating License No. DPR-16  
NRC Docket No. 50-219

**Subject:** Mitigating Strategies Assessment (MSA) Report for the New Seismic Hazard Information - NEI 12-06, Appendix H, Revision 2, H.4.1 Path 1: GMRS  $\leq$  SSE

**References:**

1. NEI 12-06, Revision 2, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, December 2015 (ML16005A625)
2. JLD-ISG-2012-01, Revision 1, Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, January 22, 2016 (ML15357A163)
3. Exelon Generation Company, LLC Letter to USNRC, 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 (ML14090A241)
4. 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 (ML14111A147)
5. Exelon Generation Company, LLC Letter to USNRC, Supplemental Information Regarding 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 August 21, 2014 (ML14234A124)
6. NRC Letter to Exelon Generation Company, LLC, Oyster Creek Nuclear Generating Station – Screening and Prioritization Results of Information Provided Pursuant to Title 10 of the Code of Federal Regulations Part 50, Section 50.54(f), Seismic Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident (TAC No. MF3920), dated November 28, 2014 (ML14307A638)

7. Exelon Generation Company, LLC Letter to USNRC, Expedited Seismic Evaluation Process Report (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 December 19, 2014 (ML14353A332)
8. NRC Letter, 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)
9. Exelon Generation Company, LLC Letter to USNRC, High Frequency Supplement to Seismic Hazard Screening 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 December 4, 2015 (ML15338A005)
10. NRC Letter to Exelon Generation Company, LLC, Oyster Creek Nuclear Generating Station – Staff Review of Interim Evaluation Associated with Reevaluated Seismic Hazard Implementing Near Term Task Force Recommendation 2.1 (CAC No. MF5257), dated February 17, 2016 (ML15240A049)
11. NRC Letter, Oyster Creek Nuclear Generating Station - Staff Assessment of Information Provided Pursuant to Title 10 of the Code of Federal Regulations Part 50, Section 50.54(f), Seismic Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated February 17, 2016 (ML15350A353)
12. NRC Letter to Exelon Generation Company, LLC, Staff Review of High Frequency Confirmation Associated with Reevaluated Seismic Hazard in Response to March 12, 2012 50.54(f) Request for Information, dated February 18, 2016 (ML15364A544)
13. NEI Letter to USNRC, Request for NRC Endorsement of High Frequency Program: Application Guidance for Functional Confirmation and Fragility Evaluation (EPRI 3002004396), dated July 30, 2015 (ML15223A100/ML15223A102)
14. NRC Letter to NEI, Endorsement of Electric Power Research Institute Final Draft Report 3002004396: “High Frequency Program: Application Guidance for Functional Confirmation and Fragility”, dated September 17, 2015 (ML15218A569)

The purpose of this letter is to provide the results of the assessment for Oyster Creek Nuclear Generating Station (OCNGS) to determine if the FLEX strategies developed, implemented and maintained in accordance with NRC Order EA-12-049 can be implemented considering the impacts of the reevaluated seismic hazard. The assessment was performed in accordance with the guidance provided in Appendix H of NEI 12-06 Revision 2 (Reference 1) which was endorsed by the NRC (Reference 2).

The Mitigating Strategies Seismic Hazard Information (MSSHI) is the licensee’s reevaluated seismic hazard information at OCNGS, developed using Probabilistic Seismic Hazard Analysis (PSHA). The MSSHI includes a performance-based Ground Motion Response Spectrum

(GMRS), Uniform Hazard Response Spectra (UHRS) at various annual probabilities of exceedance, and a family of seismic hazard curves at various frequencies and fractiles developed at the OCNGS site control point elevation. Exelon Generation Company, LLC (EGC) submitted the reevaluated seismic hazard information including the UHRS, GMRS and the hazard curves to the NRC in Reference 3, which included commitments to perform an Expedited Seismic Evaluation Process (ESEP) evaluation, a High Frequency (HF) Confirmation and Low Frequency (LF) evaluation. Subsequently, the NRC's Screening and Prioritization letter (Reference 4) conditionally required OCNGS to perform a Seismic Probabilistic Risk Analysis (SPRA) and a Spent Fuel Pool (SFP) evaluation in addition to the previous commitments. EGC submitted supplemental information in Reference 5 in support of an SPRA "screen-out"; however, the NRC in Reference 6 reaffirmed the need for an SPRA and the other Reference 4 evaluations for OCNGS, though the seismic hazard from Reference 3 remained unresolved.

OCNGS submitted their ESEP in Reference 7, which was subsequently accepted by the NRC in their Staff Evaluation (Reference 10).

The NRC Final Determination Letter (Reference 8) identified that only the SFP and HF evaluations remained to be completed for OCNGS; and the SPRA and LF evaluations were no longer required.

EGC submitted a response for the Near-Term Task Force (NTTF) Recommendation 2.1 seismic HF evaluation (Reference 9) in accordance with the screening allowance of EPRI 3002004396, Section 3.1.2 for limited HF exceedance (Reference 13, endorsed by NRC in Reference 14). The NRC subsequently accepted the closure of OCNGS HF Confirmation per Reference 12.

In Reference 11, the NRC confirmed the open items for SFP and HF are no longer required based on the resolved reevaluated Seismic Hazard for OCNGS being bounded by the current plant licensing and design basis.

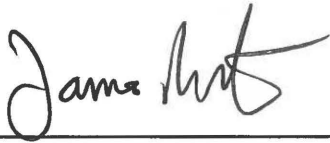
Consistent with NEI 12-06, Appendix H, Revision 2, H.4.1 (Path 1), the OCNGS site is bounded by the Safe Shutdown Earthquake (SSE) spectrum at frequencies 1 Hz and greater. Therefore, the FLEX strategies for OCNGS can be implemented as designed and no further seismic evaluations or mitigating strategies assessments are necessary.

This letter contains no new regulatory commitments and no revision to existing regulatory commitments.

If you have any questions regarding this submittal, please contact David P. Helker at (610) 765-5525.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 25<sup>th</sup> day of May 2016.

Respectfully submitted,



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Director - Licensing & Regulatory Affairs  
Exelon Generation Company, LLC

cc: NRC Regional Administrator - Region I  
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