

RS-15-286

10 CFR 50.54(f)

December 4, 2015

U.S. Nuclear Regulatory Commission
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Rockville, MD 20852

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

Subject: 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

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 (ML12053A340)
2. NRC Letter, Electric Power Research Institute Report 3002000704, "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 (ML13106A331)
3. NEI Letter, Final Draft of Industry Seismic Evaluation Guidance (EPRI 1025287), dated November 27, 2012 (ML12333A168 and ML12333A170)
4. NRC Letter, Endorsement of Electric Power Research Institute Final Draft Report 1025287, "Seismic Evaluation Guidance", dated February 15, 2013 (ML12319A074)
5. Constellation Energy Nuclear Group letter to NRC, Seismic Hazard and Screening Report (CEUS Sites), Response to NRC Request for Information Pursuant to 10CFR50.54(f) Regarding Recommendation 2.1 of Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident: Calvert Cliffs Nuclear Power Plant, Units 1 and 2, dated March 31, 2014 (ML14099A196)
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 (ML14111A147)

7. NRC Letter, Support Document for Screening and Prioritization Results Regarding Seismic Hazard Re-Evaluation for Operating Reactors in the Central and Eastern United States, dated May 21, 2014 (ML14136A126)
8. NEI Letter, Request for NRC Endorsement of High Frequency Program: Application Guidance for Functional Confirmation and Fragility Evaluation (EPRI 3002004396), dated July 30, 2015 (ML15223A100/ML15223A102)
9. NRC Letter, September 17, 2015 to NEI: Endorsement of Electric Power Research Institute Final Draft Report 3002004396: "High Frequency Program: Application Guidance for Functional Confirmation and Fragility" (ML15218A569)
10. 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)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued a Request for Information per 10 CFR 50.54(f) (Reference 1) to all power reactor licensees. The required response section of Enclosure 1 of Reference 1 indicated that licensees should provide a Seismic Hazard Evaluation and Screening Report within 1.5 years from the date of the letter for Central and Eastern United States (CEUS) nuclear power plants. By NRC letter dated May 7, 2013 (Reference 2), the date to submit the report was extended to March 31, 2014.

By letter dated May 9, 2014 (Reference 6), the NRC transmitted the results of the screening and prioritization review of the seismic hazards reevaluation submittal for Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (Reference 5). In accordance with the screening, prioritization, and implementation details report (SPID) (References 3 and 4), and Augmented Approach guidance (as endorsed in Reference 2), the reevaluated seismic hazard is used to determine if additional seismic risk evaluations are warranted for a plant. Specifically, the reevaluated horizontal ground motion response spectrum (GMRS) at the control point elevation is compared to the existing safe shutdown earthquake (SSE) or Individual Plant Examination for External Events (IPEEE) High Confidence of Low Probability of Failure (HCLPF) Spectrum (IHS) to determine if a plant is required to perform a high frequency confirmation evaluation. As noted in the May 9, 2014 letter from the NRC (Reference 6) on page 2 of Enclosure 2, Calvert Cliffs Nuclear Power Plant, Units 1 and 2 is to conduct a limited scope High Frequency Evaluation (Confirmation).

Within the May 9, 2014 letter (Reference 6), the NRC acknowledged that these limited scope evaluations will require additional development of the assessment process. By Reference 8, the Nuclear Energy Institute (NEI) 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. NRC endorsement was provided by Reference 9. Reference 10 provided the NRC final seismic hazard evaluation screening determination results and the associated schedules for submittal of the remaining seismic hazard evaluation activities. This submittal is provided in accordance with Reference 10, Table 1a, to address the High Frequency Evaluation information request for Calvert Cliffs Nuclear Power Plant, Units 1 and 2.

The High Frequency Confirmation for Calvert Cliffs Nuclear Power Plant Units 1 & 2 shows that the high-frequency spectral accelerations of the control point GMRS above 10Hz are within the limits identified in Section 3.1.1 of Reference 8 (less than or equal to 0.2g); therefore, no additional evaluation is necessary. The attachment to this letter provides the SSE and GMRS information from Reference 5.

This transmittal completes the scope of work described in Section 4.2 of Reference 5, for Calvert Cliffs Nuclear Power Plant, Units 1 and 2.

This letter contains no new regulatory commitments and closes the associated regulatory commitment contained in Reference 5 for Calvert Cliffs Nuclear Power Plant, Units 1 and 2.

If you have any questions regarding this report, please contact Ronald Gaston at 630-657-3359.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 4th day of December 2015.

Respectfully submitted,



James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment: Calvert Cliffs Nuclear Power Plant, Units 1 and 2 GMRS and SSE Supporting Information

cc: Regional Administrator - NRC Region I
NRC Senior Resident Inspector – Calvert Cliffs Nuclear Power Plant
NRC Project Manager, NRR – Calvert Cliffs Nuclear Power Plant
Mr. Nicholas DiFrancesco, NRR/JLD/JHMB, NRC

Attachment

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
GMRS and SSE Supporting Information
(Reference 5)

(2 Pages)

**Table 1 - Calvert Cliffs
Nuclear Power Plant Units 1 & 2
SSE and GMRS data**

SSE		GMRS	
Freq (Hz)	Accel (g)	Freq (Hz)	Accel (g)
0.1	0.008	0.1	0.0114
0.125	0.012	0.125	0.0142
0.15	0.018	0.15	0.0170
0.2	0.029	0.2	0.0227
0.25	0.041	0.25	0.0284
0.3	0.049	0.3	0.0341
0.35	0.057	0.35	0.0398
0.4	0.063	0.4	0.0454
0.5	0.074	0.5	0.0568
0.6	0.085	0.6	0.0650
0.7	0.095	0.7	0.0795
0.8	0.104	0.8	0.0827
0.9	0.112	0.9	0.0870
1	0.123	1	0.0970
1.25	0.145	1.25	0.117
1.5	0.166	1.5	0.128
2	0.198	2	0.143
2.5	0.217	2.5	0.148
3	0.226	3	0.164
3.5	0.226	3.5	0.176
4	0.222	4	0.185
5	0.212	5	0.200
6	0.197	6	0.203
7	0.188	7	0.204
8	0.179	8	0.200
9	0.168	9	0.194
10	0.160	10	0.188
12.5	0.152	12.5	0.188
15	0.152	15	0.182
20	0.152	20	0.180
25	0.151	25	0.185
30	0.151	30	0.168
35	0.151	35	0.157
40	0.150	40	0.149
50	0.150	50	0.138
60	0.150	60	0.130
70	0.150	70	0.124
80	0.150	80	0.119
90	0.150	90	0.115
100	0.150	100	0.112

Figure 1

