

PSEG Nuclear LLC  
P.O. Box 236, Hancocks Bridge, NJ 08038-0236



10 CFR 50.54(f)

LR-N15-0256

**DEC 23 2015**

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Hope Creek Generating Station  
Renewed Facility Operating License No. NPF-57  
NRC Docket No. 50-354

**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 (ADAMS Accession No. ML12053A340)
2. 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 (ADAMS Accession No. ML13106A331)
3. NEI letter, "Final Draft of Industry Seismic Evaluation Guidance (EPRI 1025287)," dated November 27, 2012 (ADAMS Accession No. ML12333A168 and ML12333A170)
4. NRC letter, "Endorsement of Electric Power Research Institute Final Draft Report 1025287, 'Seismic Evaluation Guidance,'" dated February 15, 2013 (ADAMS Accession No. ML12319A074)

5. PSEG letter LR-N14-0035, "PSEG Nuclear LLC's Seismic Hazard and Screening 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 – Hope Creek Generating Station," dated March 28, 2014 (ADAMS Accession No. ML14087A436)
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 Reevaluations for Recommendation 2.1 of the Near-Term Task Force Reviews of Insights from the Fukushima Dai-ichi Accident," dated May 9, 2014 (ADAMS Accession No. ML14111A147)
7. NEI letter, "Request for NRC Endorsement of High Frequency Program: Application Guidance for Functional Confirmation and Fragility Evaluation (EPRI 3002004396)," dated July 30, 2015 (ADAMS Accession Nos. ML15223A100 and ML15223A102)
8. NRC letter, "Endorsement of Electric Power Research Institute Final Draft Report 3002004396, 'High Frequency Program: Application Guidance for Functional Confirmation and Fragility,'" dated September 17, 2015 (ADAMS Accession No. ML15218A569)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued a request for information (Reference 1) pursuant to 10 CFR 50.54(f) to all power reactor licensees and holders of construction permits in active or deferred status. Enclosure 1 of the 10 CFR 50.54(f) letter requests each addressee located in the Central and Eastern United States (CEUS) to submit a Seismic Hazard Evaluation and Screening Report. In accordance with the Screening, Prioritization, and Implementation Details (SPID) report and Augmented Approach guidance endorsed by the NRC staff (References 2, 3, and 4), PSEG Nuclear LLC (PSEG) provided the requested report for Hope Creek Generating Station (HCGS) on March 28, 2014 (Reference 5). The purpose of this letter is to complete PSEG's Commitment No. 1 in Reference 5 to perform a relay chatter review for HCGS, consistent with the NRC screening and prioritization results (Reference 6) and subsequent NRC-endorsed guidance for completing high frequency confirmations (References 7 and 8).

The reevaluated seismic hazard (Reference 5) 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) to determine if a plant is required to perform a high frequency confirmation. The NRC screening and prioritization letter (Reference 6) identified HCGS as a plant that is required to conduct a limited scope high frequency evaluation and acknowledged that the schedule milestones and content

of limited scope evaluations will require additional development of the assessment process. By Reference 7, Nuclear Energy Institute (NEI) submitted an Electric Power Research Institute (EPRI) report containing high frequency confirmation guidance that was endorsed by the NRC staff in Reference 8. PSEG performed the high frequency confirmation in lieu of the relay chatter evaluation, consistent with References 6, 7, and 8.

The high frequency confirmation for HCGS shows that the GMRS exceedance area between the control point GMRS and SSE is 7% of the area under the SSE design basis response spectrum in the region of the exceedance. As such, the GMRS exceedance area is consistent with the high frequency confirmation screening criteria in Section 3.1.2 of Reference 7. Therefore, no additional evaluation is necessary. Attachment 1 to this letter provides the SSE response spectrum and the GMRS information from Reference 5.

This transmittal completes Commitment No. 1 from Reference 5. There are no regulatory commitments contained in this letter.

If you have any questions or require additional information, please do not hesitate to contact Mr. Lee Marabella at 856-339-1208.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on Dec 23, 2015  
(Date)

Sincerely,



Paul J. Davison  
Site Vice President  
Hope Creek Generating Station

Attachment 1: Supporting GMRS and SSE Design Basis Response Spectrum Information

cc: Mr. Daniel Dorman, Administrator, Region I, NRC  
Ms. Carleen Parker, Project Manager, NRC  
Mr. Nicholas DiFrancesco, Project Manager, NRC  
Mr. Justin Hawkins, NRC Senior Resident Inspector, Hope Creek  
Mr. Patrick Mulligan, Chief, NJBNE  
Mr. Thomas MacEwen, Hope Creek Commitment Tracking Coordinator  
Mr. Lee Marabella, PSEG Corporate Commitment Coordinator

LR-N15-0256

Attachment 1  
Supporting GMRS and SSE Information

**Table 1. Hope Creek Generating Station  
GMRS Data from Table 2-4 of Reference 5, Enclosure 1**

Frequency (Hz)	Acceleration (g)
0.1	0.0116
0.125	0.0145
0.15	0.0174
0.2	0.0232
0.25	0.0290
0.3	0.0349
0.35	0.0407
0.4	0.0465
0.5	0.0581
0.6	0.0698
0.7	0.0786
0.8	0.0871
0.9	0.095
1	0.101
1.25	0.120
1.5	0.139
2	0.150
2.5	0.150
3	0.196
3.5	0.273
4	0.285
5	0.354
6	0.356
7	0.347
8	0.339
9	0.333
10	0.329
12.5	0.334
15	0.315
20	0.290
25	0.271
30	0.238
35	0.220
40	0.209
50	0.196
60	0.188
70	0.183
80	0.178
90	0.174
100	0.170

**Table 2. Hope Creek Generating Station  
SSE Data from Table 3-1 of Reference 5, Enclosure 1**

Frequency (Hz)	Acceleration (g)
0.1	0.04
0.25	0.09
2.5	0.63
9	0.54
33	0.2
100	0.2

Figure 1. Comparison of Hope Creek Generating Station  
GMRS to SSE Response Spectrum

