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10 CFR 50.54(f)

LR-N15-0255

DEC 23 2015

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

Salem Generating Station Units 1 and 2
Renewed Facility Operating License Nos. DPR-70 and DPR-75
NRC Docket Nos. 50-272 and 50-311

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-N14-0051, "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 – Salem Generating Station," dated March 28, 2014 (ADAMS Accession No. ML14090A043)
6. 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 (ADAMS Accession No. ML15194A015)
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 No. 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)
9. Updated Final Safety Analysis Report, Salem Generating Station Units 1 and 2, Revision 28

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 Salem Generating Station (SGS) Units 1 and 2 on March 28, 2014 (Reference 5). The purpose of this letter is to complete PSEG's Commitment No. 5 in Reference 5 to perform a relay chatter review for SGS Units 1 and 2, consistent with the NRC's final determination of October 27, 2015 (Reference 6) and 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

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perform a high frequency confirmation. The NRC's final determination of October 27, 2015 (Reference 6), identified SGS as a plant that is required to perform either a limited scope high frequency evaluation or a relay chatter review (Table 1.b of Reference 6). 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 SSE response spectrum provided in the March 28, 2014, letter (Reference 5) is the SSE ground response spectrum determined from site seismology as specified in Figure 2.5-12 of the SGS Updated Final Safety Analysis Report (UFSAR, Reference 9). The SGS Units 1 and 2 SSE design basis response spectrum is specified in UFSAR Section 3.7.1. All Seismic Category I systems, structures, and components (SSCs) at SGS are required to be evaluated to the SSE design basis response spectrum. The SSE ground response spectrum and the SSE design basis response spectrum are both referenced to the same control point.

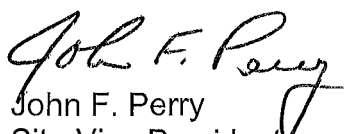
The SSE design basis response spectrum bounds the GMRS from 1 Hz to 10 Hz and therefore supports screening out of risk evaluation; the GMRS exceeds the SSE design basis response spectrum for a discrete range greater than 10 Hz. The high frequency confirmation for SGS Units 1 and 2 shows that the GMRS exceedance area between the control point GMRS and SSE design basis response spectrum is 8.5% 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 design basis response spectrum from Reference 9 and the GMRS information from Reference 5.

This transmittal completes Commitment No. 5 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 12/23/2015
(Date)

Sincerely,


John F. Perry
Site Vice President
Salem 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. Patrick Finney, NRC Senior Resident Inspector, Salem
Mr. Patrick Mulligan, Chief, NJBNE
Mr. Thomas Cachaza, Salem Commitment Tracking Coordinator
Mr. Lee Marabella, PSEG Corporate Commitment Coordinator

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Attachment 1

Supporting GMRS and SSE Design Basis Response Spectrum Information

**Table 1. Salem Generating Station Units 1 and 2
GMRS Data from Table 2-4 of Reference 5, Enclosure 1**

Frequency (Hz)	Acceleration (g)
0.1	0.0115
0.125	0.0143
0.15	0.0172
0.2	0.0229
0.25	0.0287
0.3	0.0344
0.35	0.0402
0.4	0.0459
0.5	0.0574
0.6	0.0711
0.7	0.0801
0.8	0.088
0.9	0.0984
1	0.106
1.25	0.115
1.5	0.139
2	0.14
2.5	0.138
3	0.168
3.5	0.205
4	0.248
5	0.324
6	0.33
7	0.322
8	0.304
9	0.287
10	0.274
12.5	0.278
15	0.266
20	0.261
25	0.27
30	0.241
35	0.222
40	0.209
50	0.192
60	0.18
70	0.171
80	0.164
90	0.158
100	0.153

**Table 2. Salem Generating Station Units 1 and 2
SSE Design Basis Response Spectrum Data from UFSAR (Reference 9) Figure 3.7-2**

Frequency (Hz)	Acceleration (g)
0.10	0.007
0.13	0.010
0.14	0.012
0.15	0.015
0.31	0.092
0.42	0.15
0.52	0.10
0.62	0.11
0.83	0.17
0.94	0.28
1.1	0.31
1.3	0.32
1.6	0.43
1.8	0.58
2.0	0.64
2.6	0.56
3.0	0.57
3.2	0.50
3.6	0.45
4.0	0.50
4.7	0.48
5.0	0.60
5.3	0.60
7.0	0.41
8.0	0.38
9	0.32
10	0.36
13	0.33
16	0.26
20	0.23
26	0.22
30	0.23
40	0.20
100.0	0.20

Figure 1. Comparison of Salem Generating Station Units 1 and 2
GMRS to SSE Design Basis Response Spectrum

