



Tom Simril  
Vice President  
Catawba Nuclear Station

Duke Energy  
CN01VP | 4800 Concord Road  
York, SC 29745  
o: 803.701.3340  
f: 803.701.3221  
tom.simril@duke-energy.com

CNS-17-043

10 CFR 50.54(f)  
10 CFR 50.4

August 29, 2017

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

Duke Energy Carolinas, LLC (Duke Energy)  
Catawba Nuclear Station (CNS), Units 1 and 2  
Docket Number(s) 50-413 and 50-414  
Renewed License Nos. NPF-35 and NPF-52

**Subject:** Catawba Nuclear Station High Frequency Supplement to Seismic Hazard Screening Report, Response 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 Number ML12053A340
2. NEI Letter, Final Draft of Industry Seismic Evaluation Guidance, Screening, Prioritization and Implementation Details (SPID) for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic (EPRI 1025287), dated November 27, 2012, ADAMS Accession Number ML12333A168 and ML12333A170
3. NRC Letter, Endorsement of Electric Power Research Institute Final Draft 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 February 15, 2013, ADAMS Accession Number ML12319A074
4. 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 Number ML13106A331
5. Seismic Hazard and Screening Report (CEUS Sites), Response to NRC 10 CFR 50.54(f) Request for Additional Information Pursuant to Title 10 of the Code of Federal

www.duke-energy.com

4010  
NR

- 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 31, 2014, ADAMS Accession Number ML14093A052
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 Number ML14111A147
  7. 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 Number ML15194A015
  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, ADAMS Accession Number ML15223A100 and ML15223A102
  9. 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, ADAMS Accession Number ML15218A569
  10. Duke Energy letter, Supplemental Information Regarding Reevaluated Seismic Hazard Screening and Prioritization Results - 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 20, 2016, ADAMS Accession ML16295A342
  11. NRC Letter, Catawba Nuclear Station, Units 1 and 2 and McGuire Nuclear Station, Units 1 and 2, Screening and Prioritization results regarding Seismic Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force review of Insights from the Fukushima Dai-ichi Accident, dated December 22, 2016, ADAMS Accession Number ML16344A313

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 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 4), the date to submit the report was extended to March 31, 2014.

In response to the 50.54(f) letter, CNS submitted the reevaluated seismic hazards on March 31, 2014 (Reference 5). By letter dated May 9, 2014, (Reference 6), the NRC transmitted the initial results of the screening and prioritization review of the seismic hazards reevaluation submittal for CNS. In accordance with the screening, prioritization, and implementation details report (SPID) and Augmented Approach guidance (References 2, 3 and 4), the reevaluated seismic hazard is used to determine if additional seismic risk evaluations are warranted for a plant. As

noted in the May 9, 2014, letter, CNS is to conduct limited-scope evaluations (i.e., spent fuel pool, and high frequency).

Within the May 9, 2014, letter (Reference 6), NRC acknowledged that these limited scope evaluations will require additional development of the assessment process. By Reference 8, 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.

By letter dated October 27, 2015, the NRC issued its final determination to (1) inform power reactor licensees of the remaining seismic evaluations that each licensee will perform, (2) inform those licensees that will perform a Seismic Probabilistic Risk Assessment SPRA, and (3) establish the associated due dates for the seismic evaluations and SPRAs to complete licensees' responses to the 50.54(f) letter. For CNS the October 27, 2015, letter stated that SPRAs were judged to be warranted, based on the information available to the NRC at that time, primarily based on containment type (ice condenser containment).

On September 14, 2016, a public meeting was held to discuss additional information which provided a technical basis for reconsideration of the decision to necessitate SPRAs for CNS. By letter dated October 20, 2016, (Reference 10), the topics discussed during the public meeting and the corresponding site-specific information for CNS were submitted.

The October 20, 2016, submittal stated that the seismic risk at Catawba and McGuire is not significant and performance of SPRAs would not provide meaningful additional risk insights for the sites because of the significant body of knowledge already available. Specifically, Duke cited reevaluated seismic hazard and associated seismic demand-versus-capacity information, previous generic and site-specific seismic risk evaluations, and site-specific Conditional Containment Failure Probability (CCFP) analyses.

By Letter dated December 22, 2016, (Reference 11), the NRC staff concluded that the plant-specific combination of seismic hazard exceedances, the general estimation of the Seismic Core Damage Frequency (SCDF), and the insights related to the CCFP at CNS indicate that the increase in seismic risk due to the reevaluated seismic hazard is addressed within the margin inherent in the design and that a SPRA is not warranted. Therefore, SPRA for CNS is no longer necessary to fulfill the response to the seismic portion of the 50.54(f) letter. Further, high frequency evaluation and mitigating strategies assessment continue to be necessary to gain insights into CNS response to high frequency ground motion and to ensure that mitigating strategies capabilities address the reevaluated seismic hazard conditions.

CNS has performed a High Frequency Confirmation evaluation in response to the NRC's 50.54(f) letter using the methods in EPRI report 3002004396. The enclosure to this letter provides the Seismic High Frequency Confirmation Report for CNS. This completes the scope of work described in Section 4.2 of Reference 5, for CNS.

U.S. Nuclear Regulatory Commission  
CNS-17-043  
Page | 4  
August 29, 2017

This letter contains no new Regulatory Commitments and no revision to existing Regulatory Commitments.

Should you have any questions regarding this submittal, please contact Cecil A. Fletcher II, Catawba Nuclear Regulatory Affairs Manager, at (803) 701-3622.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 29, 2017.

Sincerely,

A handwritten signature in black ink that reads "Tom Simril". The signature is fluid and cursive, with the first name "Tom" and last name "Simril" clearly distinguishable.

Tom Simril  
Vice President, Catawba Nuclear Station

Enclosure: 50.54(f) NTTF 2.1 Seismic High Frequency Confirmation for Catawba Nuclear Station

U.S. Nuclear Regulatory Commission  
CNS-17-043  
Page | 5  
August 29, 2017

xc (with enclosures):

Catherine Haney  
Regional Administrator  
U.S. Nuclear Regulatory Commission - Region II  
Marquis One Tower  
245 Peachtree Center Ave., NE Suite 1200  
Atlanta, GA 30303-1257

Juan F. Uribe  
U.S. Nuclear Regulatory Commission  
One White Flint North, Mailstop O-13F10  
11555 Rockville Pike  
Rockville, MD 20852-2738

Michael Mahoney  
NRC Project Manager (CNS)  
U.S. Nuclear Regulatory Commission  
One White Flint North, Mail Stop O-8H4A  
11555 Rockville Pike  
Rockville, MD 20852-2738

Joseph D. Austin  
NRC Senior Resident Inspector  
Catawba Nuclear Station

U.S. Nuclear Regulatory Commission  
CNS-17-043  
Enclosure  
August 29, 2017

## Enclosure

50.54(f) NTTF 2.1 Seismic High Frequency Confirmation for  
Catawba Nuclear Station