

## PMSummerColpEM Resource

---

**From:** Gleaves, Bill  
**Sent:** Wednesday, June 28, 2017 7:55 AM  
**To:** PMSummerColpEM Resource  
**Subject:** FW: V.C. Summer GMRS Seismic Audit Plan June 27, 2017  
**Attachments:** V.C. Summer GMRS Seismic Audit Plan.docx

V.C. Summer GMRS Seismic Audit Plan for audit @ WEC office on 6.29.17.

Billy

William (Billy) Gleaves

Lead Project Manager for

V.C. Summer Units 2 and 3

Licensing Branch 4

US NRC, Office of New Reactors

The contents of this message may be sensitive. If this message has been received in error, please delete it without reading it. Your receipt of this message is not intended to waive any applicable privilege. Do not disseminate this message without the permission of the author. Communications by this author are not binding on The Commission.

---

**From:** Chakravorty, Manas  
**Sent:** Wednesday, June 28, 2017 7:26 AM  
**To:** Roche-Rivera, Robert <[Robert.Roche-Rivera@nrc.gov](mailto:Robert.Roche-Rivera@nrc.gov)>  
**Subject:** V.C. Summer GMRS Seismic Audit Plan\_06-27-2017.docx

Robert,

Good document. Minor comments.

Thanks

manas

**Hearing Identifier:** VCSummer\_COL\_Docs\_Public  
**Email Number:** 18

**Mail Envelope Properties** (4f8337d4aedf4d76a5778d7b991f6e5a)

**Subject:** FW: V.C. Summer GMRS Seismic Audit Plan June 27, 2017  
**Sent Date:** 6/28/2017 7:55:17 AM  
**Received Date:** 6/28/2017 7:55:18 AM  
**From:** Gleaves, Bill

**Created By:** Bill.Gleaves@nrc.gov

**Recipients:**  
"PMSummerColpEM Resource" <PMSummerColpEM.Resource@nrc.gov>  
Tracking Status: None

**Post Office:** HQPWMSMRS02.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	912	6/28/2017 7:55:18 AM
V.C. Summer GMRS Seismic Audit Plan.docx		34826

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

VIRGIL C. SUMMER NUCLEAR STATION UNITS 2&3 UPDATED CENTRAL AND EASTERN

UNITED STATES (CEUS) SEISMIC HAZARD ANALYSIS

AUDIT PLAN

LICENSEE South Carolina Electric & Gas Company (SCE&G)

LOCATION Westinghouse Office  
11333 Woodglen Drive, Suite 202  
Rockville, MD 20852

DATE AND TIME 8:30 AM, June 29, 2017

BACKGROUND

By letter dated November 5, 2014 (Reference 1), the NRC staff requested SCE&G, the licensee for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, to provide an updated Ground Motion Response Spectra (GMRS) using the most recent seismic source models and EPRI 2013 ground motion models; describe how the updated GMRS compared with the AP1000 Certified Seismic Response Spectra (CSDRS) and AP1000 Review Level Earthquake (RLE); and describe any exceedances from these comparisons and the frequency range where they occur and whether there is sufficient seismic capacity to bound the effects on in-structure response spectra. In its response dated December 5, 2014 (Reference 2), SCE&G provided the Virgil C. Summer (VSC) Near-Term Task Force (NTTF) Recommendation 2.1 GMRS and compared it with the AP1000 CSDRS and AP1000 RLE. The comparison showed that the VSC NTTF Recommendation 2.1 GMRS exceeded the AP1000 CSDRS and AP1000 RLE in the high-frequency range (above approximately 13 Hz and 25-70 Hz respectively). In its letter dated June 28, 2016 (Reference 3), SCE&G summarized its assessment of the aforementioned spectra exceedances and concluded that its analysis, based on a force comparison for the NI building structures and primary equipment, reinforces the acceptability of the seismic design basis for the plant by demonstrating that the AP1000 CSDRS results in higher loads and stresses than the VCS 2.1 GMRS.

To support the NRC staff's evaluation of SCE&G response dated June 28, 2016, this audit is planned to review applicable documentation relied upon to justify and demonstrate the continued acceptability of the seismic design basis for the plant.

REGULATORY AUDIT BASIS

To support its evaluation of SCE&G response dated June 28, 2016, NRC staff from the Structural Engineering Branch (SEB) in the Division of Engineering and Infrastructure (DEI) will

conduct an audit. The purpose of this audit is to review the SCE&G analysis documentation supporting its response dated June 28, 2016 to confirm the licensee's statement that its analysis reinforces the acceptability of the seismic design basis for the plant by demonstrating that the AP1000 CSDRS results in higher loads and stresses than the VCS 2.1 GMRS.

### REGULATORY AUDIT SCOPE

The objective of this audit is to verify that no additional information is needed related to the SCE&G response dated June 28, 2016 by confirming that the SCE&G analysis summarized in the letter reinforces the acceptability of the seismic design basis for the plant by demonstrating that the AP1000 CSDRS results in higher demands than the VCS 2.1 GMRS. As such the staff plans to audit analysis results that demonstrate that the AP1000 CSDRS results in higher loads and stresses than the VCS 2.1 GMRS. The NRC staff will conduct this audit in accordance with the guidance provided in NRO-REG-108, "Regulatory Audits" (Reference 4).

### DOCUMENTS/INFORMATION NECESSARY FOR THE REGULATORY AUDIT

The following documents are to be made available to the NRC staff for review during the audit:

- Calculation note VSG-PRA-GLR-115
- Any other relevant calculation notes

Appropriate handling and protection of proprietary information shall be acknowledged and observed throughout the audit.

### TEAM ASSIGNMENTS

- Robert Roche-Rivera, NRC, NRO/DEI/SEB, Technical Reviewer
- Billy Gleaves, NRC, NRO/DNRL/LB4 Lead Project Manager

### AUDIT ACTIVITIES

Consistent with the Office of New Reactor's procedure (Reference 4), this audit will be closed to public observation similar to the conduct of an inspection. Based on the identified scope, it is expected that the team will spend one day at the Westinghouse office listed above to conduct the audit.

Communication between SCE&G and the NRC staff will be through conference calls or designated personnel located onsite. After this audit review, any additional information that is necessary for the licensee to supplement its letter response for NRC staff to complete its evaluation will be requested from the licensee either in a request for additional information and/or will be requested to be made available during a future onsite audit.

## LOGISTICS

The audit will consist of NRC staff review of a calculation at Westinghouse's Rockville, Maryland office on June 29, 2017. The NRC staff requests that the documentation remain available for access until the audit summary report is issued.

## DELIVERABLES

A summary report of the audit will be prepared and issued in accordance with NRO-REG-108 (Reference 4) within 45 days following the completion of the audit.

## REFERENCES

1. NRC Letter, "Request for Submittal of Updated Ground Motion Spectra and Foundation Input Response Spectra," dated November 5, 2014 (Accession No. ML14302A180).
2. SCE&G Letter, "Virgil C. Summer Nuclear Station Units 2&3 Response to Nuclear Regulatory Commission (NRC) Request for Submittal of Updated Ground Motion Spectra and Foundation Input Response Spectra," dated December 5, 2014 (Accession No. ML14342A467)
3. SCE&G Letter, "Virgil C. Summer Nuclear Station Units 2&3 Updated Central and Eastern United States (CEUS) Seismic Hazard Analysis," dated June 28, 2016 (Accession No. ML16180A382)
4. NRO-REG-108, "Regulatory Audits," April 2, 2009 (ADAMS Accession No. ML081910260).