

**U.S. Nuclear Regulatory Commission Regulatory Audit of Seismic Hazard Software and New  
Central and Eastern United States (CEUS) Seismic Source Characterization (SSC) Model  
Implementation for Calvert Cliffs Unit 3 (CCNPP3)**

**AUDIT PLAN**

The U.S. Nuclear Regulatory Commission (NRC) staff is preparing to audit distinct seismic hazard calculation software being used by the industry to respond to the Fukushima Near-Term Task Force (NTTF) Recommendation 2.1 seismic Request for Additional Information (RAI) submitted to all combined operating license (COL) applicants. The purpose of the audit is to review seismic hazard software and examine the implementation of the new seismic source models described in NUREG-2115, "Central and Eastern United States Seismic Source Characterization for Nuclear Facilities." The objective is to gain in-depth understanding of the seismic software being used and the implementation of the new seismic source model into the existing codes. Performing this audit will help the NRC staff conduct RAI response reviews more efficiently.

**Regulatory Audit Basis**

The basis for the audit is found in the following regulations:

- Title 10 of the *Code of Federal Regulations* (10 CFR) Part 100 Section 23, "Geologic and seismic siting criteria"
- 10 CFR 52.79, "Contents of applications; technical information in final safety analysis report"

**Regulatory Audit Scope or Methodology**

1. Review seismic hazard software.
2. Review details of the implementation of the new CEUS seismic source model in hazard calculations.
3. Review input parameters and seismic source zones.
4. Review new model computer code implementation by comparing seismic hazard calculations conducted at the seven test sites presented in NUREG-2115.
5. Review any additional test run calculations and conduct simplified test runs.
6. Review application of the new cumulative absolute velocity (CAV) filter settings for removing effect of non-damaging earthquakes in seismic hazard calculations.

**Audit Logistics**

Typical Duration of Audit: 1.5 days

Audit Dates: August 2-3, 2012

Audit Team: Dogan Seber, Surinder Arora, Tanya Ford

**Audit Location** Paul C. Rizzo Associates, Inc.  
500 Penn Center Boulevard  
Penn Center East, Suite 100  
Pittsburgh, PA 15235

**Audit Agenda**

**August 2, 2012**

1:00 P.M – 5:00 P.M. Introduction and overview of the seismic hazard software, hazard calculation procedures, QA process and implementation, discussion on input model preparations, and hazard comparisons with the seven test sites. Review of preliminary hazard calculations for the CCNPP3 site.

**August 3, 2012**

9:00 A.M. – 12:00 P.M. QA documentation review and discussions.

1:00 P.M. – 5:00 P.M. Software test runs, confirmation of the new CEUS source model input parameters, CAV implementation process, and audit closure.