PMHarrisCOL PEmails

From: Manny Comar
Sent: Monday, October 20, 2008 12:28 PM
To: robert.kitchen@pgnmail.com; david.waters@pgnmail.com; Wilkins, Tillie
Cc: HarrisCOL Resource; Manny Comar
Subject: Draft RAI 1443 related to SRP Section: 03.07.02 - Seismic System Analysis
Attachments: RAI 1443.doc

To All,

Attached is a draft RAI 1443 related to SRP Section 03.07.02 - Seismic System analysis for Harris Shearon Harris Units 2 and 3.

If you would like to schedule a conference call to discuss this RAI, please let me know. If no request for a conference call is received, this RAI will be issued as Final.

Thanks,

Manny Comar
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Subject: Draft RAI 1443 related to SRP Section: 03.07.02 - Seismic System Analysis
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From: Manny Comar

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Request for Additional Information No. 1443

Shearon Harris
Progress Energy Carolinas, Inc.
Docket No. 52-022 and 52-023
SRP Section: 03.07.02 - Seismic System Analysis
Application Section: 3.7.1.1.2

QUESTIONS for Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

03.07.02-***

RAI FOR HARRIS SCOL (AP1000) – SITE-SPECIFIC SSI ANALYSES

3.7.2 – Seismic System Analysis

Harris FSAR Section 3.7.1.1.2 states that the Harris Unit 3 NI, the site-specific FIRS exceed the Westinghouse CSDRS in the frequency range of 33-35 Hz. and were considered in a 3D SASSI site-specific soil structure interaction (SSI) analysis (Westinghouse Seismic Bounding Study). It is further stated that the resulting Harris floor response spectra do not exceed the AP1000 spectra at the AP1000 six key NI locations. However, FSAR Section 3.7.1.1.2 does not describe the details of the site-specific SSI analysis which relate to seismic loading assumptions, NI structural modeling, material damping, and analysis results.

Please provide the following information:

1. Details regarding how the Harris site-specific FIRS was considered in the "Westinghouse Seismic Bounding Study" and why it is determined to be adequate.

2. Details should include, but not be limited to, determination of the following:
    a. Spectrum compatible time histories
    b. Soil modulus/damping degradation curves
    c. The development of the lower-bound (LB), upper-bound (UB), and best-estimate (BE) soil profiles
    d. A comparison of the site-specific GMRS to the envelope of the results for the LB, UB, and BE free-field site analyses.

3. Details relating to the modeling of the AP1000 NI (e.g., benchmarking, structural damping, constitutive models, etc.)

4. A comparison of 3D SSI model results to the AP1000 six key NI locations.

5. Details relating to the specific parameters used to employ incoherency effects in the response analysis.

6. Calculation details of the development of the impedance functions (i.e, complex valued frequency dependent functions)
so that the stiffnesses and damping of the soil-structure system can be readily assessed.