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**From:** Uribe, Juan  
**Sent:** Tuesday, September 13, 2011 6:58 PM  
**To:** Khanna, Meena  
**Subject:** RE: final background?

On August 23, 2011, a magnitude 5.8 earthquake occurred approximately 18 miles from the North Anna Nuclear Power Plant (NANPP) located in Louisa, VA. This event resulted in a loss of offsite power and automatic reactor trip of both units.

In response to this event, an Alert was declared due to significant seismic activity on the site. Subsequent to the earthquake, both units were stabilized and offsite power was restored. Following the event, seismic data was retrieved from the installed monitoring system and shipped to the vendor to determine the response spectrum for the event. On August 26, 2011, initial reviews of the data determined that the seismic activity potentially exceeded the Design Basis Earthquake magnitude value above 5 Hz. Therefore, this event was reportable per 10 CFR 50.72(b)(3)(ii) (B) for the nuclear power plant being in an unanalyzed condition that significantly degrades plant safety. On August 26, the licensee declared all safety-related SSCs of Units 1 and 2 inoperable and issued a 10 CFR 50.72 Notification.

In regards to the North Anna Nuclear Power Plant (NANPP) Design Basis Earthquake magnitudes, it has two Safe Shutdown Earthquake (SSE) ground motions, one for structures, systems, and components (SSCs) located on top of rock, which is anchored at 0.12 g, and the other is for SSCs located on top of soil, which is anchored at 0.18 g. The NANPP has two corresponding Operating Basis Earthquake (OBE) ground motion spectra, anchored at 0.09 g for soil and 0.06 g for rock. The current best estimate of the Peak Ground Acceleration (PGA) for the NANPP site is 0.26 g, which contains uncertainty. This estimate indicates that the ground motion likely exceeded the SSE response spectra for NANPP Units 1 and 2 (0.12 g) over a considerable frequency range. The vibratory motion from the 5.8 magnitude earthquake was recorded in all three orientations at several locations in the plant using two types of instruments: the Engdahl scratch plates that record 12 discrete spectral accelerations between 2 and 25.4 Hz, and the Kinometrics analog recorders that recorded time histories of the accelerations. Based on evaluation of recorded plant data, it is concluded that the Central Virginia earthquake of August 23, 2011, exceeded the spectral accelerations for the Operational Basis Earthquake (OBE) and DBE of North Anna Plant.

Currently, both units are in Cold Shutdown with the Residual Heat Removal System providing core cooling. No significant equipment damage to Safety Related system (including Class 1 Structures) has been identified through site walk-downs nor has equipment degradation been detected through plant performance and surveillance testing following the earthquake. The licensee is performing the plant walk downs in accordance with RG 1.167, "Restart of a Nuclear Power Plant Shutdown by a Seismic Event," which endorses EPRI's "Guidelines for Nuclear Plant Response to an Earthquake" with conditions. The licensee indicated that the Spent Fuel Pit cooling system also remains fully functional and the temperature of the Spent Fuel Pit remained unchanged during the event. The licensee also indicated that the vendor will complete the analysis of the seismic data and this information will be utilized to address the long term actions following the earthquake.