

September 15, 2006

APPLICANT: Southern Nuclear Operating Company

PROJECT: Pre-Application for an Early Site Permit

SUBJECT: SUMMARY OF A PUBLIC MEETING ON APRIL 14, 2006, TO DISCUSS
SNC'S SEISMIC PLAN IN AN EARLY SITE PERMIT APPLICATION

The New Reactors AP1000/EPR Projects Branch (NAPB) held a public meeting on April 14, 2006, with Southern Nuclear Operating Company (SNC) to discuss SNC's seismic plan in its early site permit (ESP) application. SNC provided the staff with a formal presentation describing several key aspects of its seismic plan. SNC began its presentation with a brief description of the ESP site in which it also identified the locations of structures of the proposed two new units. SNC noted that the proposed Units would be approximately 1500 feet away from the existing units, and that there would be a single protected area for all four units.

Following the brief description of the ESP site, SNC provided an overview of the ground motion program. The overall ESP project lead will be SNC, and to support the project completion, SNC has contracted out to Bechtel, for project management services and geotechnical tasks. Bechtel also contracted out to William Lettis and Associates, Risk Engineering, and Bechtel San Francisco. Each company will be in charge of specific aspects of the seismic plan. Due to the complexity associated with ground motion issues, and in order to ensure a defensible approach, SNC has formed a ground motion review and advisory committee panel made up of four experts. The role of this expert panel will be to provide an ongoing review and comment on specific tasks. As of April 14, 2006, SNC said that it had completed all of the geological, seismological, and geotechnical investigations for the ESP site, and is on target for an August 2006 submittal of the ESP application.

Scott Lindvall of William Lettis and Associates, Inc. provided the staff with an overview of the results of the geological and seismological investigations. Tectonic features were evaluated as far out as 25 miles from the site. This evaluation consisted of a literature review, contacting of local researchers, air photo interpretations, aerial reconnaissance, field reconnaissance, seismicity review, and seismic reflection profiles at the site. Based on the results of the evaluation conducted, SNC concluded that none of the site vicinity or site area tectonic features are capable tectonic sources. SNC said that by having performed the seismic reflection survey, it was also able to gain more information on the Dunbarton Basin boundary and the location of the Pen Branch Fault.

SNC also discussed the subsurface investigations completed at the ESP site. SNC conducted twelve borings, including one to a depth of 1338 feet for the purposes of hitting rock, and conducted eleven cone-penetration tests. The geophysical testing at the site, which was conducted for three of the boreholes, included suspension P-S velocity logging, caliper/natural gamma measurements, resistivity/spontaneous potential measurements, and boring deviation measurements. The results of these investigations contributed in generating a general subsurface profile. At the top of the profile SNC identified the Upper Sand Stratum - Barnwell Group which ranges in depth from 78 feet to 154 feet, and has a highly variable density along the depth and from borehole to borehole. Therefore SNC is planning to remove this upper layer down to the Blue Bluff Marl layer and replace it with engineered backfill.

SNC provided a description of its update of the Electric Power Research Institute Seismic Owner's Group (EPRI-SOG) seismic sources for the region surrounding the Vogtle site. This update involves an examination of the latest seismicity catalog for the region as well as an update of the Charleston, South Carolina seismic source zone. The update of the Charleston seismic zone involves the incorporation of different source geometries, maximum magnitudes, and recurrence intervals. SNC also showed the NRC staff preliminary results from its probabilistic seismic hazard analysis (PSHA). These results showed the controlling earthquakes for the Vogtle site and the rock uniform ground motion hazard spectra. SNC also described its proposed method for determining the local site ground motion amplification.

SNC described the method it was using in calculating the Vogtle Safe-Shutdown Earthquake (SSE). SNC has decided on pursuing a performance-based approach to achieve a seismic core damage frequency (SCDF) target goal. The target SCDF goal is the industry-proposed value of mean, $5E-6$ /yr, which SNC pointed out provides additional margin as compared to the existing plants. SNC said that the SSE response spectrum will be defined to meet this target goal. In developing the control point for the Vogtle ESP SSE, SNC plans to use the top of the Blue Bluff Marl layer as the point at which the SSE will be specified. This is the result of the removal of the Upper Sand Stratum - Barnwell Group layer.

At the end of the formal presentation, the staff provided feedback to SNC regarding some of the information provided in the meeting. The staff stated that the ESP application should describe in detail how SNC determined that the Pen Branch Fault is a non-capable fault. In addition, the staff commented that the ESP application should clearly document SNC's decision to use the top of the Blue Bluff Marl as the SSE control point. The staff also stated that the applicant should evaluate the latest studies on the Eastern Tennessee Seismic Zone as part of its characterization of the regional seismic source zones. The staff also informed SNC that its proposed use of a $5E-6$ SCDF target for the performance-based approach has not been previously reviewed by the staff and, as such, may require additional review time. The staff also discussed SNC's method for determining the local site response to input seismic ground motion.

Attached to this summary are the materials relevant to the public meetings. The attached documents are as follows: (1) Agenda for April 14th Public Meeting, (2) SNC Slides, (3) List of Meeting Attendees. The NRC maintains an Agencywide Document Access and Management System (ADAMS), which provides text and image files of the NRC's public documents. The documents mentioned above may be accessed by the individual accession numbers or through the ADAMS system under Accession No. ML061920340. If you do not have access to ADAMS or if there are problems in accessing the meeting materials located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737, or by email to pdrr@nrc.gov.

/RA/

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Project No. 737

Attachments: 1. Agenda for April 14th Public Meeting (ML061920296)
2. SNC Slides for April 14th Public Meeting (ML061920330)
3. List of Meeting Attendees for April 14th Public Meeting (ML061920335)

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