UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

June 27, 2006

Mr. C. S. Hinnant
Sr. Vice President and Chief Nuclear Officer
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SUBJECT: PRE-APPLICATION SITE VISIT TO HARRIS NUCLEAR PLANT TO OBSERVE COMBINED LICENSE PRE-APPLICATION SUBSURFACE INVESTIGATION ACTIVITIES (PROJECT NO. 738)

Dear Mr. Hinnant:

On May 17 - 18, 2006, Region II Inspectors conducted a site visit to the Harris Nuclear Plant accompanied by members of the Nuclear Reactor Regulation (NRR) staff. The purpose of the visit was to observe Combined License (COL) pre-application subsurface investigation activities being conducted to obtain geotechnical/seismic data to support a COL application for new nuclear power plants. These observations will provide background information for NRC's future review of the expected COL application for the Harris site.

A summary of the site visit is enclosed, that includes a list of NRC participants and persons with whom discussions were held.

Sincerely,

/RA/

Mark S. Lesser, Chief
Engineering Branch 3
Division of Reactor Safety

Enclosure: As stated

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Sincerely,
/RA/
Mark S. Lesser, Chief
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Enclosure: As stated

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NAME	CJulian	TNazario	RCarrion	CMunson	JStarefos	PfFedrickson	
DATE	6/26/06	6/12/06	6/15/06	6/21/06	6/20/06	6/22/06	
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PRE-APPLICATION SITE VISIT TO HARRIS NUCLEAR PLANT TO OBSERVE
COMBINED OPERATING LICENSE (COL) PRE-APPLICATION
SUBSURFACE INVESTIGATION ACTIVITIES
PROJECT NUMBER 738

Purpose of Visit:

The information gathering visit was conducted by staff of the Nuclear Regulatory Commission (NRC), Region II and the Office of Nuclear Reactor Regulation (NRR). Region II inspectors observed combined operating license (COL) pre-application subsurface investigation activities conducted to obtain geotechnical and seismic data at the proposed location of new nuclear power plants at the Harris site. Although this visit was not termed an NRC inspection, the inspectors employed the guidance of the following documents:

NRC Inspection Manual Chapter 2502, Construction Inspection Program: Pre-Combined License (PRE-COL) Phase
NRC Inspection Procedure 45051, Geotechnical/Foundation Activities Procedure Review
NRC Inspection Procedure 35004, Pre-Docketing Early Site Permit Quality Assurance Controls Inspection

Principal Persons Contacted:

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M. Gavin, Geotechnical Task lead, CH2M HILL
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T. Nazario, RII
R. Carrion, RII

NRC Accompanying Personnel:

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C. Munson, NRR

Background:

During a public meeting at NRC Headquarters, between NRC and Progress Energy, on November 1, 2005, Progress Energy informed the staff that it had selected the Harris site for a COL application, with the intent of submitting the application in 2007. A COL is a combined construction permit and operating license with conditions for a nuclear power facility pursuant to 10 CFR Part 52 Subpart C. Progress Energy has contracted Nustart Energy as a nuclear

services provider to develop the COL application and CH2M HILL to conduct the geological site studies required for the COL application.

Overview of subsurface investigation activities discussed and/or observed:

Progress Energy plans to use the subsurface investigations described below to provide geological data to determine site suitability for a COL. Progress Energy's current subsurface investigation activities were conducted in areas which would be the site of cooling towers, yard structures and the reactor sites. The scope of the site characterization activities includes the following:

- Field Exploration Methods
  - Standard Penetration Testing (SPT)
  - Rock coring
  - Seismic downhole velocity measurements (P-S logging)
  - Borehole televiewer profiles
  - Spectral analysis of surface waves (SASW)
  - Borehole Packer testing
  - Cone Penetration Test (CPT)
  - Observation wells
  - Geologic mapping
  - Test pit excavation and mapping

- Geotechnical Laboratory Testing
  - Age dating
  - Geotechnical index measurement
  - Geotechincal strength testing
  - Dynamic testing

Drilling and sampling observations:

On May 17 and 18, 2006, members of the Region II and NRR team toured the locations where borings were being drilled within the site characterization boundary. The team verified that NRC Regulatory Guide 1.132, "Site Investigations for Foundations of Nuclear Power Plants," was being used as guidance for site investigation activities. The boreholes were being drilled under direction of CH2M HILL using rotary drill rig equipment. Most of the boreholes are planned to be drilled to a minimum depth of 20 ft into competent rock, or to a depth of at least 33 ft below the planned foundation. Three boreholes are planned to approximately 200 ft.

The team was able to observe seismic refraction activities taking place at the site. Seismic refraction profiles are used to measure seismic P-wave velocities of the soil and rock. In addition, the team discussed and observed magnetometer surveys which were being used to locate intrusive dikes in the site area.

Undisturbed sampling operations were not witnessed; however, the team verified that the undisturbed samples collected prior to the team's arrival were properly stored and sealed in accordance with ASTM D4220,"Standard Practices for Preserving and Transporting Soil Samples." The team examined the core sample field log document for samples stored in a controlled environment and noted that three Shelby tube samples were not logged in

accordance with the Site Investigation Workplan procedure, Appendix B. Progress Energy representatives stated they had neglected to update the log when samples were moved recently; they plan to correct the logging oversite and to generate a nonconformance report to address the issue.

Disturbed samples are collected from this operation using a split-barrel sampler. Jar samples are collected, and stored in accordance with ASTM D4220. The team examined samples of the remaining Field Boring Logs and found them adequate.

The team also obtained applicable procedures, for review and discussed technical aspects of the testing with the CH2M HILL and subcontractors staff performing the site investigation. The team inspected the samples stored inside locked SeaLand containers within the owner-controlled area.

The team inquired what quality assurance (QA) measures were being applied to the work and were informed that the fieldwork is being completed in accordance with CH2M HILL's Project Quality Plan. The team reviewed the one QA audit report completed to date and a resulting nonconformance report which had been identified prior to the NRC visit.

All testing activities appeared to be controlled by adequate procedures and standards, with an appropriate level of supervisory and quality assurance oversight. The locations of numerous borings were visited. From these observations, the team considered the work to be adequately controlled and executed.