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

February 20, 2009

Mr. William Levis, President
and Chief Operations Officer
Public Service Energy and Gas Power LLC
80 Park Plaza 4th Floor
Newark, NJ 07102-4194

SUBJECT: NRC VISIT TO THE HANCOCKS BRIDGE, NJ SITE TO OBSERVE EARLY SITE PERMIT SUBSURFACE INVESTIGATION ACTIVITIES (PROJECT NO. 0771)

Dear Mr. Levis:

On January 22, 2009, Region II inspectors conducted a site visit at the Hancock Bridge, NJ site accompanied by members of the Office of New Reactors (NRO) staff. The purpose of the site visit was to observe in-process Early Site Permit (ESP) pre-application subsurface investigation activities being conducted to obtain geotechnical/seismic data to support a future ESP application for a new nuclear power plant. These observations will provide background information for the NRC's future review of the expected ESP application for the Hancock Bridge, NJ site.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agency wide through NRC's Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/readingrm/adams.html.

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

Should you have any questions concerning this meeting, please contact me at 404-562-0554.

Sincerely,

/RA/

Kathleen O'Donohue, Chief
Construction Inspection Branch 2
Division of Construction Inspection

Project No. 0771

Enclosure: As stated

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■ PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE ■ NON-SENSITIVE
ADAMS: ■Yes ACCESSION NUMBER: **ML090510065** ■ SUNSI REVIEW COMPLETE (RJ)

OFFICE	RII:DCI	HQ:NRO					
SIGNATURE	RJ	RJ for					
NAME	RJackson	R Anand					
DATE	2/19/09	2/19/09					
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\CCI\INSPECTION REPORTS\NEW REACTORS\SALEM HOPE CREEK\CIP SALEM HOPE CREEK SITE VISIT REPORT.DOC

Letter to William Levis from Kathleen O'Donohue dated February 20, 2009

SUBJECT: NRC VISIT TO HANCOCKS BRIDGE, NJ SITE TO OBSERVE EARILY SITE PERMIT PRE-APPLICATION SUBSURFACE INVESTIGATION ACTIVITIES (PROJECT NO. 0771)

DISTRUBITION w/encls:
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J. Lizardi, RII
J. Heisserer, RII
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D. Barnhurst, NRO
W. Wang, NRO.
S. Devlin, NRO
R. Rodriguez, NRO
Public

OBSERVATION OF EARLY SITE PERMIT (ESP) PRE-APPLICATION
SUBSURFACE INVESTIGATION ACTIVITIES AT HANCOCKS BRIDGE, NJ SITE
PROJECT NUMBER 0771

Purpose of Site visit:

A site visit was conducted on January 22, 2009, by the Nuclear Regulatory Commission (NRC) Region II and Office of New Reactors (NRO) staff. NRC inspectors observed Early Site Permit (ESP) pre-application subsurface investigation activities conducted to obtain geotechnical and seismic data at the proposed location of the new nuclear power plant at the Hancock's Bridge site in Salem County, New Jersey. Although this visit was not an official NRC inspection the inspectors utilized the following documents for guidance:

- NRC Inspection Manual Chapter 2501, "Construction Inspection Program: Early Sit Permit Phase (ESP)"
- NRC Inspection Procedure 35004, "Pre-Docketing Early Site Permit Quality Assurance Controls Inspection"
- NRC Inspection Procedure 45051, "Geotechnical/Foundation Activities Procedure Review"

The visit served to ascertain whether adequate quality assurance controls had been established and were being implemented and to assess whether the technical requirements for geotechnical exploration for a ESP had been adequately addressed through specifications, drawings, and work procedures.

Principal Persons Contacted:

A. Tice, MACTEC
S. Criscenzo, MACTEC
G. Janosko, PSEG
J. Mallon, PSEG
F. Syms, WLA
D. Robillard, PSEG
I. Owens, Sargent and Lundy
D. Kocunik, Sargent and Lundy
M. Shervin, Sargent and Lundy

NRC Inspectors:

R. Jackson, Senior Construction Inspector, RII
J. Lizardi, Construction Inspector, RII
J. Heisserer, Construction Inspector Trainee, RII

NRC Accompanying Personnel:

R. Anand, Project manager, NRO
D. Barnhurst, Hydrologist, NRO
W. Wang, Geo Tech, NRO
S. Devlin, Geophysicist, NRO
R. Rodriguez, Geo Tech, NRO

Background:

By letter dated December 2, 2008, Public Service Energy and Gas Power LLC (PSEG) informed the NRC of its ongoing geophysical testing intended to support an ESP application for the Hancocks Bridge, NJ site. An ESP is a partial construction permit for a nuclear power facility pursuant to 10 CFR Part 52 Subpart A. PSEG contracted MACTEC to conduct the site specific studies and perform the soil sample accumulation and testing required for an ESP application.

Overview of Subsurface Investigation Activities Discussed and/or Observed:

The NRC team visited the PSEG proposed ESP sites located in Salem County, NJ to observe subsurface geotechnical and geophysical investigations being performed at the sites. PSEG planned to use the subsurface investigations to provide data to determine site suitability for an ESP. PSEG provided a brief presentation covering the planned and ongoing geotechnical activities to be conducted at the site by its contractor MACTEC. The presentation was followed by a site specific safety briefing given by PSEG staff.

Quality Assurance:

Field work was being performed under the MACTEC Quality Assurance (QA) program which is governed by the MACTEC QA manual supplemented by the QA Project Document. MACTEC's QA program was audited and approved by PSEG staff. Periodic surveillances were also performed by PSEG QA personnel. For a sample of drilling activities, the inspectors observed appropriate quality control and technical site characterization procedures and verified that the following attributes were adequate:

- Approved and documented instructions, procedures, and drawings were established, and in use for site characterization activities.
- Measures were implemented for test control and engineering direction was readily available to drill rig technicians in the field.
- Measures existed to identify and resolve non-conformances and conditions adverse to quality.
- Soil boring samples were adequately stored and handled in the field in accordance with procedure.

Inspectors reviewed the following QA documents and technical procedures:

- MACTEC Quality Assurance Project Document, Rev. 0, 12/17/09
- MACTEC E&C Quality Assurance Manual, Rev. 1, 6/17/05
- Work Instruction #1, Performed Duties of the Site Manager, Rev. 0, 12/17/08
- PSEG Site ESP Application Geology and Geotechnical Work Plan, Rev. 1, 12/17/08

Inspectors reviewed copies of the three nonconformance reports (NCRs) generated to date on

the project. The nonconformance reports identified issues with: hammer drop height while taking one sample during Standard Penetration Test (SPT) sampling; drill rods that fell to the bottom of a borehole; and the failure of a rig geologist to collect field level measurements in a borehole prior to beginning drilling. The documented corrective actions appeared appropriate and timely.

Hydrogeology Observation and Discussion:

Observation of work in progress included drilling at borehole and monitoring well locations, collection of core samples and the generation of geologic and geophysical logs. Discussions were held with the applicant and their subcontractors in the office and the drill sites regarding: 1) the characterization of site hydrogeology; 2) the design of the monitoring well network; 3) the description of the groundwater level monitoring program; 4) the development and refinement of a site hydrogeologic conceptual model and alternate conceptual models based on variability and uncertainty of site conditions and parameters; and 5) the development of a bounding set of plausible groundwater pathways that account for hydrogeologic conditions which may create preferential flow paths.

NRO hydrology staff also discussed items which will be important to address as work progresses, such as plans for collection and analysis of parameters important to groundwater flow and transport and future groundwater modeling efforts.

Drilling and Sampling Observed:

Observation of work in progress included drilling, obtaining soil samples, generation of logging records, and review of geophysical measurements. The NRC inspectors verified that the work was being performed in accordance with appropriate procedures.

The inspectors observed drilling at two separate locations, EB-6 and EOW-10L. Each drilling operation was controlled by a MACTEC rig geologist and each rig worked to an individual work instruction. The inspectors observed that the work was in accordance with applicable ASTM standards and procedure requirements. The rig geologist's field boring logs were detailed and provided a record of boring results.

Drilling at EB-6 was intended to accommodate an observation well for water table monitoring. Due to the planned drilling, actual SPT sampling was not performed on any borehole on the day of the visit. The sampling procedure used by the MACTEC drillers was demonstrated on a SPT sample obtained at borehole EB-6. These samples were not intended for geotechnical engineering properties testing. The observed procedure was as follows: after the crew had removed the SPT sampler from the ground, the rig geologist would open the Split Spoon Sampler, photograph the sample, classify it, record it in the field log, and store a representative sample into a moisture proof jar. The jar would later be transported into a storage facility on site. Although boring logs were stored in a locked fire-rated safe as required by procedure, the NRC team observed that no measures were being taken to store electronic photographs of samples in the same manner.

At the EOW-10L boring site, inspectors observed the extraction of two 10-feet long continuous soil samples (R-7 and R-8). Drilling at this site was performed using Rotosonic drilling. Due to the nature of this method, samples obtained can only be used for soil classification purposes.

At EOW-10L, the MACTEC rig geologist generated logging records, which recorded boring location, sample name, depth interval, length, color, and soil classification. Like EB-6, the purpose of this borehole was to accommodate water table monitoring equipment.

The inspectors visited the sample storage facility, which was located in a locked trailer. At the facility, inspectors examined soil samples obtained from SPT testing performed prior to the visit. The inspectors reviewed the MACTEC soil sample inventory sheet to confirm that the boring samples were being properly stored and logged in a controlled manner.

GEOVision was contracted by MACTEC to conduct Geophysical testing and data collection at the site. The inspectors met with a representative from GEOVision to discuss geophysical measurements and analyses. Example measurements that were discussed are P-S suspension logging, resistivity, deviation, caliper log, and natural gamma.

Conclusion:

Geotechnical subsurface investigation activities were being adequately controlled with an appropriate level of supervisory and quality assurance oversight and in accordance with procedural requirements and industry standards. The QA program implementation was evaluated by discussing NCRs generated to date. The inspectors determined that an adequate threshold existed for issuing NCRs.