



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVE., NE., SUITE 1200
ATLANTA, GEORGIA 30303-1257

May 9, 2011

Mr. Joseph A. (Buzz) Miller
Executive Vice President
Southern Nuclear Operating Company
241 Ralph McGill Blvd.
BIN 10232
Atlanta, GA 30308-3374

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 – NRC
INTEGRATED INSPECTION REPORT 05200011/2011001, 05200025/2011002,
05200026/2011001

Dear Mr. Miller:

On March 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant Units 3 and 4. The enclosed inspection report documents the inspection results, which were discussed on April 19, 2011, with Mr. Randy Johnson and other members of your staff.

The inspection examined a sample of construction activities conducted under your early site permit (ESP) and limited work authorization as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your ESP. The inspectors also examined a sample of pre-construction activities that could affect the quality of safety-related structures, systems, and components, and were associated with the proposed inspections, tests, analyses and acceptance criteria (ITAAC) submitted in your application for a combined license for two Westinghouse Advanced Passive (AP1000) pressurized water reactors designated as VEGP Units 3 and 4. Within these areas, the inspection consisted of the selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one for cases where a response is not

required, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

David A. Ayres, Chief
Construction Projects Branch 4
Division of Construction Projects

Docket Nos.: 52-00011, 52-00025, 52-00026
Early Site Permit Number: ESP-004

Enclosure: NRC Inspection Report 05200011/2011001; 05200025/2011002;
05200026/2011001 w/attachment: Supplemental Information

Cc w/ encl: (See next page)

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David A. Ayres, Chief
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Docket Nos.: 52-00011, 52-00025, 52-00026
 Early Site Permit Number: ESP-004

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 05200026/2011001 w/attachment: Supplemental Information

Cc w/ encl: (See next page)

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4

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Letter to Mr. Joseph A (Buzz) Miller from David A. Ayres dated May 9, 2011

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 – NRC
INTEGRATED INSPECTION REPORT 05200011/2011001, 05200025/2011002,
05200026/2011001

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**U.S. NUCLEAR REGULATORY COMMISSION
Region II**

Docket Numbers (Nos.): 052000011 (ESP/LWA); 05200025 (Unit 3); 05200026 (Unit 4)

License No.: ESP-004 (ESP/LWA); N/A (Unit 3); N/A (Unit 4)

Report Nos.: 05200011/2011001; 05200025/2011002; 05200026/2011001

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Electric Generating Plant Units 3 and 4

Location: Waynesboro, GA

Inspection Dates: January 1 through March 31, 2011

Inspectors: Justin D. Fuller, Senior Resident Inspector, Construction Projects
Branch 4 (CPB4) Division of Construction Projects (DCP),
Region II (RII)
Coleman B. Abbott, Construction Resident Inspector, Region II

Accompanying Personnel: None

Approved by: David Ayres, Construction Projects Branch 4, Chief
Division of Construction Projects

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200011/2011001, IR 05200025/2011002, IR 05200026/2011001; 1/1/2011 through 3/31/2011; Vogtle Electric Generating Plant (VEGP) Units 3 and 4, routine integrated inspection report.

The report covered a three month period of inspection by resident inspectors, and no findings of significance were identified.

The Nuclear Regulatory Commission's (NRC's) program for overseeing the construction of commercial nuclear power reactors is described in Inspection Manual Chapter (IMC) 2506, "Construction Reactor Oversight Process General Guidance and Basis Document."

A. NRC-Identified Findings and Licensee-Identified/Self-Revealing Violations Evaluated as Findings.

No findings of significance were identified.

B. Licensee-Identified and Self-Revealing Violations Not Evaluated as Findings.

None

REPORT DETAILS

A. ITAAC-RELATED INSPECTIONS

None

B. NON-ITAAC-RELATED INSPECTIONS

1. Inspection Procedure (IP) 35007, "Quality Assurance Program Implementation and Pre-Construction Activities" (IR 05200011/2011001)

- a. Inspection Scope

The inspectors performed a direct inspection of a sample of construction-related quality assurance program activities, to determine whether Southern Nuclear Operating Company, Inc. (SNC), and where appropriate, their contractors had: (1) developed adequate procedures to implement the applicable project quality assurance (QA) requirements, and (2) effectively executed those procedures during the performance of construction activities authorized by the VEGP Early Site Permit (ESP) and Limited Work Authorization (LWA).

The applicable quality requirements for those activities authorized by the VEGP ESP and LWA were established, in part, by the following:

- Appendix B, "Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities"
- American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA) Standard NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications"
- SNC's Nuclear Development Quality Assurance Manual (NDQAM), Version 9.1
- S&W Standard Nuclear Quality Assurance Program (SWSQAP 1-74A), Revision (Rev.) B
- APP-GW-GAH-010, "Project Quality Assurance Program Interface Plan for Domestic AP1000 Projects," Rev. 4

To determine whether the quality assurance program (QAP) implementing procedures were adequately executed, the inspectors: (1) reviewed a sample of records that furnished evidence of activities affecting quality, (2) observed a sample of quality related activities, and (3) interviewed SNC and contractor personnel responsible for QAP implementation.

- a1. Inspection Scope (IP35007 - Appendix 2, "Inspection of Criterion II – Quality Assurance Program")

IP 35007 – Appendix 2, Section A2.04.02, Inspection of QAP Implementation

The inspectors reviewed the most recent revision of SNC's NDQAM (Version 9.1) to determine whether changes were adequately documented and submitted to the NRC

in accordance with licensee procedure ND-QA-002, "NDQAM Control and Development," Version 3.0 and 10 CFR Part 50. The inspectors reviewed the summary of changes from version 9.0 to 9.1 and version 9.1 to 9.2 to determine whether each change represented a reduction in the commitments previously accepted by the NRC. Specifically, the inspectors reviewed the applicable 10 CFR 50.55(f) evaluation for each change. For the change from version 8.1 to version 9.0, the inspectors verified that the licensee had submitted the change to the NRC within 90 days, as required by 10 CFR 50.55(f).

a2. Inspection Scope (IP 35007 - Appendix 12, "Inspection of Criterion XII – Control of Measuring and Testing Equipment")

IP 35007 – Appendix 12, Section A12.04.01, Inspection of QA Implementing Documents

The inspectors noted that MACTEC Engineering and Consulting, Inc. (herein referred to as MACTEC) was contracted to perform safety-related testing activities associated with the VEGP Units 3 and 4 backfill activities. The inspectors reviewed the following MACTEC QAP documents to determine whether MACTEC had established adequate measures to assure that tools, gages, instruments, and other measuring and testing equipment (M&TE) used in activities affecting quality were properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits:

- MACTEC Quality Assurance Project Document, Plant Vogtle Units 3 & 4 Soil and Concrete Testing, Rev. 1
- Section QS-12, "Control of Measuring and Testing Equipment," of MACTEC's Nuclear Quality Assurance Manual (NQAM), Rev. 0
- MACTEC's Equipment Calibration Manual, Rev. 1
- Attachment 5, "Procedure for Acceptance of Equipment," of MACTEC's Vogtle Electric Generating Plant Units 3 & 4 Soil and Concrete Testing Work Plan, Rev. 3

The inspectors compared the above documents to Basic Requirement 12, "Control of Measuring and Test Equipment," and Supplement 12S-1, "Supplementary Requirements for Control of Measuring and Test Equipment," of ASME NQA-1-1994; and Criterion XII, "Control of Measuring and Test Equipment," of 10 CFR Part 50, Appendix B. Specifically, the inspectors reviewed the above procedures to determine whether they adequately addressed the following:

- Only calibrated M&TE will be used, when the use of such M&TE has been determined
- Calibration was performed at prescribed intervals, or before use
- Calibration performed when the accuracy of calibrated M&TE is suspect
- Calibrated M&TE is labeled/tagged/suitably marked or documented
- Out-of-calibration M&TE is tagged or segregated to ensure that it is not used
- Calibrated M&TE is handled and stored to maintain accuracy

IP 35007 – Appendix 12, Section A12.04.02, Inspection of QAP Implementation

The inspectors observed MACTEC's onsite soil testing laboratory to determine whether M&TE controls were consistent with MACTEC's NQAM and other applicable quality requirements, including project specific requirements imposed by Shaw Stone and Webster, Inc. (S&W) through the procurement documents. During the inspection, the inspectors verified the following aspects of MACTEC's M&TE program:

- Verified that a tracking system was in place to control the use of M&TE
- Selected a sample of calibrated M&TE from the tracking system of active M&TE used to conduct soil testing and verified that the M&TE was:
 - Identified by a unique number
 - Tagged or labeled to indicate current calibration status
 - Properly stored
- Toured the soils testing areas, and selected a sample of M&TE and verified that the items were tagged or labeled to indicate the current calibration status. Specifically, the inspectors observed the following items:
 - Oven; Laboratory Identification (LID) # 2963
 - Oven; LID # 2948
 - Mechanical Sieve Shaker; LID # 2944
 - Sand Cone Density Apparatus; LID # 3294
 - Sand Cone Density Apparatus; LID # 3340
 - Sand Cone Density Apparatus; LID # 3338
- Examined related calibration documentation to verify that M&TE was calibrated within specified calibration intervals
- Verified that M&TE deleted from the tracking system had been permanently removed from service or segregated

a3. Inspection Scope (IP35007 – Appendix 15, “Inspection of Criterion XV – Nonconforming Materials, Parts, or Components”)

IP 35007 – Appendix 15, Section A15.04.01, Inspection of QA Implementing Documents

The inspectors reviewed S&W Nuclear Quality Standard (QS) 15.1, “Nonconformance and Disposition Report,” Rev. F, to determine whether S&W established adequate measures to control materials, parts, or components that may not conform to specified requirements to prevent their inadvertent use or installation. The inspectors compared QS 15.1 to the applicable quality requirements established by 10 CFR Part 50, Appendix B, Criterion XV, “Nonconforming Materials, Parts, or Components”; ASME NQA-1-1994, Basic Requirement 15, “Control of Nonconforming Items”; and the S&W Standard Nuclear Quality Assurance Program (SWSQAP 1-74A), Rev. B.

The inspectors reviewed QS 15.1 to determine whether the following attributes were prescribed by the procedure:

- The control of nonconforming items would be accomplished by marking, tagging, or segregation

- The review of nonconformances would be performed to determine the disposition of accept, reject, repair, rework, or use-as-is
- The notification to appropriate organizations would be made when appropriate
- The documentation of nonconforming items was adequate to support the disposition

IP 35007 – Appendix 15, Section A15.04.02, Inspection of QAP Implementation

The inspectors reviewed a sample of S&W Nonconformance & Disposition Reports (N&Ds) to determine whether the conditions were adequately reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures. The inspectors compared these N&Ds to Section 15, “Nonconforming Materials, Parts, or Components,” of the S&W Nuclear Quality Assurance Program (SWSQAP 1-74A) and S&W procedure QS 15.1, “Nonconformance & Disposition Report,” Rev. F. The inspectors reviewed the following N&Ds: V-ND-10-0100; V-ND-10-0115; V-ND-11-0034; V-ND-11-0023.

a4. Inspection Scope (IP 35007 - Appendix 16, “Inspection of Criterion XVI – Corrective Action”)

IP 35007 – Appendix 16, Section A16.04.01, Inspection of QA Implementing Documents

The inspectors reviewed SNC’s corrective action program procedure ND-AD-002, “Nuclear Development Corrective Action Program,” Version 3.0 and 4.0 and S&W procedure QS 16.5, “Corrective Action System,” Rev. D; to determine whether SNC and S&W had established adequate measures to assure that conditions adverse to quality were promptly identified and corrected. The inspectors reviewed these procedures to determine whether the following attributes were adequately prescribed:

- That the classification, prioritization, and evaluation for reportability (i.e., 10 CFR 50.55(e)) of conditions adverse to quality were controlled
- That the procedure provided adequate guidance for the complete and accurate identification of the problem in a timely manner commensurate with its significance and ease of discovery
- That the procedure provided guidance for the consideration of extent of condition, generic implications, common cause, and previous occurrences
- That the procedure provided guidance for escalating to higher management those corrective actions that were not adequate or not timely

IP 35007 – Appendix 16, Section A16.04.02, Implementation of Corrective Action Program

On a routine basis, the inspectors reviewed a sample of issues entered into the SNC and S&W corrective action programs to determine whether conditions adverse to quality were controlled in accordance with the companies’ QAP and whether potential adverse trends were appropriately identified and corrected by SNC or their contractors. Specifically, the inspectors performed the following: (1) attended

weekly issue review committee meetings at the site; (2) reviewed a sample of SNC and S&W corrective action documents; and (3) held discussions with SNC and S&W personnel responsible for the screening and correction of the issues.

The inspectors selected a sample of issues entered in the SNC and S&W corrective action programs to determine whether the handling of these issues was consistent with the applicable QAP requirements; and 10 CFR Part 50, Appendix B.

Specifically, the inspectors reviewed the following SNC Condition Reports (CRs): CR 2010100261, CR 2010100442, and CR 2011100075 to determine whether:

- Conditions adverse to quality were promptly identified and corrected
- Classification and prioritization of the resolution of the problem was commensurate with its safety significance
- For significant conditions adverse to quality: (1) the cause was determined, (2) corrective actions were taken to prevent recurrence, and (3) the cause and corrective actions taken were documented and reported to appropriate levels of management
- Conditions were appropriately screened if required
- The organization properly evaluated and reported the condition (e.g., 10 CFR 50.55(e), 10 CFR Part 21)

a5. Inspection Scope (IP 35007 - Appendix 18, "Inspection of Criterion XVIII – Audits")

IP 35007 – Appendix 18, Section A18.04.02, "Inspection of QA Program Implementation"

The inspectors reviewed SNC's 2011/2012 corporate and site nuclear development quality assurance audit schedule, dated March 22, 2011, to determine whether internal and external quality assurance audits were scheduled in a manner to provide coverage and coordination with ongoing quality assurance program activities.

b. Findings

No findings of significance were identified.

2. IP 35007, "Quality Assurance Program Implementation and Pre-Construction Activities"; (IMC 2502-07.02, "Pre-Construction Activity Inspections") - (IRs 05200025/2011002, 05200026/2011001)

a. Inspection Scope

The inspectors performed a direct inspection of a sample of pre-construction activities that could affect the quality of the VEGP Unit 3 containment vessel (CV) bottom head. The purpose of this inspection was to gather information associated with SNC's implementation of their QAP and oversight of their contractors and subcontractors who perform pre-construction activities in support of facility construction. The inspectors used IP 35007 to evaluate SNC's implementation of Criterion VII, "Control of Purchased Material, Equipment, and Services," of 10 CFR Part 50, Appendix B. Specifically, the inspectors evaluated SNC's measures to

assure that purchased material, equipment, and services, purchased through their contractor and subcontractor, conformed to the procurement documents.

Specifically, the inspectors reviewed SNC surveillance report NDQA-2010-S21, dated 12/13/2010, which was related to the CV fabrication activities; and surveillance report NDQA-2011-S02, dated 1/26/2011, which was related to an evaluation of Westinghouse Electric Company's oversight of the Chicago Bridge and Iron containment vessel plate storage areas. The inspectors reviewed this report to determine whether SNC adequately implemented Section 7.1, "Acceptance of Item or Service," of their NDQAM, quality assurance program implementing procedure ND-QA-006, "Supplier Quality Surveillance," Version 4.0; and ND-QA-003, "Quality Assurance Surveillances," Version 3.0. The inspectors also reviewed the following SNC CRs, which were generated as a result of SNC's surveillance, to determine whether SNC appropriately identified the issues in their corrective action program: CRs 2010100465, 2010100466, and 2010100467.

b. Findings

No findings of significance were identified.

C. OTHER INSPECTION RESULTS

None

D. EXIT MEETING SUMMARY

On April 19, 2011, the NRC resident inspectors presented the inspection results to Mr. Randy Johnson, Quality and Compliance Vice President for VEGP Units 3 and 4, and other management representatives for SNC and the consortium. The inspectors stated that no proprietary information would be included in the inspection report.

KEY POINTS OF CONTACT

SNC and Contractor Personnel

D. Jones	SNC Site Vice President VEGP Units 3 & 4
R. Johnson	SNC Quality and Compliance Vice President
J. Davis	SNC Licensing Supervisor
P. Albuquerque	SNC Sr. Licensing Engineer
R. Pate	SNC Licensing Engineer
T. O'Brien	SNC Quality Control Supervisor
W. Crisler	S&W Project Quality Assurance Director
J. Beasley	S&W QC Engineering Manager
W. Poppell	S&W Field Engineering Manager
J. Detwiler	S&W Geotechnical Engineer
S. Woodham	MACTEC Project Coordinator
J. Martin	MACTEC Quality Assurance Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
None	N/A	N/A

LIST OF DOCUMENTS REVIEWED

Procedures

SNC

NDQAM, "Nuclear Development Quality Assurance Manual," Version 9.1
ND-AD-002, "Nuclear Development Corrective Action Program," Versions 3.0 and 4.0
ND-QA-002, "Quality Assurance NDQAM Control and Development," Version 3.0
ND-QA-003, "Quality Assurance Surveillances," Version 3.0
ND-QA-006, "Supplier Quality Surveillance," Version 4.0

S&W

Standard Nuclear Quality Assurance Program, SWSQAP 1-74A, Rev. B
QS 15.1, "Nonconformance and Disposition Report," Rev. F
QS 16.5, "Corrective Action System," Rev. D

MACTEC

Nuclear Quality Assurance Manual, Rev. 0

Quality Assurance Project Document, "Plant Vogtle Units 3 & 4 Soil and Concrete Testing," Rev. 1
MACTEC Equipment Calibration Manual, Rev. 1
VEGP Units 3&4 Soil and Concrete Testing Work Plan; MACTEC Project 6153-10-0051;
Contract No. 1321751004-1421, Rev. 3

Consortium Procedures

APP-GW-GAH-010, "Project Quality Assurance Program Interface Plan for Domestic AP1000 Projects," Rev. 4

Surveillances and Audits:

NDQA-2010-S21, dated 12/13/2010
NDQA-2011-S02, dated 1/26/2011

Corrective Action / Nonconformance Records:

N&D Report No. V-ND-10-0100
N&D Report No. V-ND-10-0115
N&D Report No. V-ND-11-0034
N&D Report No. V-ND-11-0023
CR No. 2010100442
CR No. 2010100465
CR No. 2010100466
CR No. 2010100467
CR No. 2011100075

Miscellaneous:

SNC 10 CFR 50.55(f) Evaluations dated 11/4/2010 and 2/4/2011
ND-11-0521, 2011/2012 Corporate and Site Nuclear Development Quality Assurance Audit Schedule (Rev. 1), dated March 22, 2011

LIST OF ACRONYMS

ADAMS	Agency-wide Documents Access & Management System
AP1000	Westinghouse Advanced Passive Pressurized Water Reactor
ASME	American Society of Mechanical Engineers
CR	Condition Report
CV	Containment Vessel
ESP	Early Site Permit
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ITAAC	Inspections, Tests, Analyses and Acceptance Criteria
LID	Laboratory Identification
LWA	Limited Work Authorization
MACTEC	MACTEC Engineering and Consulting, Inc
M&TE	Measuring and Test Equipment
N&D	Nonconformance and Disposition Report
NDQAM	Nuclear Development Quality Assurance Manual
No.	Number
NQA	Nuclear Quality Assurance
NQAM	Nuclear Quality Assurance Manual
NRC	Nuclear Regulatory Commission
QA	Quality Assurance
QAP	Quality Assurance Program
QS	Quality Standard
Rev.	Revision
S&W	Shaw Stone and Webster, Inc
SNC	Southern Nuclear Operating Company, Inc (Licensee)
VEGP	Vogtle Electric Generation Plant
10 CFR	Title 10 of the <i>Code of Federal Regulations</i>