



Michael J. Yox
Regulatory Affairs Director
Vogtle 3 & 4

7825 River Road
Waynesboro, GA 30830
706-848-6459 tel
410-474-8587 cell
myox@southernco.com

MAR 3 1 2017

Docket No.: 52-026

ND-17-0572
10 CFR 52.99(c)(1)

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of ITAAC 2.5.02.07a [Index Number 534]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.5.02.07a [Index Number 534] for verifying a report exists and concludes that the isolation devices prevent credible faults from propagating into the Protection and Safety Monitoring System (PMS) from the Plant Control System (PLS). The closure process for this ITAAC is based on the guidance described in NEI 08-01, Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52, which was endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact David Woods at 706-848-6903.

Respectfully submitted,


Michael J. Yox
Regulatory Affairs Director Vogtle 3&4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.5.02.07a [Index Number 534]

MJY/kjd/amm

To:

Southern Nuclear Operating Company/ Georgia Power Company

Mr. D. A. Bost (w/o enclosures)
Mr. M. D. Rauckhorst (w/o enclosures)
Mr. M. D. Meier
Mr. D. H. Jones (w/o enclosures)
Ms. K. D. Fili
Mr. D. L. McKinney
Mr. M. J. Yox
Mr. D. L. Fulton
Mr. D. F. Woods
Mr. F. H. Willis
Ms. A. L. Pugh
Mr. A. S. Parton
Mr. W. A. Sparkman
Mr. C. E. Morrow
Ms. K. M. Stacy
Mr. J. P. Redd
Ms. A. C. Chamberlain
Mr. D. R. Culver
Document Services RTYPE: VND.LI.L06
File AR.01.02.06

cc:

Nuclear Regulatory Commission

Mr. W. Jones (w/o enclosures)
Ms. J. M. Heisserer
Mr. C. P. Patel
Mr. M. E. Ernstes
Mr. G. J. Khouri
Mr. T. E. Chandler
Ms. S. E. Temple
Ms. P. Braxton
Mr. T. C. Brimfield
Mr. A. J. Lerch
Mr. C. J. Even
Ms. V. L. Ordaz
Mr. B. J. Davis

Oglethorpe Power Corporation

Mr. K. T. Haynes
Mr. R. B. Brinkman

Municipal Electric Authority of Georgia

Mr. J. E. Fuller
Mr. S. M. Jackson

U.S. Nuclear Regulatory Commission

ND-17-0572

Page 3 of 3

Dalton Utilities

Mr. T. Bundros

WECTEC

Mr. C. A. Castell

Westinghouse Electric Company, LLC

Mr. R. Easterling (w/o enclosures)

Mr. G. Koucheravy (w/o enclosures)

Mr. D. C. Durham (w/o enclosures)

Mr. R. Pitts (w/o enclosures)

Ms. K. B. Chesko

Mr. J. Hopkins

Mr. D. Hawkins

Mr. C. F. Landon

Mr. M. L. Clyde

Ms. S. DiTommaso

Mr. A. F. Dohse

Other

Mr. J. E. Hesler, *Bechtel Power Corporation*

Ms. L. Matis, *Tetra Tech NUS, Inc.*

Dr. W. R. Jacobs, Jr., Ph.D., *GDS Associates, Inc.*

Mr. S. Roetger, *Georgia Public Service Commission*

Ms. S. W. Kernizan, *Georgia Public Service Commission*

Mr. K. C. Greene, *Troutman Sanders*

Mr. S. Blanton, *Balch Bingham*

**Southern Nuclear Operating Company
ND-17-0572
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.5.02.07a [Index Number 534]**

ITAAC Statement

Design Commitment:

7.a) The PMS provides process signals to the PLS through isolation devices.

Inspections, Tests, Analyses:

Type tests, analyses, or a combination of type tests and analyses of the isolation devices will be performed.

Acceptance Criteria:

A report exists and concludes that the isolation devices prevent credible faults from propagating into the PMS.

ITAAC Determination Basis

Type testing and analyses of the isolation devices, including the Protection and Safety Monitoring System (PMS) cabinets and reactor trip switchgear, were performed to verify that devices prevent credible faults from propagating into the PMS from the Plant Control System (PLS). The isolation methods utilized to prevent credible faults from propagating into the PMS from the PLS are fiber-optic transmission, relay isolation, and inductive isolation (i.e. transformer coupled). The type testing was performed in accordance with Institute of Electrical and Electronics Engineers (IEEE) Standard 384-1981 (Reference 1) to meet the requirements of IEEE Standard 603-1991 (Reference 2) as endorsed by U.S. NRC Regulatory Guide 1.153 and with the methods and test levels specified in U.S. NRC Regulatory Guide 1.180 to qualify the isolation barrier assemblies.

The testing and supportive analysis demonstrated that the maximum credible faults applied to the non-Class 1E side of the isolation barrier did not degrade the intended safety function of PMS. This was accomplished by completing the prescribed tests under conditions where the non-Class 1E side of the isolation barrier is exposed to calculated credible faults in the form of 580 VAC 65 kA and 300 VDC 40 kA for differential faults and 580 VAC 50 A and 300 VDC 50 A for common-mode, while the Class 1E side of the isolation barrier was monitored for perturbations.

As electrical surges have been identified as credible faults, the isolation devices were subjected to ± 2 kVDC surge (combination wave), ± 2 kVDC surge (ring wave), and ± 2 kVDC surge (Electrical Fast Transient). Surge testing was performed in accordance with International Electrotechnical Commission (IEC) Standard IEC 61000-4 (Reference 3) as endorsed by Regulatory Guide 1.180.

Analysis was performed for fiber-optic communication media, which provides a high level of electrical isolation. Electrical faults that occur on one end of the fiber-optic link cannot be transmitted into the equipment on the other end. This maintains the independence of the interconnected system components by preventing faults from propagating into multiple components and leading to a loss of safety function. Due to the inherent properties of fiber optic cable, fault testing is not necessary.

The results of the tests and analyses are documented in isolation summary and test reports (References 4 and 5) and conclude that the isolation devices prevent credible faults from propagating into the PMS.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all ITAAC findings pertaining to the subject ITAAC and associated corrective actions. This review found one (1) open Notice of Nonconformance (NON) associated with this ITAAC:

- NON 99900404/2015-204-01

The NON is open, however, the corrective actions have been completed. The ITAAC completion review document number is included in the Vogtle Unit 4 ITAAC Completion Package for ITAAC 2.5.02.07a (Reference 6) and available for Nuclear Regulatory Commission (NRC) inspection.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.5.02.07a was performed for VEGP Unit 4 and that the prescribed acceptance criteria are met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. IEEE Standard 384-1981, "IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits"
2. IEEE Standard 603-1991, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations"
3. IEC Standard 61000-4, "Electromagnetic compatibility (EMC) – Part 4 Testing and measurements techniques"
4. APP-PMS-VBR-015, Revision 2, "AP1000 Protection and Safety Monitoring System Isolation Summary Report for Use in the AP1000 Plant"
5. APP-JY50-T2R-001, Revision 0, "Reactor Trip Switchgear IEEE 384 Fault Test Report"
6. SVP_SV0_004268, Attachment 1, "Submittal of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Completion Package for Unit 4 ITAAC 2.5.02.07a [COL Index Number 534] (Isolation Devices for the Prevention of Fault Propagation into PMS from PLS)"