

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

October 18, 2016

Mr. Ronald A. Jones
Vice President, New Nuclear Operations
South Carolina Electric and Gas
P.O. Box 88 (Mail Code P40)
Jenkinsville, SC 29065-0088

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 – NRC PROGRAM
INSPECTION FOR CORRECTIVE ACTION PROGRAM IMPLEMENTATION
INSPECTION, REPORTS 05200027/2016007 AND 05200028/2016007

Dear Mr. Jones:

On September 16, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Virgil C. Summer Nuclear Station Units 2 and 3. The enclosed inspection report documents the inspection results, which the inspectors discussed on September 16, 2016, with Mr. Dan Gatlin and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to problem identification and resolution, compliance with the Commission's rules and regulations, and the conditions of your license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

Based on the inspection sample, the inspection team concluded that the implementation of the corrective action program and overall performance related to identifying, evaluating, and resolving problems at Virgil C. Summer Nuclear Station Units 2 and 3 was adequate. Licensee and contractor-identified problems were entered into the corrective action program at an appropriate threshold. Problems were effectively prioritized and evaluated commensurate with the safety significance of the problems. Corrective actions were effectively implemented in a timely manner commensurate with their importance to safety and addressed the identified causes of problems. Lessons learned from industry construction experience were effectively reviewed and applied when appropriate. Audits and self-assessments were generally used to identify problems and appropriate actions.

This report documents one licensee-identified violation, which was determined to be of very low safety significance. Because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating this finding as non-cited violation consistent with Section 2.3.2 of the NRC's Enforcement Policy.

In accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response (if any), will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's

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Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Michael Ernstes, Chief
Construction Inspection Branch 3
Division of Construction Oversight

Docket Nos.: 5200027, 5200028

License Nos: NPF-93, NPF-94

Enclosure: NRC Inspection Report (IR) 05200027/2016007, 05200028/2016007
w/ attachment: Supplemental Information

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| NAME | C. Jones | B. Griman | S. Smith | C. Read | G. Khouri | T. Nazario | A. Lerch |
| DATE | 10/04/2016 | 10/05/2016 | 10/07/2016 | 10/04/2016 | 10/04/2016 | 10/11/2016 | 10/14/2016 |
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**U.S. NUCLEAR REGULATORY COMMISSION
Region II**

Docket Numbers: 5200027
5200028

License Numbers: NPF-93
NPF-94

Report Numbers: 05200027/2016007
05200028/2016007

Licensee: South Carolina Electric & Gas

Facility: Virgil C. Summer Nuclear Station Unit 2 & 3

Location: Jenkinsville, SC

Inspection Dates: September 12, 2016 through September 16, 2016

Inspectors: C. Read, Resident Inspector, DCO
C. Jones, Senior Construction Inspector, DCO
G. Khouri, Senior Construction Project Inspector, DCO
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Accompanying Personnel: Brian Griman, RII Inspector (Trainee)

Approved by: Michael Ernstes, Branch Chief
Construction Inspection Branch 3
Division of Construction Oversight

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05200027/2016007, 05200028/2016007; 09/12/2016 through 09/16/2016; Virgil C. Summer Nuclear Station Unit 2, Virgil C. Summer Nuclear Station Unit 3, NRC program inspection for annual Corrective Action Program Implementation.

This report covers an announced team inspection of the corrective action program (CAP) procedures and implementation by regional and resident inspectors. 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."

Problem Identification and Resolution.

Based on the inspection sample, the inspection team concluded that the implementation of the CAP and overall performance related to identifying, evaluating, and resolving problems at Virgil C. Summer Nuclear Station Units 2 and 3 was adequate. Licensee and contractor identified problems were entered into the CAP at an appropriate threshold. Problems were prioritized and evaluated commensurate with the safety significance of the problems. Corrective actions were effectively implemented in a timely manner commensurate with their importance to safety and addressed the identified causes of problems. The inspectors did not identify issues that were not already addressed by a licensee audit or condition report. Lessons learned from industry construction experience were effectively reviewed and applied when appropriate. Audits and self-assessments were generally used to identify problems and appropriate actions. Based on the independent assessment of safety culture results, interviews conducted during the inspection, and a review of the employee concerns program, employee freedom to raise nuclear safety concerns without fear of reprisal appeared to be demonstrated.

A. NRC-Identified and Self Revealed Findings

No findings were identified

B. Licensee-Identified Violations

A violation of very low safety or security significance that was identified by the licensee has been reviewed by the NRC. Corrective actions taken by the licensee have been entered into the licensee's CAP. This violation and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

1. CONSTRUCTION REACTOR SAFETY

Cornerstones: Design/Engineering, Procurement/Fabrication, Construction/Installation, Inspection/Testing

IMC 2504, Construction Inspection Program – Inspection of Construction and Operational Programs

1P01 Construction QA Criterion 16 - CAP - Assessment of the Corrective Action Program Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's CAP to determine if the licensee was effectively implementing their approved quality assurance plan as required by 10 CFR Part 50, Appendix B. Following a reorganization of the engineering, procurement, and construction (EPC) contractor onsite, the CAPs were reorganized as well. The licensee delegated responsibility for implementing elements of the CAP to its contractor. The delegation was permitted by the licensee's quality assurance plan; however, the plan also stated that the licensee maintained responsibility for the effectiveness of corrective action measures. Consequently, the inspection scope included a review of programs established by both the licensee and its contractors.

The inspectors reviewed implementing procedures and documents for the identification, evaluation, and resolution of conditions adverse to quality. The review was performed to determine whether the procedures and documents established by the licensee and their EPC followed the licensee's quality assurance program description (QAPD) requirements and Final Safety Analysis Report (FSAR) commitments. The review scope included an evaluation whether the following CAP performance attributes were addressed:

- classification, prioritization, and evaluation for reportability of conditions adverse to quality;
- complete and accurate identification of problems in a timely manner commensurate with their significance and ease of discovery;
- screening of items entered into the CAP as necessary to determine the proper level of evaluation;
- identification and correction of procurement program deviations and deficiencies;
- identification and correction of design deficiencies or errors;
- considerations for extent of conditions, generic implications, common causes, and previous occurrences as appropriate;
- classification and prioritization of the resolution of problems commensurate with safety significance;

- for significant conditions adverse to quality, identification of root and contributing causes, as well as actions to preclude recurrence;
- identification of corrective actions that were appropriately focused to correct the problem;
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue (including the use of interim corrective actions and/or compensatory actions to minimize the problem and/or mitigate its effects until permanent actions can be implemented);
- provisions for escalating to higher management those corrective actions that are not adequate or not timely;
- overview of trends in conditions adverse to quality;
- coverage to include important non-safety related structures, systems, and components (SSCs); and
- evaluation of operating experience (OE) information.

The inspectors reviewed a sample of issues processed or identified since the last CAP inspection in April 2015 to evaluate whether the CAPs were implemented in accordance with program procedures. The selection of issues included a diverse sample across the three CAPs used by the licensee and the EPC contractor. The inspectors sampled issues related to conditions adverse to quality, issues categorized as significant conditions adverse to quality, and items that had been determined to not represent conditions adverse to quality to determine whether:

- conditions adverse to quality were promptly identified and corrected;
- classification and prioritization of the resolution of each problem was commensurate with its safety significance;
- conditions were screened upon entry into the CAP to determine the proper level of evaluation;
- the items entered into the CAP included the identification and correction of issues throughout all aspects of the project scope;
- for significant conditions adverse to quality, the cause was determined, corrective actions were taken to prevent recurrence, and the cause and corrective actions taken were documented and reported to appropriate levels of management;
- proper consideration of extent of conditions, generic implications, common causes, and previous occurrences was performed;
- the corrective actions developed were appropriately focused to ensure the problems were corrected;
- the licensee and their contractors properly evaluated and reported conditions in accordance with 10 CFR 50.55(e) and 10 CFR 21;
- the identification and correction of design deficiencies were being adequately addressed;
- extent of conditions were adequately addressed and appropriate corrective actions were developed and implemented; and
- the evaluations properly considered the escalation of issues to higher management if the corrective actions were not adequate or timely.

The inspectors reviewed the procedures and a sample of issues from the licensee observation program to determine if the licensee was identifying conditions adverse to quality (CAQs) and transferring those issues to the respective CAP program.

The inspection scope included an evaluation of the handling of issues introduced into the CAPs from sources such as:

- self-assessments and audits;
- NRC generic communications; and
- operating and construction experience (ConE)

The processing of identified issues was evaluated to determine whether personnel were identifying issues at the proper threshold, entering the issues into the CAP in a timely manner, and assigning the appropriate prioritization for resolution of the issues. The inspectors also determined whether personnel assigned the appropriate investigation method to ensure the proper determination of root, apparent, and/or contributing causes. The inspectors evaluated the timeliness and effectiveness of corrective actions, and actions to prevent recurrence where required by 10 CFR Part 50, Appendix B.

The inspectors evaluated the CAP screening for potentially significant and reportable conditions to determine whether reviewers adequately considered risk, safety significance, consequence of malfunctions or failures, complexity of design and fabrication, needs for special controls or surveillance over activities, the degree to which functional compliance could be demonstrated by inspection or test, the quality history and degree of standardization of items, and the difficulty of repair or replacement. In addition, the inspectors reviewed previously identified 10 CFR 50.55(e) notifications sent by the licensee to the NRC to determine whether the licensee and their contractor adequately described the issue, met the timelines for evaluation and reportability, and performed adequate corrective actions.

The inspectors reviewed a sample of Nonconformance and Disposition reports (N&Ds) to determine whether:

- the reports correctly and clearly identified the nonconformances;
- the N&Ds were adequately initiated, processed, reviewed, dispositioned, and closed in accordance with the quality assurance program implementing documents for the control of nonconforming material, parts, and components;
- N&Ds were appropriately screened for non-hardware related conditions adverse to quality;
- reportability screening and evaluations under 10 CFR Part 21 and 10 CFR 50.55(e) were performed;
- applicability to project documents, records, and inspections, tests, analysis, and acceptance criteria (ITAAC) was properly identified and documented;
- the dispositions were properly identified and documented;
- adequate technical justification for the acceptability of a nonconforming item, dispositioned repair, or use-as-is was appropriately documented;
- nonconformances dispositioned use-as-is or repair were subjected to design control measures commensurate with those applied to the original design; and
- repaired or reworked items were re-examined in accordance with applicable procedures and with the original acceptance criteria unless the disposition had established alternate acceptance criteria.

As part of the N&D review, inspectors also reviewed the contractor Significance Evaluation Screening and N&D Trend Analysis/Reporting Programs.

In addition, inspectors reviewed applicable Engineering and Design Coordination Reports (E&DCRs) to determine if:

- the licensee was identifying design issues at an appropriate threshold;
- design activities were completed in accordance with the approved procedures;
- design inputs were correctly identified and documented, and were reviewed and approved by the responsible engineering group;
- deviations from requirements were effectively dispositioned; and
- documents were consistent with the design commitments and requirements of the technical specifications, the FSAR, and code commitments.

The inspectors reviewed a sample of recent trend reports to determine whether:

- the trend reports were issued within the time frames established by procedures;
- the content of the trend reports contained information and analysis of licensee and EPC contractor performance improvement activities; and
- CAP inputs were generated for adverse trends or recommendations as required by program procedures.

The inspectors attended licensee and contractor CAP meetings, specifically the Management Review Team, Issue Review Committee, and Corrective Action Review Board, to determine whether the meetings were conducted according to procedure. In addition, the inspectors observed licensee and contractor personnel perform issue screening and review completed causal analyses.

b. Assessment

Assessment – Effectiveness of Problem Identification

The inspectors determined that conditions adverse to quality were being identified on a timely basis and the decision threshold for entering issues into the CAP was conservative. Where identified issues and corrective actions involved multiple organizations, procedures had been implemented to ensure shared issues were entered into the respective CAPs. Trending of CAP entries and activities was periodically performed to identify areas for management attention.

Assessment – Effectiveness of Prioritization and Evaluation of Issues

The inspectors determined that the prioritization and evaluation of adverse conditions were conducted in accordance with licensee and EPC contractor procedures. Although inspectors noted a trend of late causal analyses, this had been previously identified during a licensee audit of the CAP, and the late causal analyses were receiving appropriate management attention. Inspectors did not identify any immediate safety issues that were not promptly addressed. Based on the samples selected for inspection, significance determinations performed by the licensee and EPC contractor were properly conceived and were sufficiently

thorough to determine the causes that would require actions to prevent or mitigate recurrence. Although no inspection issues were identified with the implementation of prioritization reviews, the inspectors observed that effective performance of EPC contractor reviewers was highly dependent upon the personal insights of individual reviewers. In this area, the inspectors determined that the applicable procedure, W2-5.1-102, contained non-specific decision criteria for categorizing significance.

Assessment – Effectiveness of Corrective Actions

The inspectors determined in most cases, corrective actions for identified deficiencies were timely, adequately implemented, and commensurate with their safety significance. Corrective actions associated with significant conditions adverse to quality included provisions for preventing recurrence. Problems identified through root and apparent cause methodologies were resolved in accordance with applicable program and NRC requirements. Although there were no inspection findings related to the recent reconfiguration of the construction project CAP, the inspectors observed that the licensee had identified a need for improving the coordination of issue resolutions across interfaces with the EPC contractor - reference Condition Report (CR) CR-16-01650 and Corrective Action Prevention and Learning (CAPAL) 100403756.

c. Findings

No findings were identified.

1P02 Construction QA Criterion 16 - CAP - Assessment of the Use of Construction Experience

a. Inspection Scope

The inspectors reviewed the licensee and EPC contractor's ConE programs to determine whether they were systematically implementing the following:

- relevant internal and external construction and operating experience items were collected;
- collected experience items were adequately evaluated;
- relevant experience items were communicated to affected stakeholders; and
- experience items were used to inform plant design and work processes.

The inspectors interviewed the licensee and EPC contractor's principal managers of construction and operating experience to gain a better understanding of their handling of relevant internal and external experiences. The inspectors reviewed the licensee's ConE database and CAP to determine whether items that were classified as applicable were stored in the ConE database and entered into the CAP as specified by procedure. The inspectors reviewed the licensee ConE database to determine whether the licensee appropriately added NRC related information, such as 10 CFR Part 21 notifications and Generic Letters. The inspectors reviewed a sample of CAP documents to determine if the licensee was entering applicable industry experience items into the CAP and dispositioning the items appropriately.

b. Assessment

The inspectors determined that the licensee and EPC contractor adequately identified construction and operating experience and adequately screened and evaluated these experiences for applicability to the project. The inspectors noted that the licensee and EPC contractor routinely entered this information in the CAP for evaluation and/or tracking. The inspectors reviewed a sample of condition reports that were initiated in order to capture and evaluate relevant external and internal ConE. The inspectors determined that the licensee had established adequate measures to identify and evaluate construction and operating experience and that the licensee properly communicated relevant operating and ConE commensurate with the safety significance of the issue. The inspectors noted that the EPC contractor was planning to transition to a more stable operating experience database, which will allow relevant international experiences to be incorporated in the CAP.

c. Findings

No findings were identified.

1P03 Construction QA Criterion 16 - CAP - Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors reviewed a sample of documented self-assessments, audits, and effectiveness reviews. The review was performed to determine whether the oversight of the CAP by the licensee and EPC contractor was sufficient to verify the health of the program and to identify areas for improvement as needed. The inspectors also compared the results of the audits and self-assessments to the results of the inspection to determine if there were any discrepancies between the results of the inspection and the licensee's conclusions.

b. Assessment

The inspectors determined that the conduct of audits, self-assessments, and effectiveness reviews by the licensee and EPC contractor were accomplished in accordance with established procedures. The implementation of the oversight and independent verifications provided assessments of program effectiveness, including the interfaces of CAPs across organizational boundaries. Corrective actions to address the identified issues were generally prioritized, evaluated, and completed within applicable procedural requirements. Although no inspection findings were identified, the inspectors observed that an August 2016 audit by the licensee concluded that the CAP as implemented by the EPC contractor was not fully effective in the areas of causal evaluation, corrective action plan implementation, and timeliness of corrective actions. Four findings resulting from the audit were collectively categorized as significant conditions adverse to quality and were documented in the CAP for resolution. Similarly, an August 2016 effectiveness review for a Level 2A CAQ concluded that Corrective Action Record (CAR) 2015-

2775 had been ineffective in correcting recurring deficiencies in closing out corrective actions for conditions adverse to quality under the contractor's CAP.

c. Findings

No findings were identified.

1P04 Construction QA Criterion 16 - CAP - Assessment of Safety Conscious Work Environment

a. Inspection Scope

The inspectors conducted reviews to provide insight into whether a safety conscious work environment (SCWE) is being maintained and to confirm that SCE&G and contractors are complying with NRC requirements. The review also assessed SCE&G and the contractor Employee Concern Programs' (ECP) effectiveness, and evaluated management oversight of the corrective action process including anonymous CAP entries. These reviews were used to help determine if licensee and contractor personnel were not reluctant to report safety issues via the different avenues available (CAP, ECP, management, etc.).

The inspectors interviewed construction staff and observed other activities involving licensee personnel during the inspection to identify areas and issues that may represent challenges to the free flow of information, such as areas where employees may be reluctant to raise concerns or report issues in the CAP. The inspectors interviewed ECP personnel and other staff who were the designated SCWE subject matter experts. Interviews with SCWE subject matter experts were conducted to:

- determine if the staff was knowledgeable of SCWE processes and procedures;
- understand the interrelationship between the licensee and contractor ECPs; and
- understand any current perceived challenges as they related to SCWE.

Licensee and contractor ECP procedures and files were reviewed to determine if:

- procedures were adequate;
- files contained adequate documentation;
- issues were entered and reviewed in a timely manner;
- concerns were adequately addressed;
- corrective actions were tracked; and
- individuals were provided feedback.

Licensee and contractor ECP audits and self-assessments were reviewed to determine if identified issues were addressed and actions to prevent recurrence were put in place.

The inspectors evaluated SCWE training material to determine if it provided:

- clear, concise, and complete information regarding how to report concerns;
- contact information for reporting concerns;
- roles and responsibilities;
- importance of reporting safety concerns and its impact; and
- a means to determine training effectiveness.

The inspectors evaluated both a sample of anonymous concerns entered into the CAP and the methods used to resolve safety significant issues where the methods represented alternatives to the CAP (e.g. ECP). The inspectors reviewed both licensee and contractor anonymous CAP entries, CAP entries by ECP or about ECP, and CAP entries pertaining to SCWE issues to determine if:

- these were entered into the CAP in a timely manner consistent with the safety significance of the issue;
- recurring issues were adequately evaluated and trended; and
- the identified issues were adequately resolved.

These CAP entries were also reviewed to determine if area trends raised via different avenues (e.g. management, ECP and CAP programs) were promptly identified and addressed, and to determine if the various programs were identifying the cross-cutting and underlying causes. The inspectors also reviewed repeat issue identification in anonymous CAP entries to determine if these had been the result of inadequate corrective action which could cause personnel to be reluctant to identify additional related issues.

Additionally, interviews were conducted with approximately 50 randomly selected construction employees from both Unit 2 and 3. Interviews were conducted to determine if they knew how to raise safety concerns, if they felt free to raise such concerns, and if they were aware of alternate means for reporting safety concerns.

b. Assessment

The inspectors concluded that the foundation for a healthy safety conscious work environment exists at the site. The ECP for both the Licensee and its contractor is effective in evaluating concerns. Anonymous CAP entries were properly investigated and dispositioned. Weaknesses were noted during the interview process, such as; understanding the difference between the terms industrial safety and nuclear safety; different avenues to report concerns outside the immediate chain of command; location of the ECP offices; and familiarity in the new CAP electronic data base (CAPAL) are being addressed by the Licensee and their contractor. Increased leadership emphasis, from both the Licensee and their contractor, are in place to enhance the nuclear safety culture at the site.

c. Findings

No findings were identified.

4. **OTHER INSPECTION RESULTS**

4OA6 Meetings, Including Exit

On September 16, 2016, the inspectors presented the inspection results to Dan Gatlin, Virgil C. Summer 2 & 3 VP of Nuclear Operations, along with other licensee, Westinghouse, and WECTEC staff members. The inspectors stated that no proprietary information would be included in the inspection report.

4OA7 Licensee-Identified Violations.

The inspectors reviewed a 10 CFR 50.55(e) notification from the licensee to determine whether the licensee and their contractor adequately described the issue, met the timelines for evaluation and reportability, and performed adequate corrective actions.

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being dispositioned as a non-cited violation.”

Criterion IV, “Procurement Document Control,” of 10 CFR 50 Appendix B states, in part, “Measures shall be established to ensure applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment, and services, whether purchased by the applicant or by its contractors or subcontractors.” Contrary to this requirement, in December 2014, CB&I discovered that they failed to provide procurement specifications necessary to ensure adequate quality for procurement of coatings for approximately 1000 in-containment, pipe supports. The inadequate procurement specification resulted in non-compliant coatings being applied to the pipe supports. Additionally, in July 2015, as part of the extent of condition for this issue, CB&I discovered that coatings for in-containment, ventilation dampers were also coated with non-conforming material. Procurement of the pipe supports and ventilation dampers was completed and the components were delivered and accepted for use at Virgil C. Summer for Units 2 and 3. This licensee-identified violation (LIV) is material to the acceptance criteria of ITAAC 2.2.03.08c.x. This condition was documented in the licensee’s CAP as Corrective Action Record 2014-0372, 2014-2574, CR-NND-16-01719, and Discrete Issue (DI) 100413101. This issue was more than minor because the procurement documents did not adequately specify the material requirements for in-containment coatings, which could have adversely impact the function of the in-containment recirculation cooling system by blocking the screens. The issue is of very low safety significance (Green) because the issue was identified prior to the non-compliant coatings being installed in containment.

The inspectors reviewed the corrective actions associated with this LIV and determined that the improperly coated pipe supports and dampers were scrapped by the licensee and re-ordered. Therefore this issue is closed because the nonconforming condition no longer impacts the acceptance criteria of ITAAC 2.2.03.08c.x. LIV 05200027/2016007-01 and 05200028/2016007-01, "Inadequate procurement documents for pipe support coatings."

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licenses and Contractor Personnel

April Rice, SCE&G Licensing Manager
Garrett Sanders, SCE&G Licensing
Chuck Baucom, WECTEC Licensing
Kris Boykin, SCE&G ECP Specialist
Larry Cunningham, SCE&G QA Manager
Ron McCall, WECTEC ECP Manager
Joe Cole, WEC, Licensing Manager
Jerrod Ewing, SCE&G, Supervisor Design Engineering
Caroline Janzen, WECTEC, CAPAL Lead
Tim Northcutt, WEC, Manager Global Corrective Action Program
Ryder Thompson, SCE&G, ITAAC Supervisor
Matthew Welborn, WEC, Global OE-LL
Roosevelt Word, Jr., SCE&G, Manager Organizational Development & Performance

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

| <u>Item Number</u> | <u>Type</u> | <u>Status</u> | <u>Description</u> |
|---------------------|-------------------------------|---------------|---|
| 05200027/2016007-01 | Licensee Identified Violation | Open/Closed | Inadequate procurement documents for pipe support |
| 05200028/2016007-01 | Licensee Identified Violation | Open/Closed | Inadequate procurement documents for pipe support |

LIST OF DOCUMENTS REVIEWED

Section 1P01

Procedures

APP-GW-GAM-200, Rev. 2, AP1000 Quality Assurance Requirements for RTNSS
ECoE 21.1, Rev. 0, WEC 21.0 Level 3 Implementing Procedure
NND-AP-0002, Rev. 16, Corrective Action Program
NND-AP-0015, Rev. 8, Cause Determination
NND-AP-0018, Rev. 6, Observation Program
NND-AP-0025, Rev. 3, Construction and Operating Experience Program
NND-AP-0801, Rev. 4, Corrective Action Interface
NND-AP-0806, Rev. 2, Performance Improvement and Trending
QS 16.03, Rev. 5, Identification and Reporting of Defects
QS 16.05, Rev. 9, Corrective Action Program
W2-5.1-101, Rev. 0, Westinghouse Corrective Action Program Procedure

W2-5.1-102, Rev. 1, Issue Review Committee
 W2-5.1-103, Rev. 0, Root Cause Analysis
 W2-5.1-104, Rev. 0, Apparent Cause Analysis
 W2-5.1-105, Rev. 0, Limited Cause Analysis
 W2-5.1-201, Rev. 0, Identification and Reporting of Conditions Adverse to Nuclear Safety
 APP-GW-GAP-420 / APIP 5-18, Rev. 10, Engineering and Design Coordination Reports
 APP-FSAR-GLR-114, Generic Licensing Impact Determination for CA and CB Module Studs, Rev. 1
 APP-GW-GAP-420, Engineering and Design Coordination Report, Rev. 10
 APP-GW-GAP-428, Nonconformance and Disposition Report, Rev. 09
 VSG-GW-GPH-010, VC Summer Supply Chain Management/Procurement Plan, Rev. 0
 QS 15.01, WECTEC Nonconformance and Disposition Report, Rev. 07
 QAD 16.02, Significance Evaluation Screening, Rev. 01
 QS 14.02, Inspection Report System, Rev. 06.01

Corrective Action Prevention and Learning (CAPALs), Corrective Action Requests (CARs), and Condition Reports (CRs)

CAPAL 100171559, Specific Details for Type B LLRT tests for EPA's, dated 5/28/2015
 CAPAL 100142067, Mixing Carbon and Stainless Steel, dated 5/19/2015
 CAPAL 100301195, Ancillary Diesel Generator Fuel Tank Elevation, dated 5/18/2015
 CAPAL 100306614, APP-PXS-T1P-503 ADS-4 crosstie piping design, dated 6/10/2015
 CAPAL 100315051, Packaging Method issues when shipping requirements are applied to storage, dated 7/24/2015
 CAPAL 100327320, SCE&G "WEC QA Program Implementation Audit (NND_AUD_201513) Report" Finding 2-WEC Actions, dated 9/17/2015
 CAPAL 100344137, Inconsistencies with DCD/Site UFSARs and APP-ZOS-E0C-001
 CAPAL 100362935, Carbon Steel Contamination of Stainless Steel Surfaces in PRHR HX Modification Hardware, dated 2/24/2016
 CAPAL 100381204, RNS SSD Description of ITAAC, dated 5/4/2016
 CAPAL 100384179, Five Start Fluid 100 Grout Curing, dated 5/20/2016
 CAPAL 100383305, Wet cure of baseplate grout did not begin immediately after form removal, dated 5/16/2016
 CAPAL 100384458, Incorrect Weld Filler Material Listed on Weld data Sheet 163354, dated 5/21/2016
 CAPAL 100386575, Significance/Reportability Review for Unsat IR C114-16-10119, dated 5/27/2016
 CAPAL 100389466, Welding, By-passed Hold Points, Pre-head, dated 6/9/2016
 CAPAL 100391094, Material identification and traceability, dated 6/18/2016
 CAPAL 100391761, CR NND-16-01006, dated 7/22/2016
 CAPAL 100392137, Management and Storage of Electrical Cables in Warehouse, dated 6/23/2016
 CAPAL 100399921, VC Summer Nuclear Safety Culture Improvements not meeting expectations, dated 7/26/2016
 CAPAL 100406704, Prohibited Thread Sealant Used on PY51 Flex Hoses, dated 8/24/16
 CAPAL 100409860, Prohibited Thread Sealant Used on PY51 Flex, dated 8/31/16
 CAPAL 100322880, CAP 14-035-M019 did not provide corrective action, dated 8/27/2015
 CAPAL 100332153, PMS Software Errors, dated 10/2/2015
 CAPAL 100377138, ASME Code Calculation Errors (RPV & PZR), dated 4/21/2016
 CAPAL 100377388, QA Program deficiencies render some released product as indeterminate quality, dated 4/22/2016

CAPAL 100403756, CAP Interface Charter and Implementing Procedures need updating, dated 8/9/2016

CAPAL 100314155, AP600 IRWST Surface Area & Volume used for AP1000 Design, and associated Apparent Cause Analysis

CAPAL 100222920, IST Inconsistencies between licensing Basis and SSD's

CAPAL 100399860, Procedural Cross Functional Reviews – PER 2016-0460 CA-3, July 26, 2016

CAPAL 100409317, CR-NND-16-01546 CR documenting a finding from NND-AUD-201602, Aug 30, 2016

CAPAL 100408250, APP-GW-GAP-428 Needs Clarification, Aug 27, 2016

CAPAL 100331732, Error in Flued Head Penetration Modeling in Main Feedwater PLRs, dated 9/30/15

CAPAL 100352612, APP-GW-GAP-006 Non-compliance, dated 12/29/15

CAPAL 100367244, Licensing Basis of AP1000 Hot Leg Level, dated 3/10/16

CAPAL 100378323, W2-9.5-104 Includes SQO Specific Training Requirements, dated 4/26/16

CAPAL 100384198, Adverse Trend - Construction bypassed HOLD Points, dated 5/25/16

CAPAL 100388557, CAPAL 100352612 Delayed in Being Sent to Regulatory Compliance for Part 21 Review, dated 6/3/16

CAPAL 100391433, Significance/Reportability Review for unsat condition identified on IR S561-16-12515 requires further, dated 6/21/16

CAPAL 100381163, VC Summer PSI Program, dated 5/4/16

CAR 2016-1057, Embedment Plates installed in incorrect locations per design drawings: P-Line Wall EI 82'6"-100'0", dated 12/21/15

CAR 2016-1484, Significance Review for unsatisfactory conditions identified on N&Ds VS2-1221-GNR-000018 and VS2-1221-GNR-000019 require further consideration in the CAP, dated 4/5/16

CAR 2016-1870, Significance Review Screening for Nonconforming Conditions identified on N&D VS3-CR01-GNR-000121, dated 4/29/16

CAR 2015-2775, Audit finding identified that execution of CARs has failed to meet several required elements of the program, dated 7/25/2015

CAR 2015-4124, Post Placement Inspections Not Performed, dated 10/31/2015

CAR 2016-1030, Significance Review for Unsatisfactory Conditions Identified on N&D VS2-ER01-GNR-000002 Requires Further Consideration in the CAP, dated 3/7/2016

CAR 2015-2624, Adverse trend related to Missed or Bypassed Hold/Notification Points in Work Packages, dated 7/21/2015

CAR 2015-2775, Execution of CARs failed to meet required elements of the CAP program, dated 7/25/2015

CAR 2016-0114, 100% of plant ground cable in inventory is ASTM B787 instead of the specified 4/0 19 Strand ASTM B8 Class B, dated 1/8/2016

CAR 2016-1505, Issues with Verification and Validation for electrical calculations, dated 3/21/2016

CAR 2016-0460, Effectiveness review was performed on Level 1 CAR 2013-1744 and found multiple corrective actions to be ineffective, 2/3/2016

CR-NND-15-00935, NCV for QC failure to perform and document routine inspections), dated 5/20/2015

CR-NND-15-01153, Issues with design of rod control system and control rod exchange, dated 7/2/2015

CR-NND-15-01448, Single point vulnerability in power to battery chargers and voltage regulating transformers, dated 9/1/2015

CR-NND-15-01615, Nonconcurrency with design change for Rapid Power Reduction System, dated 9/28/2015
 CR-NND-16-00236, Minor NRC violations on conduct of NDE testing, dated 2/15/2016
 CR-NND-16-00598, Disconnect between the plant design and the safety analyses for main control room habitability systems, dated 4/12/2016
 CR-NND-16-01162, Decrease in CRs determined to be evaluation type "ACE", dated 7/5/2016
 CR-NND-16-01650, Problems with the CAP Interface, dated 9/8/2016
 CR-NND-13-01077, Instructors not complying with training expectations for adhering to simulator lesson plans, dated 10/8/2013
 CR-NND-14-00175, SOER 10-1: Large Power Transformer Reliability (CR-NND-13-00722) Maintenance and Work Management Recommendation, dated 2/18/2014
 CR-NND-14-01798, Oversight of a quality condition identified at Vogtle Plant by the NRC that was provided from a common project vendor, dated 12/22/2014
 CR-NND-15-00220, Notification of a Significant Breakdown in a Portion of the (CB&I) Quality Assurance Program, dated 2/5/2015
 CR-NND-15-01944, Incorrect Procedure Approval per FSAR, dated 11/25/2015

Nonconformances and Dispositions

VS2-CA20-GNR-000650, Stud Base Clearance CA20_12, Rev. 0
 VS2-MB01-GNR-000005, VS2-RCS-MB-01/02 Primary Side Nitrogen Atmospheric Condition Monitoring, Rev. 0
 VS2-RCS-GNR-000017, VS2-RCS-PLW-024 Spool #3 Fabricated Out of Tolerance, Rev. 0
 VS2-CA03-GNR-000072, CA03 Stud Failure, Rev. 0
 VS2-MT01-GNR-000004, MT01 UnSat IR 14-0905 Resolution, Rev. 0
 VS2-RNS-GNR-000015, VS2-RNSPLW-17F Spool #4 Fabricated out of Tolerance, Rev. 0
 VSG-GW-GNR-000001, Failure to Provide Non-welded Bent Pipe Spools with Proper Documentation, Rev. 0
 VS2-CA20-GNR-000653, Unit 2 CA20 Embedded Anchorage Plates Location/Elevation, Rev. 0
 VS3-CR01-GNR-000065, Q-Line Effective Depth, Rev. 0
 VS2-1130-GNR-000004, RV Support Embed P12 OOT, Rev. 0
 VS3-RCS-GNR-000008, ASME III-RCS Reactor Coolant System Pipe Spools Fab'd Out of Tolerance, Rev. 0
 VS3-1211-GNR-000005, Rm 12105 End of Beam Embed Gap Out of Tolerance, Rev. 0
 VS2-CC01-GNR-000271, Major Defects on SB, Elev 78'-6", Rev. 0
 VS2-MB01-GNR-000005, VS2-RCS-MB-01/02 Primary Side Nitrogen Atmospheric Condition Monitoring, Rev. 0
 VS2-SS01-GNR-000272, HSS Wall Thickness, Rev. 0
 VSG-EGS-GNR-000014, Ground Conductor Type, dated 1/12/2016
 VS3-CC01-GNR-000175, Area 2, J-line Surface Defects, dated 7/27/2015
 VS3-CC01-GNR-000238, Grout on 7.3, SB, and J1 Wall without C114 Inspection, dated 6/22/2016
 VS2-KB37-GNR-000008, VS2-KB37 Flex Hose Issue, dated 8/20/2016

E&DCRs

APP-GW-GEF-1320, Changes to SSD Valve IST Requirements Tables to Match Licensing Basis, Rev. 0
 VSG-1208-GEF-000009, SB Backing Bar, Rev. 0
 VSG-CA00-GEF-000049, CA01/CA20 Threaded Stud Weld Det., Rev. 0
 VSG-CA01-GEF-000024, CA01_33 Hook Bar Change, Rev. 0
 VSG-CA04-GEF-000014, CA04 Permanent Coating, Rev. 0

VSG-CR01-GEF-000013, Bar Supports inside Containment, Rev. 1
 VSG-CR01-GEF-000196, Rebar "Twist", Rev. 0
 VSG-CR01-GEF-000328, Bar Supports inside Containment, Rev. 0
 VSG-GW-GEF-000027, Weld Reinforcement, Rev. 0

Inspection Reports

VS2-PXS-MT-02B, PM Activities for Week Ending 201623
 VS2-PXS-MT-02A, PM Activities for Week Ending 201623

Observations

OBV-NND-2015-100075
 OBV-NND-2015-100131
 OBV-NND-2015-100141
 OBV-NND-2015-100143
 OBV-NND-2015-100147
 OBV-NND-2015-100175
 OBV-NND-2015-106114
 OBV-NND-2015-106312
 OBV-NND-2015-106368
 OBV-NND-2015-106670
 OBV-NND-2015-106978
 OBV-NND-2016-107951
 OBV-NND-2016-109220
 OBV-NND-2016-110060
 OBV-NND-2016-110581
 OBV-NND-2016-110635
 OBV-NND-2016-112802
 OBV-NND-2016-113133
 OBV-NND-2016-113364
 OBV-NND-2016-113850
 OBV-NND-2016-115096

Miscellaneous

CN-GENED-0037, VC Summer Construction Work Package Implementation
 Effectiveness review report for CAR 2015-2775, dated 8/25/2016
 LTR-SRC-16-82, Closeout Request for PI-16-20, "ASME Code Section III Analysis of AP1000
 Plant Components", dated June 16, 2016
 NPP_NPP_000359, Expert Review Panel Review: AP1000 ASME Code Calculation Issue
 Identified by ONR during Resolution of GDA Issue SI05, dated April 28, 2016
 SCE&G Letter NND-16-0286, Owner Issues with Access to CAPAL, dated 7/19/2016
 Trend Report, Rev. 1, First Quarter 2016 - SCE&G New Nuclear Deployment and Consortium
 Data
 VC Summer Corrective Action Program Interface Charter, Rev. 1, dated 9/17/2015
 VC Summer Nuclear Safety Culture Recovery Plan, Rev. 1
 WNA-WI-00375-WAPP, Rev. 1, Protection and Safety Monitoring System Requirements
 Allocation Process
 System Specification Document APP-PXS-M3-001 Rev. 6, Passive Core Cooling System (PXS)
 System Specification Document
 System Specification Document APP-PXS-M3-001 Rev. 7, Passive Core Cooling System (PXS)
 System Specification Document

System Specification Document APP-CVS-M3-001 Rev. 6, Chemical and Volume Control System (CVS) System Specification Document
 System Specification Document APP-CVS-M3-001 Rev. 7, Chemical and Volume Control System (CVS) System Specification Document
 NND-16-0356, NND-AUD-201602 VC Summer Westinghouse/WECTEC Corrective Action Program Audit Report, Aug 24, 2016
 10CFR21 Evaluation 15-0205, Rev. 2, CA01 Non-ASME Penetration Sleeves with Rusted Surfaces
 10 CFR Part 21 Report 15-86-00
 10 CFR Part 21 Report 15-86-01
 10 CFR Part 21 Report 15-86-02
 VCB-SAP-0139, Document Review and Approval, Rev. 3

Corrective Actions Initiated in Response to NRC

CR-NND-16-01682, Add interim corrective actions for extended action items
 CR-NND-16-01719, CAPAL 100413101, Inadequate procurement document control on in-containment pipe supports
 CR-NND-16-01720, CAPAL 100412925, Failure to fully incorporate an E&DCR
 CR-NND-16-01721, CAPAL 100413047, Failure to provide adequate information on non-conforming lot of Nelson studs
 CR-NND-16-01722, CAPAL 100412749, Failure to verify completion of corrective action
 CR-NND-16-01740, Nonspecific procedure guidance in CR-NND-16-01740
 CAPAL 100413561
 CAPAL 100413563
 CAPAL 100413565
 CAPAL 100413154
 CAPAL 100413159
 CAPAL 100413556
 CAPAL 100413566
 CAPAL 100413567
 CAPAL 100413568
 CAPAL 100413071
 CAPAL 100412500

Section 1P02

NCAP 03.01, Rev. 4, Power Group Construction Experience / Operating Experience / Lessons Learned Program

Section 1P03

Audits and Assessments

CAR 2015-2775 Effectiveness Review Report, dated 8/25/2016
 NND-AUD-201515, VCS Units 2&3 Audit, dated 12/9/2015
 NND-AUD-201602, VC Summer Westinghouse/WECTEC Corrective Action Program Audit Report, dated August 24, 2016

Section 1P04

Procedures:

SAP-1306; VCS 2&3 ECP Procedure; Rev. 3
 QSG-11; VCS 2&3 ECP Process; Quality System Guideline; Rev. 1
 NND-AP-0024; VCS 2&3 Assessment Program; Rev. 3
 WECTEC-ECP-PR-01; Employee Concerns Program; Rev. 0
 WECTEC-ECP-GL-01; ECP Self-Assessment Guidelines; Rev. 0
 WECTEC-ECP-GL-04; ECP Corrective Action Database Guidelines; Rev. 0
 WECTEC-ECP-WI-02; ECP Work Instructions; Rev. 1

CAP entries:

CAR 2015-1590; Area Managers over claiming progress and claiming progress that hasn't been worked on; initiated 4/24/2015
 CAR 2015-1230; exit interviews/surveys conducted with subcontractor personnel at VCS 2&3 are not being provided to CB&I ECP as required by confirmatory Orders EA-12-189 and EA-12-196; initiated 4/1/2015
 CAR 2015-1392; work packages; initiated 4/10/2015
 CAR 2015-1381; chilled work environment; initiated 4/10/2015
 CAR 2015-1421; VCS 2&3 ECP case file self-assessment; initiated 4/13/2015
 CAR 2015-1588; wrongful disciplinary action; initiated 4/24/2015
 CAR 2015-1511; NSCMP ECP Process Input; initiated 4/20/2015
 CAR 2016-1716; implementation/tracking of actions as a result of ECP #2016-VCS-029; initiated 4/20/2016
 CAR 2015-1800; weld record inconsistent documentation; initiated 5/7/2015
 CAR 2015-1801; training attendance record; initiated 5/7/2015
 CAR 2015-2193; abused CAR program; initiated 6/5/2015
 CAR 2015-3116; Westinghouse inadequate design configuration controls; initiated 8/21/2015
 CAR 2015-2607; chilled work environment in CA20; initiated 7/10/2015
 CAR 2015-2761; chilled work environment management promoting unsafe acts; initiated 7/24/2015
 CAR 2015-3198; nuclear culture work morale; initiated 8/27/2015
 CAR 2015-3286; project management not committed to a nuclear safety conscious work environment; initiated 8/31/2015
 CAR 2015-4028; inspector intimidation; initiated 10/23/2015
 CAR 2016-0360; purchase order safety class are being changed; initiated 1/29/2016
 CAR 2016-0821; chilled work environment; initiated 2/23/2016
 CAR 2016-0819; the process of receipt inspection of augmented quality; initiated 2/24/2016
 CAR 2016-0861; actions that may cause a "Chilling Effect"; initiated 2/25/2016
 CAR 2016-1476; chilled work environment at VCS; initiated 4/4/2016
 CAPAL DI # 100383640; ERB non-compliance; initiated May 18, 2016
 CAPAL DI # 100383416; hold point injected with no date or signature; initiated May 17, 2016
 CAPAL DI # 100389789; CA-01 backing bar; initiated June 10, 2016
 CAPAL DI # 100402532; site exit process – ECP exist questionnaire form; initiated August 2, 2016
 CAPAL DI # 100390963; violation of confirmatory order; initiated June 17, 2016
 CAPAL DI # 100381074; field engineer inappropriately directed; initiated May 4, 2016
 CAPAL DI # 100412500; PI&R observation – ECP issue drop box; initiated September 13, 2016
 CR-NND-15-001386; tracking CR for CB&I CAR 2015-2940; inadequate corrective action for CAR 2015-2393; initiated August 21, 2015

CR-NND-16-01169; peer audit finding corrective action effectiveness self-assessment SA-16-NND-QS-02; initiated July 5, 2016

CR-NND-15-001315; benchmarking effort documenting follow-up issues that may require actions: OBV-NND-2016-115874; initiated J, 2015

ECP Assessments/Audits:

Audit of Substantiated Employee Concerns Program (ECP) Cases Closed from April 1, 2016 to June 30, 2016, July 2, 2106

ECP Self-Assessment for WECTEC 2016 NSC Plan from 4/1/2016 through 3/31/2016; July 8, 2016

Employee Concerns Program ECP Exit Questionnaire Assessment of 2nd Quarter 2016 Corp Exit Questionnaire Documentation and Concerns Database Entries; July 26, 2016

Final Report – Employee Concerns Program Compliance Assessment of 1st Quarter 2016

WECTEC Case File Documentation and Concerns Database Entries; April 17, 2016

ECP 2016 Corporate 2nd Quarter Monthly Report Assessment; July 26, 2016

Miscellaneous:

New Employee Orientation Training; Our Nuclear Safety Culture; NU-NSC-3000

VCS Nuclear; Traits of a Healthy Nuclear Safety Culture; INPO 12-012

4. OTHER INSPECTION RESULTS

4OA7 Licensee-Identified Violations.

Evaluation number 15-0140, dated 7/24/15, "Suspect Touch-up Paint on MD01 VCS Dampers"

Evaluation number 14-002, dated 1/13/15, "B31.1 pipe supports were improperly coated"

10 CFR Part 21 Report 14-76-00

10 CFR Part 21 Report 14-76-01

10 CFR Part 21 Report 14-76-02

Purchase Order 132178-PH03.01, Rev. 32

LIST OF ACRONYMS

| | |
|-------|---|
| ADAMS | Agencywide Documents Access & Management System |
| CAP | Corrective Action Program |
| CAPAL | Corrective Action Prevention and Learning |
| CAQ | Conditions Adverse to Quality |
| CAR | Corrective Action Record |
| CB&I | Chicago Bridge & Iron |
| ConE | Construction Experience |
| CFR | Code of Federal Regulations |
| CR | Condition Report |
| DCO | Division of Construction Oversight |
| DI | Discrete Issue |
| E&DCR | Engineering and Design Coordination Report |
| ECP | Employee Concern Program |
| EPC | Engineering, Procurement, and Construction |
| FSAR | Final Safety Analysis Report |
| IR | Inspection Report |
| ITAAC | Inspections, Tests, Analysis, and Acceptance Criteria |
| LIV | Licensee Identified Violation |
| N&D | Nonconformance and Disposition Report |
| NRC | Nuclear Regulatory Commission |
| PARS | Publicly Available Records |
| QA | Quality Assurance |
| QAPD | Quality Assurance Program Description |
| OE | Operating Experience |
| SCE&G | South Carolina Electric & Gas |
| SCWE | Safety Conscious Work Environment |
| SSC | Structure, System, or Component |
| WEC | Westinghouse Electric Company |

Letter to R. Jones from Michael Ernstes dated October 18, 2016

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION UNITS 2 AND 3 – NRC PROGRAM
INSPECTION FOR CORRECTIVE ACTION PROGRAM IMPLEMENTATION
INSPECTION, REPORTS 05200027/2016007 AND 05200028/2016007

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