



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

December 20, 2019

Mr. Daniel G. Stoddard
Senior Vice President and
Chief Nuclear Officer
South Carolina Electric & Gas Company (SCE&G)
Innsbrook Technical Center
5000 Dominion Blvd., Floor: IN-2SW
Glen Allen, VA 29060

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 – TRIENNIAL INSPECTION
OF EVALUATION OF CHANGES, TESTS AND EXPERIMENTS BASELINE
INSPECTION REPORT 05000395/2019010

Dear Mr. Stoddard:

On November 7, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Virgil C. Summer Nuclear Station, Unit 1. On December 12, 2019, the NRC inspectors discussed the results of this inspection with Mr. George Lippard and other members of your staff. The results of this inspection are documented in the enclosed report.

One Severity Level IV violation without an associated finding is documented in this report. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

No NRC-identified or self-revealing findings were identified during this inspection.

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC Resident Inspector at Virgil C. Summer Nuclear Station, Unit 1.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document

D. Stoddard

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Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA Brian R. Bonser for/

James B. Baptist, Chief
Engineering Branch 1
Division of Reactor Safety

Docket No. 05000395
License No. NPF-12

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 – TRIENNIAL INSPECTION
OF EVALUATION OF CHANGES, TESTS AND EXPERIMENTS BASELINE
INSPECTION REPORT 05000395/2019010 DATED DECEMBER 20, 2019

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000395

License Number: NPF-12

Report Number: 05000395/2019010

Enterprise Identifier: I-2019-010-0032

Licensee: South Carolina Electric & Gas Company (SCE&G)

Facility: Virgil C. Summer Nuclear Station, Unit 1

Location: Jenkinsville, SC

Inspection Dates: November 04, 2019 to November 07, 2019

Inspectors: M. Donithan, Operations Engineer
G. Ottenberg, Senior Reactor Inspector
M. Schwieg, Reactor Inspector
T. Su, Reactor Inspector

Approved By: James B. Baptist, Chief
Engineering Branch 1
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a triennial inspection of evaluation of changes, tests and experiments baseline inspection at Virgil C. Summer Nuclear Station, Unit 1, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Failure to Obtain License Amendment Regarding Containment Isolation Valve Technical Specification Guidance			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Not Applicable	NCV 05000395/2019010-01 Open/Closed	Not Applicable	71111.17T
The inspectors identified a Severity Level IV Non-cited Violation (NCV) of Section 59 of Part 50 of Title 10 of the Code of Federal Regulations (10 CFR 50.59) for the licensee's failure to obtain Commission approval prior to making a procedure change that involved a change to Technical Specification (TS) 3.6.4, Containment Isolation Valves.			

Additional Tracking Items

None.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.17T - Evaluations of Changes, Tests, and Experiments

Sample Selection (IP Section 02.01) (28 Samples)

The inspectors reviewed the following evaluations, screenings, and/or applicability determinations for 10 CFR 50.59 from November 4 through November 7, 2019.

- (1) 50.59 Screening for AOP-304.4, Rev. 4, "ARG-4, Loss of All ESF AC Power While on RHR"
- (2) 50.59 Evaluation for ECR-50846K, Weld Repair Contingency for RV Head Inspection
- (3) 50.59 Evaluation for ECR-50585U, A-Chiller Replacement
- (4) 50.59 Evaluation for ECR-50884E, OPC Strategy for the GDC-17 Offsite Power Sources
- (5) 50.59 Screening for ECR-50890, External Flooding Protection
- (6) 50.59 Screening for ECR-50906, KWH Meter Replacement
- (7) 50.59 Screening for ECR-72470, Replacement of D.G. O'Brien Hermetic Connector with EGS Quick Disconnect
- (8) 50.59 Screening for ECR-50753M, OCA Perimeter Upgrades - Radar Systems
- (9) 50.59 Evaluation for ECR-50695E, EFW Flow Margin Improvement
- (10) 50.59 Evaluation for Bases Revision Notice BRN-17-002 TS Bases 3/4 7.1.2 Change of EFW Combined Flow of 380 Gallons
- (11) 50.59 Evaluation for ECR-71781, RMA2 Guidance
- (12) 50.59 Screening for ECR-50912, Modification to Platform SWP-1
- (13) 50.59 Screening for ECR-50900, New Enclosure on Control Building Roof
- (14) 50.59 Screening for EOP-1.0, Rev. 30, E-0, "Reactor Trip or Safety Injection"
- (15) 50.59 Screening for EOP-1.1, Rev. 22, ES-0.1, "Reactor Trip Response"
- (16) 50.59 Screening for ECR 50909A, RCP Oil Lift Pump Enclosure
- (17) 50.59 Screening for ECR 70436, Control Room Differential Pressure Switches
- (18) 50.59 Applicability Determination for ARP-045-XPB-2050, "Industrial Chiller Heat Tracing Control Panel"
- (19) 50.59 Applicability Determination for VCS-SAP-0705, "Site Switchyard Coordinator Responsibilities"
- (20) 50.59 Screening for AOP-112.1, Rev. 7, "ARG-2, Shutdown LOCA"
- (21) 50.59 Evaluation ECR-50897 Replace Reactor Service Structure - Integrated Head Assembly, 2017-001
- (22) 50.59 Evaluation for GTP-302 Rev. 7A Change and CR 18-01032 and CR 19-02562

- (23) 50.59 Screening BRN 17-001, The Basis 3/4.7.6 Is Being Revised to Clarify Which Revisions or RG 1.196 and CEI 99-03 Is Applicable
- (24) 50.59 Screening for ECR 70814, Revise Set Point for ITB00451 and ITB00452
- (25) 50.59 Screening for ECR 50874V, Major Revision for RB Cooling Permanent Power
- (26) 50.59 Screening for ECR 50905, Boron Concentration System Monitoring Sys Elimination
- (27) 50.59 Screening for ECR 72012, RWST Empty Alarm Set-point Change
- (28) 50.59 Applicability Determination for ARP-016-XCP-6210-LCB1, Annunciator Response Procedure

INSPECTION RESULTS

Failure to Obtain License Amendment Regarding Containment Isolation Valve Technical Specification Guidance			
Cornerstone	Severity	Cross-Cutting Aspect	Report Section
Not Applicable	Severity Level IV NCV 05000395/2019010-01 Open/Closed	Not Applicable	71111.17T
The inspectors identified a Severity Level IV Non-cited Violation (NCV) of Section 59 of Part 50 of Title 10 of the Code of Federal Regulations (10 CFR 50.59) for the licensee's failure to obtain Commission approval prior to making a procedure change that involved a change to Technical Specification (TS) 3.6.4, Containment Isolation Valves.			
<p><u>Description:</u> In 1992, V.C. Summer requested a TS amendment from the NRC to remove Table 3.6-1 from TS in accordance with the guidance in NRC Generic Letter (GL) 91-08, "Removal of Component Lists from Technical Specifications," and the request was granted by the NRC. After the amendment was granted, the licensee relocated the table to station procedure GTP-302, "Inservice Testing of Valves," revision 6A, dated March 29, 1993, and also included other valves in the list in accordance with the guidance in GL 91-08. Prior to the licensee's implementation of the procedure change as a result of the amendment, Table 3.6-1 was located in TS 3/4.6.4 and it identified the containment isolation valves (CIVs) to which the TS applied. The guidance in GL 91-08 included the following description:</p> <ul style="list-style-type: none"> "The list of containment isolation valves in the TS may not include all valves that are classified as containment isolation valves by the plant licensing basis. Generally, the FSAR identifies those valves that are classified as containment isolation valves. With this TS change, the LCO, remedial actions, and surveillance requirements will apply for all valves that are classified as containment isolation valves by the plant licensing basis." <p>Because they were not previously included in Table 3.6-1, the licensee added the steam generator power operated relief valves (SG PORVs) to the table which was now being maintained in GTP-302. The SG PORVs function as closed system isolation valves designed to meet the requirements of General Design Criterion (GDC) 57 in 10 CFR 50, Appendix A. The licensee later updated GTP-302 in revision 7A, dated June 18, 1993, to include the following 'Note (2)' which was applicable to the SG PORVs:</p> <ul style="list-style-type: none"> "(2) Should this valve be found to be incapable of meeting its containment isolation requirements, i.e., inoperable per Technical Specification 3/4.6.4, action statement 3.6.4.c may be satisfied by verifying that the connected closed system is intact inside the Reactor Building." 			

TS 3.6.4 required that "Each Containment Isolation Valve Shall be OPERABLE.*" The TS Actions (which included action statement 3.6.4.c) stated the following:

- "With one or more of the isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open, and either:
- a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or
- b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or
- c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange, or
- d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

The inspectors observed that the as-approved TS action statements in TS 3/4.6.4, "Containment Isolation Valves" did not contain an explicit provision in action statement 3.6.4.c that allowed consideration of the closed system as being equivalent to a closed manual valve or a blind flange in order to satisfy the action statement, and that Note (2) was intended to provide appropriate action if that type of containment isolation valve was found to be inoperable. Although the closed system would function as a passive containment barrier similar to a closed manual valve or blind flange, the provision for its credit as such did not exist in the approved TS. The inspectors discovered that Note (2) was added to GTP-302 in revision 7A, and due to a revision process error did not receive a review in accordance with 10 CFR 50.59 to determine whether or not an amendment to technical specifications was required. The inspectors determined that the licensee should have obtained Commission approval prior to implementing the change in revision 7A to GTP-302 that included Note (2), because it involved a change in the TS incorporated into the license for the V.C. Summer station.

The inspectors further observed that licensee event report (LER) 2019-002-00, "Condition Prohibited by Technical Specification 3.6.4" was submitted to the NRC on October 9, 2019, regarding a failed SG PORV. The inspectors also noted that, prior to concluding an LER was required, the licensee utilized the guidance contained in GTP-302, "Inservice Testing of Valves" when they performed a past-operability review of the valve failure under action number 14 to condition report (CR) CR-18-01032, and initially inappropriately concluded that the failure did not constitute a condition prohibited by Technical Specifications (TS) because the procedure allowed action statement 3.6.4.c to be considered satisfied if the closed system inside containment was intact. Although operation of the station while the licensee may consider action statement 3.6.4.c to be met would represent an alignment not previously explicitly allowable by TS, the consequence of the licensee's failure to correctly consider the change and request an amendment prior to implementing the change was considered to be minor because the current alternate source term assumptions for radioactive release for the events where the closed system inside containment is compromised bound the presumed containment isolation valve failure because immediate release of the fission products with no mitigation is assumed.

Corrective Actions: Upon discovery, the licensee entered the issue into their corrective action program and indicated that Note (2) was not to be used to satisfy the action statement in TS 3.6.4.c.

Corrective Action References: CR-19-04328

Performance Assessment: The inspectors determined this violation was associated with a minor performance deficiency. The licensee failed to perform a correct 50.59 screening and safety evaluation when considering the changes to procedure GTP-302, done in 1993. Specifically, the addition of Note (2) was not originally considered within the 50.59 process when the procedure was revised, and had it been considered, the licensee should have concluded that a TS amendment was required because it allowed an application of a TS action statement that was not stated in the TS. The consequence of the licensee's implementation of the change without receiving prior Commission review and approval was considered minor because the alternate source term assumptions for radioactive release for the events where the closed system inside containment is compromised bound the presumed containment isolation valve failure because immediate release of the fission products with no mitigation is assumed.

Enforcement: The ROP's significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance.

Severity: The NRC's Enforcement Policy dated May 28, 2019, section 6.1.d. stated in part, "SL IV violations involve, for example: Violations of 10 CFR 50.59 result in conditions evaluated as having very low safety significance (i.e., green) by the SDP." Further, the NRC's Enforcement Manual, dated October 1, 2019, Part II, section 2.1.3, "Enforcement of 10 CFR 50.59 and Related FSAR Violations," subsection D.5 stated in part, "a. Violations of 10 CFR 50.59 will be considered more than minor and categorized at Severity Level IV if: the activity or change (1) required prior Commission review and approval, and the licensee failed to obtain Commission approval; (2) the consequence of the activity or change evaluated by the SDP is minor, or of very low safety significance (i.e., Green); and (3) the NRC would have likely approved the change." The inspectors determined that the change required prior NRC review and approval, which was not obtained prior to implementing the change; the consequence of the change evaluated by the SDP was minor; and the NRC would have likely approved the change, if requested.

Violation: Section 59 of Part 50 of Title 10 of the Code of Federal Regulations (10 CFR 50.59) required, in part, that "The holder of a license authorizing operation of a production or utilization facility may (i) make changes in the facility as described in the safety analysis report, (ii) make changes in the procedures as described in the safety analysis report, and (iii) conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question." Further, 10 CFR 50.59(c) required "The holder of a license authorizing operation of a production or utilization facility who desires (1) a change in technical specifications or (2) to make a change in the facility or the procedures described in the safety analysis report or to conduct tests or experiments not described in the safety analysis report, which involve an unreviewed safety question or a change in technical specifications, shall submit an application for amendment of his license pursuant to 50.90." Contrary to the above, in 1993, the licensee made a change to a station procedure that involved a change in the technical specifications incorporated in the license and did not submit an application for an amendment of the license pursuant to 50.90, as required by 10 CFR 50.59(c). Specifically, the addition of Note (2) to procedure GTP-302, "Inservice Testing of Valves" changed the interpretation of the TS as written but did not change the wording of the TS to match the intended usage of Note (2).

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.
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EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On December 12, 2019, the inspectors presented the triennial inspection of evaluation of changes, tests and experiments baseline inspection results to Mr. George Lippard and other members of the licensee staff.
- On November 7, 2019, the inspectors presented the On site debrief inspection results to Mr. George Lippard and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.17T	Calculations	DC03290-007	RWST PIT Flood Wall	Rev. 0
		DC03290-008	Evaluation of Foam Seal, Drain Pipe Plugs, and Floor Mats for External Flooding Event	Rev. 0
		DC03690-005	Evaluation for SWPH Pipe Rupture/Flooding Effects	Rev. 2
	Corrective Action Documents	CR-18-01032	While performing STP-121.002A, B PORV failed to open	Dated 3/8/2018
		CR-19-02562	Reportability of B SG PORV failing to open	Dated 07/17/2019
	Corrective Action Documents Resulting from Inspection	CR-19-03964	ARP-016-XCP-6210-LCB1 Applicability Determination Check Boxes Were Checked	Dated 11/06/2019
		CR-19-03972	GTP-302 May Not Be the Right Place for Note 2	Dated 11/07/2019
		CR-19-03973	Exceptions to Reg. Guide 1.75 Not Specified	Dated 11/07/2019
		CR-19-03974	50.59 Screening Question 3 Did Not Cover Adverse Effect of Direct Trip to Feederer Breakers	Dated: 11/07/2019
		CR-19-04328	GTP-302 Addition of Note Without Licensee Amendment Request	Dated 12/05/2019
	Engineering Changes	ECR 50897	Replacement Reactor Service Structure-Integrated Head Assembly	Dated 02/01/2017
		ECR 50905	Boron Concentration Monitoring System Elimination	Dated 06/11/2018
		ECR 70814	Revise Set-Point For ITB00451 and ITB00452	Dated 08/09/2019
		ECR 72012	RWST Empty Alarm Setpoint Change	Dated 02/16/2017
		ECR-50585	A-Chiller Replacement	Rev. U
		ECR-50695	EFW Flow Margin Improvement	Rev. E
		ECR-50753	OCA Perimeter Upgrades - Radar Systems	Rev. M
		ECR-50884	OPC Strategy for the GDC-17 Offsite Power Sources	Rev. E
		ECR-50890	External Flooding Protection	Rev. 0
		ECR-50900	New Enclosure on Control Building Roof	Rev. 0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		ECR-50906	KWH Meter Replacement	Rev. 0
		ECR-71781	RMA2 Guidance	Rev. 0
		ECR-72470	Replacement of D.G. O'Brien Hermetic Connector with EGS Quick Disconnect	Rev. 0
	Engineering Evaluations	DC0295A-006	Qualification of CB Roof Enclosure	Rev. 3
	Miscellaneous	50.59 Evaluation Report Log Number 2016-0001	ECR50695E, EFW Flow Margin Improvement	Rev. 0
		Bases Revision Notice	BRN No. 17-002	Dated 05/23/2017
		CGE-15-70	Transmittal of LTR-PL-15-66, "V.C. Summer Emergency Feedwater (EFW) Flow Margin Increase Engineering Impact Results Summary"	Dated 11/03/2015
		D2018024	Incidental Submergence of Rosemount 3152N Pressure Transmitter with Curtiss-Wright Generation 1 EGS QDC	Rev. A
		EGS-TR-913601-01	Nuclear Environmental Qualification Report of EGS 3/4 Inch Quick Disconnect Electrical Connector	Rev. B
		Evaluation 14-10	EFW Mod ECR50695E Reliability	Dated 05/09/16
		FATR-079-351025399-01	Factory Acceptance Test Report for NLI HVAC Chiller	Rev. 1
		GTP-302	In-service Testing of Valves	Rev. 7 Chg. A
		ICES # 434234	During the SG PORV Operability Test Header Power Relief Valve	Dated 04/03/2018
		Procedure Development Form	GTP-302 Rev 7A Inservice Testing of Valves	Dated 06/18/93
		QR-0798582-2	Qualification Report for 4" Ball Valve with Beck Actuator Model 11-288-119306-04	Rev. 0
		RN 12-030	FSAR Revision Notice ECR50695B/C/E/G	Dated 11/08/2017

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		RN 18-008	To Eliminate Boron Concentration Monitoring (BCMS)	Dated 10/17/2019
		RN No. 16-030	Correcting Mislabeled Fire Damper	Dated 03/09/2017
		SAP-0107	USA 50.59 Resource Manual	Rev. 3
		Technical Specifications Change Request	Removal of Table 3.6-1 Per Generic Letter 91-08 (TSP 920003-0)	dated 09/23/1992
		TSP 920003	Proposed Technical Specification Change	Dated 09/23/1992
		WCAP-7706	An Evaluation of Solid State Logic Reactor Protection in Anticipated Transients	Dated 07/1971
	Procedures	ARP-016-XCP-6210-LCB1	Annunciator Response Procedure	Rev. 2
		ECR 50874	Major Revision for RB Cooling Upgrade	Dated 01/08/2015
		GTP-302	Inservice Testing of Valves	Revs. 6A, 7, 7A, and 17
		OAP-109.1	Guidelines for Severe Weather	Rev. 5
		SAP-0139	Document Review and Approval Process	Rev. 38
		VCS-ERP-0119	ERU Flooding Response	Rev. 1