



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

March 28, 2023

EA-22-081

Ms. Jamie Coleman
Regulatory Affairs Director
Southern Nuclear Operating Company
7825 River Road, BIN 63031
Waynesboro, GA 30830

SUBJECT: NRC OFFICE OF INVESTIGATIONS REPORT 2-2021-020 AND VOGTLE
ELECTRIC GENERATING PLANT, UNIT 3 – NRC INSPECTION REPORT
05200025/2022011 AND APPARENT VIOLATIONS

Dear Ms. Coleman:

This letter and report document the results of an investigation initiated on August 20, 2021, by the U.S. Nuclear Regulatory Commission (NRC) Office of Investigations (OI), Region II, Atlanta, Georgia, and conducted at your Vogtle Electric Generating Plant (VEGP), Unit 3. The investigation, which was completed on August 18, 2022, evaluated whether a (now former) test engineer who worked for a contractor of Southern Nuclear Operating Company, Inc. (SNC) at VEGP Unit 3 engaged in deliberate misconduct by failing to follow a procedure and subsequent falsification of procedural steps during hot functional testing (HFT). A factual summary of the OI investigation is included as Enclosure 1 to this letter. On March 28, 2023, the NRC inspectors discussed the results of Enclosures 1 and 2 with Mr. G. Chick, VEGP Units 3 and 4 Executive Vice President, and other members of your staff.

Based on the results of the investigation, apparent violations (AVs) of Title 10 of the *Code of Federal Regulations* (10 CFR) 52.6(a) and 10 CFR Part 50, Appendix B, Criterion V were identified and are being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's website at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>. The two AVs are provided in Enclosure 2 and involve SNC's failure to complete a required procedural step during VEGP Unit 3 HFT and SNC's failure to maintain complete and accurate information related to VEGP Unit 3 HFT procedures in April 2021. Specifically, engineers failed to obtain ambient temperature pressurizer upper lateral support shim gap measurements and record the values in a data sheet as required by procedure, and a former test engineer subsequently signed off on a step in another procedure confirming that those measurements had been performed, when in fact the measurements had not been taken. Both AVs appear to involve willfulness (deliberate misconduct).

Additionally, the NRC identified one performance deficiency that was associated with a Severity Level IV violation of NRC requirements evaluated through the traditional enforcement process. The issue involved your failure to maintain and retrieve a quality record for HFT. The NRC is treating the violation as a noncited violation (NCV) consistent with Section 2.3.2.a of the NRC Enforcement Policy. This violation is described in Enclosure 2 of this letter.

Before the NRC makes its enforcement decision for the two AVs, we are providing you an opportunity to (1) respond in writing to the AVs addressed in this inspection report within 30 days of the date of this letter, or (2) request a Pre-decisional Enforcement Conference (PEC), or (3) request Alternative Dispute Resolution (ADR). If a PEC is held, the NRC will issue a press release to announce the time and date of the conference; however, the PEC will be closed to public observation since information related to an OI report will be discussed and the report has not been made public. If you decide to participate in a PEC or pursue ADR, please contact Nicole Coover, Branch Chief, Division of Construction Oversight, NRC Region II, at 404-997-4510, or via electronic mail at Nicole.Coover@nrc.gov within 10 days of the date of this letter. A PEC should be held within 30 days and an ADR session within 45 days of the date of this letter.

If you choose to provide a written response, it should be clearly marked as a "Response to Apparent Violation in NRC Inspection Report 05200025/2022011; EA-22-081" and should include: (1) the reason for the AVs or, if contested, the basis for disputing the AVs; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken; and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence if the correspondence adequately addresses the required response. Additionally, your response should be sent to the NRC's Document Control Center, with a copy mailed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, NRC Region II, Marquis One Tower, 245 Peachtree Center Avenue, NE, Suite 1200, Atlanta, GA 30303-1257 within 30 days of the date of this letter. If an adequate response is not received within the time specified or an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision or schedule a PEC.

If you choose to request a PEC, the conference will afford you the opportunity to provide your perspective on these matters and any other information that you believe the NRC should take into consideration before making an enforcement decision. The decision to hold a PEC does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. This conference would be conducted to obtain information to assist the NRC in making an enforcement decision. The topics discussed during the conference may include information to determine whether a violation occurred, information to determine the significance of a violation, information related to the identification of a violation, and information related to any corrective actions taken or planned.

In lieu of a PEC, you may also request ADR with the NRC in an attempt to resolve this issue. ADR is a general term encompassing various techniques for resolving conflicts using a neutral third party. The technique that the NRC has decided to employ is mediation; a voluntary, informal process in which a trained neutral mediator works with parties to help them reach resolution. If the parties agree to use ADR, they select a mutually agreeable neutral mediator who has no stake in the outcome and no power to make decisions. Mediation gives parties an opportunity to discuss issues, clear up misunderstandings, be creative, find areas of agreement, and reach a final resolution of the issues. Additional information concerning the NRC ADR program can be obtained at <http://www.nrc.gov/about-nrc/regulatory/enforcement/adr.html>. The Institute on Conflict Resolution (ICR) at Cornell University has agreed to facilitate the NRC program as a neutral third party. Please contact ICR at 877-733-9415 within 10 days of the date of this letter if you are interested in pursuing resolution of this issue through ADR.

Please be advised the number and characterization of the AVs described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

If you contest the NCV or its significance as described in Enclosure 2, 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 VEGP, Units 3 & 4.

The NRC has determined that the technical aspects associated with the apparent failure during HFT to follow a procedural step and the subsequent false confirmation (in another procedure) that the step was completed, which resulted in two AVs, and the technical aspects associated with the Severity Level IV NCV for the failure to maintain and retrieve a quality record for HFT, do not represent an immediate safety or operability concern for Vogtle Unit 3. In May 2021, you terminated the initial HFT; performed pressurizer upper lateral support shim gap measurements; adjusted shim gap measurements to ensure conformity to design specifications; and conducted HFT in its entirety with satisfactory results. The associated reactor coolant system (RCS) components and supports were verified not to be damaged because of the failure to follow procedures. Additionally, following your corrective actions in May 2021 to restore the pressurizer upper lateral support shim gap measurements to compliance, the NRC subsequently verified with reasonable assurance of adequate protection that Inspections, Tests, Analyses, and Acceptance Criteria 2.1.02.02a (Index #13) (which required that RCS components, piping, and supports were constructed in accordance with the American Society of Mechanical Engineers Section III requirements listed in the Combined License) was met. As a result, there were no impacts to the 10 CFR 52.103(g) finding for Unit 3 (see Vogtle Electric Generating Plant Unit 3 - Finding that Acceptance Criteria in the Combined License Are Met (10 CFR 52.103(g) - Finding in NRC's Agencywide Documents Access and Management System (ADAMS) ML20290A280) due to the violations described in this letter and inspection report.

In accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the ADAMS, accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Please note that final NRC investigation documents, such as the OI report described above, may be made available to the public under the Freedom of Information Act (FOIA), subject to redaction of information appropriate under the FOIA. Requests under the FOIA should be made in accordance with 10 CFR 9.23, "Requests for Records." Additional information is available on the NRC website at <http://www.nrc.gov/reading-rm/foia/foia-privacy.html>.

J. Coleman

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If you have any questions concerning this matter, please feel free to contact please contact Ms. Nicole Coover at 404-997-4510.

Sincerely,



Signed by Lopez-Santiago, Omar
on 03/28/23

Omar López-Santiago, Director
Division of Construction Oversight

Docket No.: 5200025

License No.: NPF-91

Enclosures:

1. Factual Summary of NRC OI Case No. 2-2021-020
2. NRC Inspection Report (IR) 05200025/2022011
w/attachment: Supplemental Information

cc w/ encl: Distribution via LISTSERV

SUBJECT: NRC OFFICE OF INVESTIGATIONS REPORT 2-2021-020 AND VOGTLE
ELECTRIC GENERATING PLANT, UNIT 3 - NRC INSPECTION REPORT
05200025/2022011 AND APPARENT VIOLATIONS
DATED MARCH 28, 2023

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FACTUAL SUMMARY
OFFICE OF INVESTIGATIONS REPORT NO. 2-2021-020

On August 18, 2022, the U.S. Nuclear Regulatory Commission (NRC) Office of Investigations (OI) completed an investigation to determine whether a former test engineer employed by a contractor of Southern Nuclear Operating Company (SNC), deliberately falsified completion of a required procedural step associated with hot functional testing (HFT) procedures at Vogtle Electric Generating Plant (VEGP), Unit 3. The test engineer was employed at Vogtle at various times prior to January 2017 and from January 2017 until July 2021.

On April 26, 2021, HFT began at Vogtle Unit 3. During the ambient phase of HFT, SNC Procedure 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program," Version 2.0, Step 4.1.2, requires the licensee to obtain ambient temperature pressurizer upper lateral support shim gap measurements and record them in the data table in Attachment 59 of the procedure. On or about April 28, 2021, the test engineer instructed another engineer to get measurements of the shim gaps, but if he could not do so, to just perform a visual check to see if there were gaps. The other engineer performed an "eyeball" test and confirmed there were gaps but did not take measurements. On April 30, 2021, the test engineer initialed Step 4.1.13 of SNC Procedure 3-GEN-ITPP-517, "Precore Hot Functional Test Procedure," Version 4.1, confirming that prerequisite activities in SNC procedure 3-GEN-ITPP-507, Version 2.0, Section 4.1, had been completed.

On May 16, 2021, at the 250°F plateau, SNC discovered that two reactor coolant system pipe supports were outside of the expected tolerance range. SNC decided to cool the plant down to ambient conditions to reset those supports. While at the ambient temperature level, the licensee reverified all ambient measurements required by the procedure. During the reverification process, the licensee discovered that no measurements of the pressurizer upper lateral support shim gaps had been obtained or recorded in Attachment 59 during the ambient stage of HFT, as required by 3-GEN-ITPP-507, Step 4.1.2. In interviews with OI, the test engineer admitted that, at the time he initialed Step 4.1.13 of 3-GEN-ITPP-517, he knew that the procedure required an actual measurement (i.e., a number) to be entered in the Attachment 59 data table and he knew that actual measurements had not been taken. The test engineer also stated that he was not expecting the other engineer to obtain measurements because the other engineer "went in with nothing to measure with." In addition, when asked by OI if the procedure allowed leeway to just verify a gap if measurements could not be taken, the test engineer stated that it did not.

In his interviews with OI, the test engineer stated that on April 26, 2021, when he received electronic mail notification from SNC management that HFT would begin later that day, this was a surprise to him and other engineering staff. The test engineer claimed that he gave the instruction to just verify gaps due to perceived schedule pressure and because they "didn't have anybody qualified to take mechanical measurements."

Based on the evidence gathered during the OI investigation, including the results of the licensee's internal investigation, it appears that on April 28, 2021, the test engineer engaged in deliberate misconduct, in violation of 10 CFR 52.4(c)(1), by deliberately failing to obtain ambient temperature shim gap measurements and record the values on the data sheet, as required by SNC procedure 3-GEN-ITPP-507, Step 4.1.2 and Attachment 59. Additionally, it appears that the test engineer deliberately provided inaccurate information to the licensee, in violation of 10 CFR 52.4(c)(2), when he signed off on Step 4.1.13 of SNC procedure 3-GEN-ITPP-517 confirming that Section 4.1 of 3-GEN-ITPP-507 had been completed. The actions of the test engineer appear to have caused the licensee to be in violation of 10 CFR Part 50, Appendix B, Criterion V and 10 CFR 52.6.

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

Docket Number: 05200025

License Number: NPF-91

Report Number: 05200025/2022011

Licensee: Southern Nuclear Operating Company, Inc

Facility: Vogtle Unit 3 Combined License

Location: Waynesboro, GA

Inspector: B. Kemker, Senior Resident Inspector
Division of Construction Oversight

Approved by: Omar López-Santiago, Director
Division of Construction Oversight

SUMMARY OF FINDINGS

Inspection Report 05200025/2022011; Vogtle Unit 3 Combined License, Inspection Report.

This report covers a legacy Vogtle Electric Generating Plant (VEGP) Unit 3 construction inspection issue that occurred during hot functional testing (HFT) in April 2021. The legacy construction inspection was conducted by resident inspectors during the spring of 2021 to determine if the technical aspects associated with the apparent failure to follow a procedural step, and the subsequent false confirmation (in another procedure) that the step had been completed, could potentially impact Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC). Documenting this inspection report and associated findings was delayed because it is related to Office of Investigations (OI) Report No. 2-2021-020, which was initiated on August 20, 2021, and completed on August 18, 2022. Section 1.1.14 of the Enforcement Manual states, *"In cases where an OI investigation is being conducted, enforcement action should generally not be taken for matters that are within the scope of the OI investigation until the investigation has been completed and the report issued."*

Because the performance issues discussed in this report were identified prior to the Title 10 of the *Code of Federal Regulations* (10 CFR) 52.103(g) determination; involved plant testing during the construction phase; and impacted the construction cornerstone attributes and objectives; they were evaluated using the construction reactor oversight process in accordance with Inspection Manual Chapter (IMC) 0613, "Power Reactor Construction Inspection Reports," Appendix B, "Issue Screening," dated November 4, 2020. Any corrective action inspections associated with the findings will be documented and tracked in accordance with the reactor oversight process IMCs. The significance of inspection findings is indicated by their color (i.e., Greater than Green, or Green, White, Yellow, Red), which is determined using IMC 2519, "Construction Significance Determination Process," dated October 26, 2020. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated January 13, 2023.

The NRC has determined the technical aspects associated with the apparent failure to follow a procedural step, and the subsequent false confirmation (in another procedure) that the step had been completed, during HFT, that resulted in two apparent violations and one Severity Level IV noncited violation, does not represent an immediate safety or operability concern for VEGP Unit 3. In May 2021, the licensee terminated the initial HFT; performed pressurizer upper lateral support shim gap measurements; adjusted shim gap measurements to ensure conformity to design specifications; and conducted HFT in its entirety with satisfactory results. The associated reactor coolant system (RCS) components and supports were verified not to be damaged because of the failure to follow procedures. Additionally, following the licensee's corrective actions in May 2021 to restore the pressurizer upper lateral support shim gap measurements to compliance, the NRC subsequently verified with reasonable assurance of adequate protection that ITAAC 2.1.02.02a (Index# 13) (which required that RCS components, piping, and supports were constructed in accordance with the American Society of Mechanical Engineers Section III requirements listed in the Combined License) was met. As a result, there were no impacts to the 10 CFR 52.103(g) finding for VEGP Unit 3 due to the violations described in this inspection report.

LIST OF FINDINGS AND VIOLATIONS

Failure to Follow Procedure for Unit 3 Hot Functional Testing			
Cornerstone	Significance	Cross-cutting Aspect	Inspection Procedure
Inspection/Testing	To Be Determined (TBD) AV 05200025/2022011-01 Open EA-22-081	None (Not Present Performance)	35007
An apparent violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the failure to follow procedures during hot functional testing (HFT). Specifically, the licensee failed to obtain initial (i.e., ambient temperature) Unit 3 pressurizer upper lateral support shim gap measurements and record the measurements on Attachment 59 of 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program," prior to plant heat up during HFT.			

Failure to Maintain Complete and Accurate Test Records for Unit 3 Hot Functional Testing			
Cornerstone	Significance	Cross-cutting Aspect	Inspection Procedure
Not Applicable	TBD AV 05200025/2022011-02 Open EA-22-081	Not Applicable	35007
An apparent violation of 10 CFR 52.6(a), "Completeness and Accuracy of Information," was identified for the licensee's failure to maintain complete and accurate information in quality assurance records. Specifically, Step 4.1.13 of SNC procedure 3-GEN-ITPP-517 was initiated and dated, confirming that procedure 3-GEN-ITPP-507, Section 4.1, had been performed, when, in fact, required shim gap measurements on the Unit 3 pressurizer upper lateral support were not obtained and recorded as required by Step 4.1.2 and Attachment 59 of procedure 3-GEN-ITPP-507.			

Failure to Maintain and Retrieve a Quality Record for Hot Functional Testing of the Unit 3 Reactor Coolant System			
Cornerstone	Significance	Cross-cutting Aspect	Inspection Procedure
Inspection/Testing	Severity Level IV/Green NCV 05200025/2022011-03 Open/Closed	None (Not Present Performance)	35007
The inspectors identified a construction finding of very low safety significance with an associated Severity Level IV noncited violation of 10 CFR Part 50, Appendix B, Criterion XVII, "Quality Assurance Records," for the licensee's failure to maintain retrievable records of an activity affecting quality. Specifically, the licensee failed to maintain the initial performance copy of 3-GEN-ITPP-507 as a quality record.			

REPORT DETAILS

INSPECTION SCOPE

In accordance with Inspection Manual Chapter (IMC) 2504, "Construction Inspection Program – Inspection of Construction and Operational Programs," Appendix A, "Inspection of Construction Programs," the inspectors reviewed selected Southern Nuclear Operating Company, Inc. (SNC) procedures and records, observed activities, and interviewed personnel to assess the licensee's performance and conformance with Commission rules and regulations, license conditions, site procedures, and standards. This inspection was conducted using the appropriate portions of the inspection procedures (IPs) in effect at the time of the inspection.

35007 - Construction Quality Assurance Criterion 16

Resident Inspector Follow-Up of Selected Issues (Inspection Procedure Section A16.04.02.02)

The inspectors selected the following issue for in-depth review:

- Condition Report (CR) 50093275, "Missed Data Collection"

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above CR and other related CRs:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences;
- evaluation and disposition of operability/functionality/reportability issues;
- classification and prioritization of the resolution of the problem commensurate with safety significance;
- identification of the root and contributing causes of the problem; and
- identification of corrective actions, which were appropriately focused to correct the problem.

The inspectors discussed the corrective actions and associated evaluations with licensee personnel.

INSPECTION RESULTS

Failure to Follow Procedure for Unit 3 Hot Functional Testing			
Cornerstone	Significance	Cross-cutting Aspect	Inspection Procedure
Inspection/Testing	TBD AV 05200025/2022011-01 Open EA-22-081	None (Not Present Performance)	35007
<u>Introduction:</u> An apparent violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the failure to follow procedures during hot functional testing			

(HFT). Specifically, the licensee failed to obtain initial (i.e., ambient temperature) Unit 3 pressurizer upper lateral support shim gap measurements and record the measurements on Attachment 59 of 3-GEN-ITPP-507 prior to plant heat up during HFT.

Description:

On April 26, 2021, the licensee began HFT for Vogtle Unit 3. On May 12, 2021, while recording thermal expansion, dynamic effects, and vibration (TEDEV) measurements with the Unit 3 reactor coolant system (RCS) at 250 degrees Fahrenheit (°F) for HFT, the licensee found two RCS constant supports were outside the expected range. The licensee determined the constant support settings had been set incorrectly and the plant was cooled down to ambient conditions to reset the supports. After the plant was cooled down to ambient temperature, the licensee reverified all the ambient measurements required by 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program." This procedure provides detailed instructions for performing and documenting preoperational testing activities of the TEDEV Program per section 7.1 of the VEGP Units 3&4 Updated Final Safety Analysis Report (UFSAR) to monitor thermal movement of plant piping systems and components during plant heat up and cool down to verify movements are within design requirements.

On May 16, 2021, while reperforming the Unit 3 pressurizer upper lateral support shim gap measurements in accordance with 3-GEN-ITPP-507, the licensee discovered the initial (i.e., ambient temperature) shim gap measurement data had not been collected prior to initial plant heat up as required by step 4.1.2 of the procedure even though the corresponding procedure step in the higher tier procedure (i.e., step 4.1.13 of 3-GEN-ITPP-517, "Precore Hot Functional Test Procedure") for completion of section 4.1, "RCS Ambient Plateau Pre-Heat-up and Bubble Formation," of 3-GEN-ITPP-507 had been signed as completed. The NRC inspectors had previously reviewed the licensee's evaluation and corrective actions for the technical issue associated with the measurement data that was not collected, which was documented in CR 50093275, "Missed Data Collection," to confirm the pressurizer lateral support installation was correct prior to the completion of HFT and documented the results in section 1P02 of NRC Inspection Report 05200025/2021003, 05200026/2021003 (ADAMS ML21221A034). While no findings were identified with the licensee's cause evaluation and corrective actions for the issue, the inspectors deferred disposition of the performance issues associated with the conduct of the test procedure until additional information became available to complete this review.

The licensee identified it had failed to follow its procedure by not obtaining the initial (i.e., ambient temperature) gap measurements (refer to CR 50093275) that could have led it to recognize many of the pressurizer upper lateral support shim gaps were not correct prior to plant heat up at the start of HFT (refer to CR 50092727). This was a missed opportunity to identify the issue before the initial plant heat up. These shims are cold gapped when installed based on calculations performed in the structural qualification of the upper support. At normal operating temperature, the pressurizer shell should be touching the shims or have a slight ($\leq 1/32$ -inch) gap. There was no contact identified between the pressurizer and the upper lateral support shims at 250°F; however, the gaps between some of the upper lateral shims and the pressurizer were less than the design requirement of 0.228-inches("), which may have resulted in contact at normal operating temperature had the plant continued to heat up to that temperature.

The licensee verified and corrected, where necessary, the shim gaps under work package SV3-PH01-AEW-1138977 and engineering service request 50092725. As-found measurements identified five shims were within design tolerance. Eighteen shims had gaps less than 0.228" and were machined to obtain the correct gaps, re-installed, and verified within design tolerance. Nine shims had gaps larger than 0.260" and were replaced with new

shims and verified within design tolerance after installation. Additionally, at the time the test was performed, the licensee was required to verify applicable Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) were completed and verified for ITAAC 2.1.02.02a, which required that RCS components, piping, and supports were constructed in accordance with the American Society of Mechanical Engineers (ASME) Section III requirements, listed in the Combined License, which supported the 10 CFR 52.103(g) finding for VEGP Unit 3.

Procedure 3-GEN-ITPP-507 was implemented under work order (WO) SV3-RCS-T0W-1245005, "(HFT) Perform 3-GEN-ITPP-507 Preoperational Testing Activities that Monitor the Thermal Expansion on RCS, CVS [Chemical and Volume Control System], PXS [Passive Core Cooling System], RNS [Normal Heat Removal System], & SGS [Steam Generator System]," Revision 0. The WO was partially completed after the plant was cooled down to ambient temperature and a new WO (SV3-RCS-T0W-1242796) was created to resume 3-GEN-ITPP-507 testing after the pressurizer supports were all verified and corrected (refer to CR 50106464).

In response to the inspectors' questions, the licensee confirmed step 4.1.2 in 3-GEN-ITPP-507 was not performed.

Corrective Actions: The licensee entered this finding into its corrective action program (CAP) for evaluation and identification of appropriate corrective actions. The finding did not present an immediate safety concern. The licensee completed corrective action to verify the installation of all Unit 3 pressurizer upper lateral support shims within design tolerances, and as a result, this issue also does not represent an operability concern for VEGP Unit 3.

Corrective Action References: CR 50099863, CR 50093275, and CR 50092727

Construction Reactor Oversight Process Analysis:

Performance Deficiency: The inspectors determined the failure to follow procedures during HFT was a licensee performance deficiency warranting a significance evaluation.

Screening: Because this performance issue was identified prior to the 10 CFR 52.103(g) determination and involved plant testing during the construction phase, it was evaluated using the Construction Reactor Oversight Process (cROP). Per the guidance in IMC 0613, "Power Reactor Construction Inspection Reports," Appendix B, "Issue Screening," dated November 4, 2020, the inspectors determined traditional enforcement should be applied to this performance deficiency because it involved an apparent willful violation of NRC requirements. This violation is being treated as an apparent violation pending a final significance (enforcement) determination.

Significance: Additionally, in accordance with IMC 0613, Appendix B, the significance determination process was used to inform the significance of the underlying performance deficiency. Per further guidance in IMC 0613, Appendix E, "Examples of Minor Construction Issues," the inspectors determined this performance deficiency was of more than minor safety significance, and thus a finding, because it represented a substantive failure to establish or implement an adequate program, process, procedure, or quality oversight function. The inspectors also reviewed the Appendix E examples of minor issues and found no examples related to this issue.

This finding was associated with the Inspection/Testing Cornerstone of the Construction Reactor Safety strategic performance area. This finding was not associated with a security program; it was not associated with an IMC 2504 operational program after the

implementation milestone was reached; and it was not associated with a repetitive, NRC-identified omission of a program critical attribute. In accordance with IMC 2519, "Construction Significance Determination Process," Appendix A, "AP1000 Construction Significance Determination Process," dated October 26, 2020, the inspectors determined this finding was associated with a system; (i.e., the RCS), which is assigned to the high-risk importance column of the AP1000 Construction Significance Determination Matrix. The inspectors determined this finding for the technical aspect was of very low safety significance (Green) because there was reasonable assurance the design function of the RCS was not impaired by the performance deficiency.

Cross-Cutting Aspect: No cross-cutting aspect was assigned to this finding because the performance deficiency was not reflective of current licensee performance.

Enforcement:

The cROP's significance determination process does not specifically consider willfulness in its assessment of licensee performance. Therefore, it is necessary to address this violation which involves apparent willfulness using traditional enforcement to adequately deter non-compliance.

Violation: Title 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Southern Nuclear Operating Company (SNC) test procedure 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program," Section 4.1, Step 4.1.2 states, "Record SS30 Primary Support measurements on Attachment 46 through Attachment 61."

SNC test procedure 3-GEN-ITPP-507, Attachment 59 requires, in part, that ambient temperature pressurizer upper lateral support shim gap measurements be obtained at specific locations and the values recorded on Attachment 59.

Contrary to the above, between April 28 and 30, 2021, the licensee failed to obtain initial (i.e., ambient temperature) Unit 3 pressurizer upper lateral support shim gap measurements and record the measurements on Attachment 59 of 3-GEN-ITPP-507 prior to plant heat up during HFT.

Enforcement Action: This violation is being treated as an apparent violation pending a final significance (enforcement) determination. (AV 05200025/2022011-01, Failure to Follow Procedure for Unit 3 Hot Functional Testing).

Failure to Maintain Complete and Accurate Test Records for Unit 3 Hot Functional Testing

Cornerstone	Significance	Cross-cutting Aspect	Inspection Procedure
Not Applicable	TBD AV 05200025/2022011-02 Open EA-22-081	Not Applicable	35007

Introduction:

An apparent violation of 10 CFR 52.6(a), "Completeness and Accuracy of Information," was identified for the licensee's failure to maintain complete and accurate information in quality assurance records. Specifically, Step 4.1.13 of SNC procedure 3-GEN-ITPP-517 was initialed and dated, confirming that procedure 3-GEN-ITPP-507, Section 4.1, had been performed, when, in fact, required shim gap measurements on the Unit 3 pressurizer upper lateral support were not obtained and recorded as required by Step 4.1.2 and Attachment 59 of procedure 3-GEN-ITPP-507.

Description:

On April 26, 2021, the licensee began HFT for Vogtle Unit 3. On April 30, 2021, Step 4.1.13 of 3-GEN-ITPP-517, "Precore Hot Functional Test Procedure" was initialed and dated, confirming completion of section 4.1 of 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program."

On May 12, 2021, while recording TEDEV measurements with the Unit 3 RCS at 250°F for HFT, the licensee found two RCS constant supports were outside the expected range. The licensee determined the constant support settings had been set incorrectly and the plant was cooled down to ambient conditions to reset the supports. After the plant was cooled down to ambient temperature, the licensee reverified all the ambient measurements required by 3-GEN-ITPP-507. This procedure provides detailed instructions for performing and documenting preoperational testing activities of the TEDEV Program per section 7.1 of the VEGP Units 3&4 UFSAR to monitor thermal movement of plant piping systems and components during plant heat up and cool down to verify movements are within design requirements.

On May 16, 2021, while reperforming the Unit 3 pressurizer upper lateral support shim gap measurements in accordance with 3-GEN-ITPP-507, the licensee discovered the initial (i.e., ambient temperature) shim gap measurement data had not been collected prior to initial plant heat up as required by step 4.1.2 of the procedure even though the corresponding procedure step in the higher tier procedure (i.e., step 4.1.13 of 3-GEN-ITPP-517, "Precore Hot Functional Test Procedure") for completion of section 4.1, "RCS Ambient Plateau Pre-Heat-up and Bubble Formation," of 3-GEN-ITPP-507 had been signed as completed.

In response to the inspectors' questions, the licensee confirmed step 4.1.2 in 3-GEN-ITPP-507 was not performed and it had failed to verify all the steps in section 4.1 of 3-GEN-ITPP-507 were performed when step 4.1.13 in 3-GEN-ITPP-517 was signed as completed. This resulted in a required Unit 3 HFT quality record not being complete and accurate in all material respects.

Corrective Actions: The licensee entered this finding into its CAP for evaluation and identification of appropriate corrective actions. The finding did not present an immediate safety concern. The licensee completed corrective action to verify the installation of all Unit 3 pressurizer upper lateral support shims within design tolerances, and as a result, this issue also does not represent an operability concern for VEGP Unit 3.

Corrective Action References: CR 50099863, CR 50093275, and CR 50092727

Construction Reactor Oversight Process Analysis:

Performance Deficiency: NRC staff determined there was no cROP performance deficiency. This violation which involves apparent willfulness is being addressed using traditional enforcement.

Enforcement:

The cROP's significance determination process does not specifically consider willfulness in its assessment of licensee performance. Therefore, it is necessary to address this violation which involves apparent willfulness using traditional enforcement to adequately deter non-compliance.

Title 10 CFR 52.6(a), "Completeness and Accuracy of Information," states, in part, that information required by the Commission's regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

10 CFR Part 50, Appendix B, Criterion XVII, "Quality Assurance Records," states, in part, "Sufficient records shall be maintained to furnish evidence of activities affecting quality," and that such records shall include operating logs and the results of reviews, inspections and tests.

SNC test procedure 3-GEN-ITPP-517, "Precore Hot Functional Test Procedure," Version 4.1, Step 4.1.13, requires an employee to initial and date confirming that SNC procedure 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program," Section 4.1, "RCS Ambient Plateau Pre Heatup," was performed.

SNC test procedure 3-GEN-ITPP-507, Section 4.1, Step 4.1.2, states, "Record SS30 Primary Support measurements on Attachment 46 through Attachment 61."

SNC test procedure 3-GEN-ITPP-507, Attachment 59, requires, in part, that ambient temperature pressurizer upper lateral support shim gap measurements be obtained at specific locations and the values recorded on Attachment 59.

Contrary to the above, on April 30, 2021, information that the licensee was required to maintain was not complete and accurate in all material respects. Specifically, Step 4.1.13 of SNC procedure 3-GEN-ITPP-517 was initialed and dated, confirming that procedure 3-GEN-ITPP-507, Section 4.1, had been performed, when, in fact, required shim gap measurements on the Unit 3 pressurizer upper lateral support were not obtained and recorded as required by Step 4.1.2 and Attachment 59 of procedure 3-GEN-ITPP-507. Documents associated with test procedures 3-GEN-ITPP-517 and 3-GEN-ITPP-507 are records the licensee is required to maintain pursuant to 10 CFR Part 50, Appendix B, Criterion XVII, "Quality Assurance Records." The inaccurate information is material to the NRC because the licensee relied on it to continue with hot functional testing when prerequisite steps had not been completed, and because the records of these procedures involving tests of safety-related equipment indicate whether the licensee is performing quality-related and safety-related activities in accordance with its procedures and NRC regulations.

Enforcement Action: This violation is being treated as an apparent violation pending a final significance (enforcement) determination. (AV 05200025/2022011-02, Failure to Maintain Complete and Accurate Test Records for Unit 3 Hot Functional Testing).

Failure to Maintain and Retrieve a Quality Record for Hot Functional Testing of the Unit 3 Reactor Coolant System

Cornerstone	Significance	Cross-cutting Aspect	Inspection Procedure
Inspection/Testing	Severity Level IV/Green NCV 05200025/2022011-03 Open/Closed	None (Not Present Performance)	35007

Introduction:

The inspectors identified a construction finding of very low safety significance (Green) with an associated Severity Level IV noncited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVII, "Quality Assurance Records," for the licensee's failure to maintain retrievable records of an activity affecting quality. Specifically, the licensee failed to maintain the initial performance copy of 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program," as a quality record.

Description:

During inspection of this issue, the inspectors attempted to locate the performance copy of SV3-RCS-T0W-1245005 to review the work performed up to the initial plant heat up to 250°F and to see whether 3-GEN-ITPP-507 step 4.1.2, which was for recording the primary support measurements on attachments 46 through 61 of the procedure, had been signed as completed. However, the licensee cancelled the WO and discarded the quality record by mistake. Based upon the inspectors' interviews, the licensee had intended to close the WO but instead canceled it, which resulted in the record being destroyed rather than archived in the licensee's data management system. The licensee later discovered a partial copy of the WO during its investigation of this issue; however, it was only a partial copy of the original procedure and not a complete quality record.

Corrective Actions: The licensee entered this finding into its CAP as CR 50127445 to evaluate the cause and to identify appropriate corrective actions. The licensee took the required corrective actions to restore compliance.

Corrective Action References: CR 50127445

Construction Reactor Oversight Process Analysis:

Performance Deficiency: The licensee's failure to maintain a record required to furnish evidence of the performance of activities affecting the quality for testing of the RCS was contrary to the requirements of 10 CFR 50, Appendix B, Criterion XVII, "Quality Assurance Records," and was therefore a licensee performance deficiency warranting a significance evaluation. Specifically, the licensee failed to maintain the initial performance copy of 3-GEN-ITPP-507 (WO SV3-RCS-T0W-1245005) as a quality record.

Screening: Because this performance issue was identified prior to the 10 CFR 52.103(g) determination and involved plant testing during the construction phase, it was evaluated using the cROP. Per the guidance in IMC 0613, "Power Reactor Construction Inspection Reports," Appendix B, "Issue Screening," dated November 4, 2020, the inspectors determined traditional enforcement should be applied to this performance deficiency because it involved a violation that impacted the ability of the NRC to perform its regulatory oversight function. Assessing the performance deficiency in accordance with the NRC Enforcement Policy, the inspectors determined it to be a Severity Level IV violation because the record was not

retrievable. Consistent with the guidance in the Enforcement Policy, the inspectors determined enforcement discretion would not apply to this performance deficiency.

Significance: Additionally, in accordance with IMC 0613, Appendix B, the significance determination process was used to inform the significance of the underlying performance deficiency. Per further guidance in IMC 0613, Appendix E, "Examples of Minor Construction Issues," the inspectors determined this performance deficiency was of more than minor safety significance, and thus a finding, because it represented an irretrievable loss of a quality assurance record. The inspectors also reviewed the Appendix E examples of minor issues and found one example (example 4) related to a licensee's failure to maintain quality records. The inspectors determined; however, this example was not relevant to the performance deficiency because the "not minor if" discussion centered on whether the licensee required the records to demonstrate adequacy or quality of an SSC rather than to maintain complete evidence of the results of testing.

This finding was associated with the Inspection/Testing Cornerstone of the Construction Reactor Safety strategic performance area. This finding was not associated with a security program; it was not associated with an IMC 2504 operational program after the implementation milestone was reached; and it was not associated with a repetitive, NRC-identified omission of a program critical attribute. In accordance with IMC 2519, "Construction Significance Determination Process," Appendix A, "AP1000 Construction Significance Determination Process," dated October 26, 2020, the inspectors determined this finding was associated with a system (i.e., the RCS), which is assigned to the high-risk importance column of the AP1000 Construction Significance Determination Matrix. The inspectors determined this finding was of very low safety significance (Green) because there was reasonable assurance the design function of the RCS would not be impaired by the performance deficiency.

Cross-Cutting Aspect: No cross-cutting aspect was assigned to this finding because the performance deficiency was not reflective of current licensee performance.

Enforcement:

Violation: Title 10 CFR 50, Appendix B, Criterion XVII, "Quality Assurance Records," states, in part, that sufficient records shall be maintained to furnish evidence of activities affecting quality. Records shall be identifiable and retrievable.

Contrary to the above, on or before September 29, 2021, the licensee failed to maintain a record required to furnish evidence of the performance of activities affecting the quality for testing of the VEGP Unit 3 RCS. Specifically, WO SV3-RCS-T0W-1245005, "(HFT) Perform 3-GEN-ITPP-507 Preoperational Testing Activities that Monitor the Thermal Expansion on RCS, CVS, PXS, RNS, & SGS," Revision 0 for the initial performance of 3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program," Version 2.0, was not identifiable and retrievable as a quality record.

Enforcement Action: Because this Severity Level IV violation was not repetitive or willful; was associated with a performance deficiency of very low safety significance; and was entered into the licensee's CAP, it is being treated as a noncited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy. (NCV 05200025/2022011-03, Failure to Maintain and Retrieve a Quality Record for Hot Functional Testing of the Unit 3 Reactor Coolant System).

EXIT MEETING

On March 28, 2023, the NRC inspectors discussed the results of the inspection with Mr. G. Chick, VEGP Units 3 and 4 Executive Vice President, and other members of your staff. Proprietary information was reviewed during the inspection but was not included in the inspection report.

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Type</u>	<u>Status</u>	<u>Description</u>
05200025/2022011-01	AV	Open	Failure to Follow Procedure for Unit 3 Hot Functional Testing
05200025/2022011-02	AV	Open	Failure to Maintain Complete and Accurate Test Records for Unit 3 Hot Functional Testing
05200025/2022011-03	NCV	Open/Closed	Failure to Maintain and Retrieve a Quality Record for Hot Functional Testing of the Unit 3 Reactor Coolant System

DOCUMENTS REVIEWED

3-GEN-ITPP-507, "Thermal Expansion, Dynamic Effects, and Vibration (TEDEV) Program," Versions 3&4
 3 GEN-ITPP-517, "Precore Hot Functional Test (HFT) Procedure," Version 4.1
 SV3-RCS-T0W-1242796, "Perform Thermal Expansion Pre-Operational Testing per 3-GEN-ITPP-507," Revision 0
 SV3-RCS-T0W-1245005, "(HFT) Perform 3-GEN-ITPP-507 Preoperational Testing Activities that Monitor the Thermal Expansion on RCS, CVS, PXS, RNS, & SGS," Revision 0
 SV3-RCS-T0W-1173381, "Perform RCS System Pre-Core Functional Testing per 3-GEN-ITPP-517," Revision 0
 SV3-PH01-AEW-1138977, "ASME III – Verify/Correct Pressurizer Upper Lateral Support Shim Gaps IAW N&D SV3-PH01-GNR-000045," Revision 0
 CR 50093275, "Missed Data Collection"
 CR 50096876, "Errors in TEDEV Work Package Were Identified Based Upon NRC Question"
 CR 50092221, "Spray Line Support Not Correct with Expected Movements (TEDEV)"
 CR 50092599, "Spray Line Support Not Correct with Expected Movements (TEDEV)"
 CR 50092727, "PZR Upper Lateral Support Shim Gaps"
 CR 50099863, "NRC Licensee Identified Violation (Green) – ITP Procedure 3-GEN-ITPP-507 Not Completed as Written"
 CR 50099864, "NRC Identified – Minor Violation – Pressurizer Support Cold Setting"
 CR 50099865, "NRC Unresolved Issue – 3-GEN-ITPP-507 Procedure Step Signed Off but Not Completed"
 CR 50106464, "Preoperational Testing Not Completed Under Original Work Order"
 CR 50127445, "ITP WP Cancelled Vs. Closed"

LIST OF ACRONYMS

10 CFR	Title 10 of the Code of Federal Regulations
ADAMS	Agencywide Documents Access and Management System
AV	Apparent Violation
CAP	Corrective Action Program
CR	Condition Report
cROP	Construction Reactor Oversight Process
CVS	Chemical and Volume Control System
HFT	Hot Functional Testing
IMC	Inspection Manual Chapter
ITAAC	Inspections, Tests, Analyses, and Inspection Criteria
NCV	Noncited Violation
NRC	US Nuclear Regulatory Commission
OI	Office of Investigations
PXS	Passive Core Cooling System
RCS	Reactor Coolant System
RNS	Normal Residual Heat Removal System
SGS	Steam Generator System
SNC	Southern Nuclear Operating Company, Inc.
TBD	To Be Determined
TEDEV	Thermal Expansion, Dynamic Effects, and Vibration
VEGP	Vogtle Electric Generating Plant
WO	Work Order