



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

November 8, 2022

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

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNIT 4 - NRC INITIAL TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION REPORT 05200026/2022006

Dear Ms. Coleman:

On September 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Vogtle Electric Generating Plant, Unit 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on October 18th, 2022, with Mr. Glen Chick, Vogtle 3 & 4 Executive Vice President, and other members of your staff.

The inspection examined a sample of construction activities conducted under your Combined License (COL) as it relates to safety and compliance with the Commission's rules and regulations and with the conditions of these documents. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one finding of very low safety significance (Green) was identified. This finding did not involve a violation of NRC requirements.

If you disagree with a cross-cutting aspect assignment or the finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC Resident Inspector at the Vogtle Electric Generating Plant, Units 3 & 4.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if 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 document system ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). Should you have any questions concerning this letter, please contact us.

Sincerely,

 Signed by Davis, Bradley
on 11/08/22

Bradley J. Davis, Chief
Construction Inspection Branch 2
Division of Construction Oversight

Docket No. 5200026
License No. NPF-92

Enclosure:
NRC Inspection Report (IR) 05200026/2022006
w/attachment: Supplemental Information

cc w/ enc: Distribution via LISTSERV

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNIT 4 – NRC INITIAL TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION REPORT 05200026/2022006 – dated November 8, 2022

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DATE	11/8/2022	11/8/2022	11/8/2022		

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U.S. NUCLEAR REGULATORY COMMISSION
Region II

Docket Numbers: 5200026

License Numbers: NPF-92

Report Numbers: 05200026/2022006

Licensee: Southern Nuclear Operating Company, Inc

Facility: Vogtle Unit 4 Combined License

Location: Waynesboro, GA

Inspection Dates: July 1, 2022 through September 30, 2022

Inspectors: J. Eargle, Senior Resident Inspector – Testing, Division of Construction Oversight (DCO)
B. Caballero, Sr. Operations Engineer, Division of Reactor Safety (DRS)
S. Downey, Materials Engineer, DRS
C. Even, Senior Construction Inspector, DCO
J. Parent, Resident Inspector, DCO
M. Riley, Senior Construction Inspector, DCO
S. Sanchez, Emergency Preparedness Inspector, DRS
T. Scarbrough, Sr. Mechanical Engineer, Nuclear Reactor Regulation (NRR)

Approved by: Bradley J. Davis, Chief
Construction Inspection Branch 2
Division of Construction Oversight

SUMMARY OF FINDINGS

Inspection Report (IR) 05200026/2022006; 07/01/2022 through 09/30/2022; Vogtle Unit 4 Combined License, initial test program and operational programs routine integrated inspection report.

This report covers a three-month period of announced Inspections, Tests, Analysis, and Inspection Criteria (ITAAC), preoperational test program, and operational program inspections by resident and regional inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 2519, "Construction Significance Determination Process." Cross Cutting Aspects are determined using IMC 0613, Appendix F, "Construction Cross-Cutting Areas and Aspects." All violations of NRC requirements are dispositioned in accordance with NRC's Enforcement Policy and the temporary enforcement guidance outlined in enforcement guidance memorandum number EGM-11 006. The NRC's program for overseeing the construction of commercial nuclear power reactors is described in IMC 2506, "Construction Reactor Oversight Process General Guidance and Basis Document."

A. NRC-Identified and Self Revealed Findings

(Green) NRC inspectors identified a construction finding of very low safety significance for the licensee's failure to identify the procedures required to be entered and expected operator actions to be performed in the simulator exam guides in accordance with NMP-TR-424-F05, "Annual Simulator Exam Development & Validation." Specifically, 9 out of 25 of the events in four sampled scenario guides used to evaluate licensed operators during the 2022 annual operating test lacked adequate crew/operator performance standards.

The performance deficiency was determined to be more than minor and a finding because it affected the training and qualification attribute of the Operational Readiness Cornerstone (Operational Programs). Specifically, the failure of the licensee to identify in simulator exam guides the required procedures to be entered and operator actions to be performed affected the quality of the 2022 annual operating test administered to all licensed operators and could have impacted the licensee's ability to evaluate the licensed operators. The performance deficiency did not impact an ITAAC, and therefore was determined to be a construction finding. The inspectors determined that the finding was associated with the Operational Readiness Cornerstone and assessed the finding in accordance with IMC 2519, "Construction Significance Determination Process," Appendix A, "AP-1000 Construction Significance Determination Process." Using the flowchart in Appendix A, since the finding was related to the licensed operator requalification (LOR) program, and the program was already required to be implemented, the finding was further assessed using the Reactor Oversight Process IMC 0609, "Significance Determination Process," (SDP) Appendix I, "Licensed Operator Requalification Significance Determination Process," Figure I.1, "Licensed Operator Requalification SDP Flowchart." The finding was related to the quality of the annual operating test but did not include greater than 40% of the reviewed simulator scenario events that were flawed; therefore, the inspectors determined that the finding was of very low safety significance (Green). The inspectors determined this finding was indicative of current licensee performance and was associated with the cross-cutting aspect of procedure adherence, in the area of human performance in accordance with IMC 0613, Appendix F, "Construction Cross-Cutting Areas and Aspects." The proximate cause was attributed to the failure to follow processes, procedures, and work instructions. [H.8] (Section 3P01)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Construction Status

During this report period for Unit 4, the licensee completed open vessel testing activities which included flowing water from the core makeup tanks, accumulators, in-containment refueling water storage tank (IRWST), and containment sump to the reactor vessel to verify the measured line resistance values were within calculated design ranges. Additionally, various modes of the residual heat removal and chemical and volume control systems (CVS) were tested to verify if the installed configuration and design assumptions were within appropriate ranges. Calibration and component testing of instrumentation and valves were performed to support the testing of the above systems.

1. CONSTRUCTION REACTOR SAFETY

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

IMC 2503, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) - Related Work Inspections

1A01 (Unit 4) ITAAC Number 2.1.03.07.i (78) / Family 05D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.1.03.07.i (78). The inspectors used the following NRC Inspection Procedures (IPs)/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if pre-hot functional testing visual inspections of the reactor vessel comprehensive vibration assessment examination program verified that the reactor internals would be able to withstand the effects of flow induced vibration. The inspectors observed the pre-hot functional testing visual inspections to verify if they satisfied the quality and technical requirements of the Updated Final Safety Analysis Report (UFSAR) and the ITAAC.

- 4-RXS-ITPP-501, Pre- and Post-Hot Functional Test Inspection of Reactor Vessel Internals, Rev. 1

b. Findings

No findings were identified.

1A02 (Unit 4) ITAAC Number 2.2.01.07.i (107) / Family 11D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.01.07.i (107). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to review the licensee's test results of the following procedure used to verify if the leak rate from containment for the integrated leak rate test was less than the maximum allowable leakage rate, L_a . The test results were reviewed to determine whether they contained sufficient information to meet the technical and quality requirements of the UFSAR and ITAAC.

- 4-CNS-ITPP-501, Containment Integrated Leak Rate Test (Type A), Version 1.0

b. Findings

No findings were identified.

1A03 (Unit 4) ITAAC Number 2.2.03.08c.i.01 (177) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.i.01 (177). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used the appropriate portions of the IP to observe the licensee's performance of the following procedure to verify if the injection lines flow resistance between the CMTs and the reactor vessel were within the analyzed values. The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PXS-ITPP-506, PXS CMT Mapping and Line Resistance Test, Version 1.1

b. Findings

No findings were identified.

1A04 (Unit 4) ITAAC Number 2.2.03.08c.i.02 (178) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.i.02 (178). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.03-Test Results Review

The inspectors used appropriate portions of the IP to review the results of the following procedure used to verify if the injection lines flow resistance between the accumulators and reactor vessel were within the analyzed values. The results were reviewed to verify whether the test satisfied the applicable technical and quality requirements of the UFSAR and the ITAAC.

- 4-PXS-ITPP-502, PXS Accumulator Mapping and Line Resistance Test, Ver. 1

b. Findings

No findings were identified.

1A05 (Unit 4) ITAAC Number 2.2.03.08c.i.04 (180) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of construction activities associated with ITAAC Number 2.2.03.08c.i.04 (180). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.02-Test Witnessing

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure used to verify if the injection line flow resistance for the containment recirculation lines between the containment and the reactor vessel was within the analyzed values. The test was observed to verify if the test satisfied the applicable quality and technical requirements of the UFSAR and the ITAAC.

- 4-PXS-ITPP-507, IRWST Flow Tests, Ver. 1.0

b. Findings

No findings were identified.

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

1P01 Pre-operational Testing

- 70702-02.04 - Test Witnessing

a. Inspection Scope

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedures for performing channel calibrations for passive core cooling system (PXS) level transmitters. The tests were observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR.

- B-GEN-ITPCI-019-327, PMS Channel Calibration Test for 4-PXS-LT011A and 4-PXS-LT011C, Version 1.0
- B-GEN-ITPCI-019-330, PMS Channel Calibration Test for 4-PXS-LT012B and 4-PXS-LT012D, Version 1.0
- B-GEN-ITPCI-019-332, PMS Channel Calibration Test for 4-PXS-LT013B and 4-PXS-LT013D, Version 1.0
- B-GEN-ITPCI-019-334, PMS Channel Calibration Test for 4-PXS-LT014B and 4-PXS-LT014D, Version 1.0
- B-GEN-ITPCI-019-336, PMS Channel Calibration Test for 4-PXS-LT047, Version 1.0
- B-GEN-ITPCI-019-337, PMS Channel Calibration Test for 4-PXS-LT048, Version 1.0

b. Findings

No findings were identified.

1P02 Pre-operational Testing

- 70702-02.04 - Test Witnessing

a. Inspection Scope

The inspectors used appropriate portions of the IP to observe the licensee's performance of the following procedure for performing the channel calibration for reactor coolant system (RCS) level transmitter. The test was observed to verify if they satisfied the applicable quality and technical requirements of the UFSAR.

- B-GEN-ITPCI-019-358, PMS Channel Calibration Test for 4-RCS-LT160B, Version 1.0

b. Findings

No findings were identified.

3. OPERATIONAL READINESS

Cornerstones: Operational Programs

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

3P01 Reactor Operator Re-qualification

- 71111.11 - Licensed Operator Requalification Program and Licensed Operator Performance

a. Inspection Scope

The inspectors completed an inspection of the licensee's ability to evaluate the performance of their licensed operators during the conduct of examinations, to assess their ability to properly develop and administer requalification annual operating tests and biennial written examinations, to evaluate the performance of the control room simulator and their testing and maintenance of the simulator, to ensure that licensed individuals satisfy the conditions of their licenses, and to assess their effectiveness in ensuring that operator license conditions are satisfied in accordance with 10 CFR 55.59. The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered in 2021. The inspectors evaluated the adequacy of the facility licensee's annual requalification operating tests administered in 2022. The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee was effectively evaluating their licensed operators for mastery of training objectives. The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination was not compromised. The inspectors evaluated the effectiveness of remedial training conducted by the licensee and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination. The inspectors evaluated the licensee's program for ensuring that licensed operators met the conditions of their licenses. The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

b. Findings

Introduction

NRC inspectors identified a construction finding of very low safety significance (Green) for the licensee's failure to identify the procedures required to be entered and expected operator actions to be performed in the simulator exam guides in accordance with NMP-TR-424-F05, "Annual Simulator Exam Development & Validation." Specifically, 9 out of 25 of the events in four sampled scenario guides used to evaluate licensed operators during the 2022 annual operating test lacked adequate crew/operator performance standards.

Description

On July 18, 2022, in accordance with IP 71111.11, "Licensed Operator Requalification Program and Licensed Operator Performance," Appendix C, "Annual Requalification Operating Test Quality Checklist," the inspectors reviewed the required sample of four

scenario guides. Specifically, the inspectors reviewed Week 5 scenario guides ES-44, -45, and -46, and Week 3 scenario guide ES-039. The inspectors determined 9 out of 25 (~36%) events in these scenario guides were missing either the required procedure(s) to be entered and/or key expected operator actions.

Procedure NMP-TR-424-F05, Annual Simulator Exam Development & Validation, Attachment 2, Simulator Scenario Development Checklist requires, in part, that: “Simulator Exam Guides SHALL include, but not be limited to, the following:

- Expected Operator actions for normal, off-normal, and alarm response procedures, Technical Specifications [and]
- Each normal, abnormal, emergency, or alarm procedure expected to be used SHALL be identified and the key Operator actions expected based upon the scenario design and Management Expectations as a basis for evaluation....”

The licensee entered this issue into its corrective action program (CAP) as condition report (CR) 50148048.

Analysis

The inspectors determined that the licensee’s failure to identify the procedures required to be entered and expected operator actions to be performed in the scenario guides was a performance deficiency. In accordance with IMC 0613, “Power Reactor Construction Inspection Reports,” Appendix E, “Examples of Minor Construction Issues,” the inspectors determined that the performance deficiency was more than minor and a finding because it affected the training and qualification attribute of the Operational Readiness Cornerstone (Operational Programs). Specifically, the failure of the licensee to identify in simulator exam guides the required procedures to be entered and operator actions to be performed affected the quality of the 2022 annual operating test administered to all licensed operators and could have impacted the licensee’s ability to evaluate the licensed operators. The performance deficiency did not impact an ITAAC, and therefore was determined to be a construction finding.

The inspectors determined that the finding was associated with the Operational Readiness Cornerstone and assessed the finding in accordance with IMC 2519, “Construction Significance Determination Process,” Appendix A, “AP-1000 Construction Significance Determination Process.” Using the flowchart in Appendix A, since the finding was related to the LOR program, and the program was already required to be implemented, the finding was further assessed using the Reactor Oversight Process IMC 0609, “Significance Determination Process,” Appendix I, “Licensed Operator Requalification Program Significance Determination Process,” Figure I.1, “Licensed Operator Requalification SDP Flowchart.” The finding was related to the quality of the annual operating test but did not include greater than 40% of the reviewed simulator scenario events that were flawed; therefore, the inspectors determined that the finding was of very low safety significance (Green).

The inspectors determined this finding was indicative of current licensee performance and was associated with the cross-cutting aspect of procedure adherence, in the area of human performance in accordance with IMC 0613, Appendix F, “Construction Cross-

Cutting Areas and Aspects.” The proximate cause was attributed to the failure to follow processes, procedures, and work instructions. [H.8]

Enforcement

10 CFR 55.59, "Requalification," requires in part, that the requalification program must include an annual operating test which will require the licensed operator or senior operator to demonstrate an understanding of, and the ability to perform, the actions necessary to safely mitigate a sample of abnormal and emergency conditions in the approved training simulator environment. However, the regulation does not specify a requirement for the quality of examen material used for the simulator scenario portions of the annual operating tests administered to licensed operators and senior operators. Therefore, inspectors did not identify a violation of regulatory requirements associated with this finding. The licensee entered this issue into the CAP as CR 50148048. Because this finding does not involve a violation of regulatory requirements and has a very low safety significance, it is identified as a FIN. (FIN 0500026/2022006-01, NRC Annual Operating Test Scenarios Did Not Meet Qualitative Standards)

3P02 Motor-Operated Valves

a. Inspection Scope

The inspectors performed the following activities related to the development of the in-service test programs for pumps, valves, and dynamic restraints that will perform safety-related functions at Vogtle Units 3 & 4:

- The inspectors reviewed the MOV program and supporting documents for Vogtle Units 3 & 4. In addition to the main MOV program document, the inspectors reviewed MOV documents describing the regulatory scoping process, design-basis setpoint determination, performance trending and margin management, database control and design data datasheet activities, diagnostic testing procedure, and program implementation checklist. The inspectors also reviewed documents describing the self-assessment process, equipment reliability process, scoping and importance determination for equipment reliability, preventive maintenance implementation and continuing equipment reliability improvement, engineering program health reports, development and control of procedures, general engineering guidance, and regulatory scope and program plan. In addition, the inspectors reviewed Technical Evaluation Quality Record 600002643, "COMTA 1709," for determination of the test frequency for verification of MOV capability to meet its design-basis functional requirements.

b. Findings

No findings were identified.

3P03 Preservice Testing

a. Inspection Scope

The inspectors performed the following activities related to the development of the in-service test programs for pumps, valves, and dynamic restraints that will perform safety-related functions at Vogtle Units 3 & 4:

- The inspectors reviewed the MOV program and supporting documents for Vogtle Units 3 & 4. In addition to the main MOV program document, the inspectors reviewed MOV documents describing the regulatory scoping process, design-basis setpoint determination, performance trending and margin management, database control and design data datasheet activities, diagnostic testing procedure, and program implementation checklist. The inspectors also reviewed documents describing the self-assessment process, equipment reliability process, scoping and importance determination for equipment reliability, preventive maintenance implementation and continuing equipment reliability improvement, engineering program health reports, development and control of procedures, general engineering guidance, and regulatory scope and program plan. In addition, the inspectors reviewed Technical Evaluation Quality Record 600002643, "COMTA 1709," for determination of the test frequency for verification of MOV capability to meet its design-basis functional requirements.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On October 18th, 2022, the inspectors presented the inspection results to Mr. G. Chick, Vogtle 3 & 4 Executive Vice President, and other licensee and contractor staff members. Proprietary information was reviewed during the inspection period but was not included in the inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensees and Contractor Personnel

- A. Nix, NI Manager
- M. Hickox, Test Support Manager
- C. Alexander, Milestone Manager
- S. Boyle, Milestone Manager
- D. Pagan-Diaz, ITP Turnover. Manager
- J. Olsen, NI Supervisor
- W. Garrett, SNC Licensing Supervisor

C. Castell, SNC Licensing Engineer
 N. Patel, SNC Licensing Engineer
 N. Chapman, SNC Licensing Engineer
 J. Weathersby, SNC Licensing Engineer
 C. Main, ITAAC Project Manager
 D. Wade, ITAAC Project Manager
 B. Macioce, Principle Engineer Digital Testing
 R. McKay, ITP Test Engineer
 S. Turner, ITP Test Engineer
 G. Weaver, ITP Test Engineer
 R. Nicoletto, ITP Test Engineer
 W. Pipkins, ITP Test Engineer
 D. Melton, ITP Test Engineer
 R. Espara, ITP Test Engineer
 J. Clark, ITP Test Engineer
 K. Morgan, ITP Test Engineer

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Type</u>	<u>Status</u>	<u>Description</u>
05200025/2022006-01	FIN	Open/Closed	NRC Annual Operating Test Scenarios Did Not Meet Qualitative Standards

LIST OF DOCUMENTS REVIEWED

Section 1A01

4-RXS-ITPP-501, Pre- and Post-Hot Functional Test inspection of Reactor Vessel Internals, Rev. 1.0
 WDI-PJF-1324185-EPP-001, Vogtle Unit 4 AP1000, Reactor Vessel Comprehensive Vibration Assessment Examination (CVAP) Program Plan, Rev. 1
 WDI-SSP-1339, Visual Examination of Reactor Vessel and Internals for Vogtle Units 3 & 4 AP1000 (CVAP), Rev. 1

Work Order 1192570

Section 1A02

2.2.01.07.i-U4-CP-Rev0, CNS Integrated Leak Test, Rev. 0
 4-CNS-ITPP-501, Containment Integrated Leak Rate Test (Type A), Version 1.0, dated November 23, 2021
 APP-CNS-T1-501, Containment System Preoperational Test Specification, Rev. 1
 ND-22-0518, Southern Nuclear Operating Company Vogtle Electric Generating Plant Unit 4 ITTAC Closure Notification on Completion of ITAAC 2.2.01.07.i [Index Number 107], dated July 14, 2022
 SV4-CNS-ITR-800107, Unit 4 Recorded Results of Containment Integrated Leak Rate Test: ITAAC 2.2.01.07.i, NRC Index Number: 107, Rev. 0
 VOG4.21-L211221A RO, Vogtle Plant Unit 4 Structural Integrity Test Instrument Certification of Conformance, dated December 21, 2021

VOG4ILRT.21-R220208A R0, Vogtle Unit 4 2021 ILRT Final Test Report, ILRT Inc., dated February 8, 2022

Section 1A03

Procedure:

4-PXS-ITPP-506, PXS CMT Mapping and Line Resistance Test, Version 1.1

Work Order

1191263

Section 1A04

Procedures

4-PXS-ITPP-502, PXS Accumulator Mapping and Line Resistance Test, Ver. 1

Calculations

SV4-PXS-T2C-004, Vogtle Unit 4 4-PXS-ITPP-502 Sections 4.1 - 4.4 Accumulator Injection Line Flow Resistance Test Calculation, Rev. 0

Engineering Service Requests

50118219

50118226

50127685

50131349

50131355

50130483

Work Order

1191256

Miscellaneous

SV4-PXS-T2R-004, Vogtle Unit 4 4-PXS-ITPP-502 Sections 4.1 - 4.4 Accumulator Injection Line Flow Resistance Test Summary Report, Rev. 0

SV4-PXS-ITR-800178, Unit 4 Recorded Results of PXS Accumulator Injection Line Flow Resistance: ITAAC 2.2.03.08c.i.02, Rev. 0

Section 1A05

WO 1191264

Section 1P01

APP-1130-J2-001, Containment Building Instrument and Device Location Plan EL 107'-2" Areas 1 & 2, Rev. 3

B-GEN-ITPCI-019-327, PMS Channel Calibration Test for 4-PXS-LT011A and 4-PXS-LT011C, Version 1.0

B-GEN-ITPCI-019-330, PMS Channel Calibration Test for 4-PXS-LT012B and 4-PXS-LT012D, Version 1.0

B-GEN-ITPCI-019-332, PMS Channel Calibration Test for 4-PXS-LT013B and 4-PXS-LT013D, Version 1.0

B-GEN-ITPCI-019-334, PMS Channel Calibration Test for 4-PXS-LT014B and 4-PXS-LT014D, Version 1.0

B-GEN-ITPCI-019-336, PMS Channel Calibration Test for 4-PXS-LT047, Version 1.0
B-GEN-ITPCI-019-337, PMS Channel Calibration Test for 4-PXS-LT048, Version 1.0
WO 1191422
WO 1191425
WO 1191427
WO 1191429
WO 1191434
WO 1191435

Section 1P02

B-GEN-ITPCI-019-358, PMS Channel Calibration Test for 4-RCS-LT160B, Version 1.0

Work Order
1192347

3. OPERATIONAL READINESS

Section 3P01

Versions 6 & 7 of the 2021 Biennial Written Exam

Eight 2022 Job Performance Measures (JPMs): JP-009-SIM, JP-028-SIM, JP038-SIM, JP-006-SIM, JP-027-IP, JP-004-IP, JP-007-ADM-RO, JP-002-IP

Four scenario guides: ES-44, -45, -46, and ES-039

Ten remedial training packages: Two 2021 Biennial Written Exam failure packages, Two 2021 JPM failure packages, Five 2022 JPM failure packages, and one 2022 crew scenario failure package

Operations Crew 2 (11 members) LOR attendance records, Regulatory Exam Failures, Watch standing Hours, and NRC Form 398/396 license issuance records

Five reactivations: 55-72969, 55-74744, 55-42005, 55-23836, 55-33258

10 medical records: 55-23150, 55-33258, 55-24374, 55-62331, 55-23941, 55-24181, 55-74786, 55-74777, 55-24194, and 55-24197

10 simulator deficiency reports closed during the previous 12 months

Scenario Based Testing (SBT) Package AP-LT-C-SIM-ES-046, rev 1.0, performed on 05/26/2022

AP-OPS-T-006, Main Turbine Trip Without Reactor Trip

AP-OPS-T-007, Maximum Rate Power Ramp

AP-OPS-T-008, Maximum Size Reactor Coolant System (RCS) Rupture with Loss of Offsite Power

AP-OPS-T-010B, Slow Primary System Depressurization to Saturated Condition

Section 3P02

Corrective Action Documents

Condition Report 10902228 for revision to NMP-ES-038-GL01, 8/19/2022

Technical Evaluations Quality Record 600002643, COMTA 1709, 3/21/2019

Procedures

NMP-AP-001, Development and Control of Southern Nuclear Procedures, Rev. 21.2

NMP-ES-001, Equipment Reliability Process Description, Rev. 11

NMP-ES-005, Scoping and Importance Determination for Equipment Reliability, Rev. 18.2

NMP-ES-006, Preventive Maintenance Implementation and Continuing Equipment Reliability Improvement, Rev. 13

NMP-ES-009-002, Engineering Programs – Heath Reports and Notebooks, Rev. 24.3
NMP-ES-017, Motor-Operated Valve Program, Rev. 11
NMP-ES-017-001, Motor-Operated Valve (MOV) Regulatory Scoping Process, Rev. 7
NMP-ES-017-001-V34, MOV Regulatory Scope and Program Plan, Rev. 1
NMP-ES-017-002, Motor-Operated Valve Design Basis Setpoint Determination, Rev. 7
NMP-ES-017-003, Motor-Operated Valve Performance Trending and Margin Management, Rev.
6
NMP-ES-017-006, Motor-Operated Valve Design Database Control and Design Data Sheet
Activities, Rev. 2
NMP-ES-017-021, MOV Diagnostic Procedure for VOTES Infinity, Rev. 2.4
NMP-ES-038-GL01, General Engineering Guidance, Rev. 17.1
NMP-GM-003, Self-Assessment and Benchmark Procedure, Rev. 33
NMP-GM-003-F19, Focused Area Self-Assessment (FASA) Plan and Report, Rev. 5
Program Implementation Checklist B-GEN-ADM-001-F06, Motor Operated Valve Program, Rev.
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Section 3P03

Corrective Action Documents

Condition Report 10902228 for revision to NMP-ES-038-GL01, 8/19/2022

Technical Evaluations Quality Record 600002643, COMTA 1709, 3/21/2019

Procedures

NMP-AP-001, Development and Control of Southern Nuclear Procedures, Rev. 21.2
NMP-ES-001, Equipment Reliability Process Description, Rev. 11
NMP-ES-005, Scoping and Importance Determination for Equipment Reliability, Rev. 18.2
NMP-ES-006, Preventive Maintenance Implementation and Continuing Equipment Reliability
Improvement, Rev. 13
NMP-ES-009-002, Engineering Programs – Heath Reports and Notebooks, Rev. 24.3
NMP-ES-017, Motor-Operated Valve Program, Rev. 11
NMP-ES-017-001, Motor-Operated Valve (MOV) Regulatory Scoping Process, Rev. 7
NMP-ES-017-001-V34, MOV Regulatory Scope and Program Plan, Rev. 1
NMP-ES-017-002, Motor-Operated Valve Design Basis Setpoint Determination, Rev. 7
NMP-ES-017-003, Motor-Operated Valve Performance Trending and Margin Management, Rev.
6
NMP-ES-017-006, Motor-Operated Valve Design Database Control and Design Data Sheet
Activities, Rev. 2
NMP-ES-017-021, MOV Diagnostic Procedure for VOTES Infinity, Rev. 2.4
NMP-ES-038-GL01, General Engineering Guidance, Rev. 17.1
NMP-GM-003, Self-Assessment and Benchmark Procedure, Rev. 33
NMP-GM-003-F19, Focused Area Self-Assessment (FASA) Plan and Report, Rev. 5
Program Implementation Checklist B-GEN-ADM-001-F06, Motor Operated Valve Program, Rev.
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LIST OF ACRONYMS

10 CFR	Title 10 of the Code of Federal Regulations
CAP	Corrective Action Program
COL	Combined License
CR	Condition Report
CNS	Containment System
CVS	Chemical and Volume Control System
gpm	Gallons per Minute
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IRWST	In-Containment Refueling Water Storage Tank
ITAAC	Inspections, Tests, Analysis, and Inspection Criteria
NCV	Noncited Violation
NRC	Nuclear Regulatory Commission
PMS	Protection and Safety Monitoring System
PXS	Passive Core Cooling System
Rev	Revision
RCS	Reactor Coolant System
RXS	Reactor System
SIT	Structural Integrity Test
SR	Safety-Related
UFSAR	Updated Final Safety Analysis Report

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
78	2.1.03.07.i	7. The reactor internals will withstand the effects of flow induced vibration. 10. The reactor lower internals assembly is equipped with holders for at least eight capsules for storing material surveillance specimens.	i) Not used per Amendment No. 150. ii) A pre-test inspection, a flow test and a post-test inspection will be conducted on the as-built reactor internals. Inspection of the reactor lower internals assembly for the presence of capsules will be performed.	i) Not used per Amendment No. 150. ii) The as-built reactor internals have no observable damage or loose parts. At least eight capsules are in the reactor lower internals assembly.
107	2.2.01.07.i	7. The CNS provides the safety-related function of containment isolation for containment boundary integrity and provides a barrier against the release of fission products to the atmosphere.	i) A containment integrated leak rate test will be performed.	i) The leakage rate from containment for the integrated leak rate test is less than La.
177	2.2.03.08c.i.01	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	i) A low-pressure injection test and analysis for each CMT, each accumulator, each IRWST injection line, and each containment recirculation line will be conducted. Each test is initiated by opening isolation valve(s) in the line being tested. Test fixtures may be used to simulate squib valves. 1. CMTs: Each CMT will be initially filled with water. All valves in these lines will be open during the test.	i) The injection line flow resistance from each source is as follows: 1. CMTs: The calculated flow resistance between each CMT and the reactor vessel is $\geq 1.81 \times 10^{-5}$ ft/gpm ² and $\leq 2.25 \times 10^{-5}$ ft/gpm ² .

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
178	2.2.03.08c.i.02	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	i) A low-pressure injection test and analysis for each CMT, each accumulator, each IRWST injection line, and each containment recirculation line will be conducted. Each test is initiated by opening isolation valve(s) in the line being tested. Test fixtures may be used to simulate squib valves. 2. Accumulators: Each accumulator will be partially filled with water and pressurized with nitrogen. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves.	i) The injection line flow resistance from each source is as follows: 2. Accumulators: The calculated flow resistance between each accumulator and the reactor vessel is $\geq 1.47 \times 10^{-5}$ ft/gpm ² and $\leq 1.83 \times 10^{-5}$ ft/gpm ² .
180	2.2.03.08c.i.04	8.c) The PXS provides RCS makeup, boration, and safety injection during design basis events.	i) A low-pressure injection test and analysis for each CMT, each accumulator, each IRWST injection line, and each containment recirculation line will be conducted. Each test is initiated by opening isolation valve(s) in the line being tested. Test fixtures may be used to simulate squib valves. 4. Containment Recirculation: A temporary water supply will be connected to the recirculation lines. All valves in these lines will be open during the test. Sufficient flow will be provided to open the check valves.	i) The injection line flow resistance from each source is as follows: 4. Containment Recirculation: The calculated flow resistance for each containment recirculation line between the containment and the reactor vessel is: Line A: $\leq 1.33 \times 10^{-5}$ ft/gpm ² and Line B: $\leq 1.21 \times 10^{-5}$ ft/gpm ² .