



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

April 23, 2020

Mr. Michael Yox
Regulatory Affairs Director
Southern Nuclear Operating Company
7825 River Road, Bldg. 302, Vogtle 3&4
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INITIAL
TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED
INSPECTION REPORTS 05200025/2020007, 05200026/2020007

Dear Mr. Yox:

On March 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant, Units 3 and 4. The enclosed inspection report documents the inspection results, which the inspectors discussed on April 16, 2020 with Mr. M. Meier, SNC Vice President of Regulatory Affairs, and other members of your staff.

The inspection examined a sample of testing and operational program 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.

No findings or violations of more than minor significance were identified during this inspection.

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

Sincerely,

/RA/

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

Docket Nos.: 05200025, 05200026

License Nos: NPF-91, NPF-92

Enclosure:

NRC Inspection Report (IR) 05200025/2020007,
05200026/2020007

w/attachment: Supplemental Information

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 3 AND 4 – NRC INITIAL TEST PROGRAM AND OPERATIONAL PROGRAMS INTEGRATED INSPECTION REPORTS 05200025/2020007, 05200026/2020007 DATED: APRIL 23, 2020

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DATE	4/20/2020	4/17/2020	4/20/2020	4/21/2020	4/20/2020	4/20/2020	4/21/2020	4/21/2020

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DATE	4/20/2020	4/20/2020	4/21/2020	4/20/2020	4/21/2020	4/20/2020	4/20/2020	4/21/2020	4/23/2020

OFFICIAL RECORD COPY

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

Docket Numbers: 5200025
5200026

License Numbers: NPF-91
NPF-92

Report Numbers: 05200025/2020007
05200026/2020007

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Units 3 & 4 Combined License

Location: Waynesboro, GA

Inspection Dates: January 1, 2020 through March 31, 2020

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

SUMMARY OF FINDINGS

Inspection Report (IR) 05200025/2020007, 05200026/2020007; 01/01/2020 through 03/31/2020; Vogtle Unit 3 Combined License, Vogtle Unit 4 Combined License, initial test program and operational programs integrated inspection report.

This report covers a three-month period of inspection by resident and regional inspectors, and announced Inspections, Tests, Analysis, and Inspection Criteria (ITAAC) inspections. The Nuclear Regulatory Commission's (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

None

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Testing Status

During this report period in Unit 3, the licensee continued open vessel testing activities associated with component testing and preoperational testing of chemical and volume control system, normal residual heat removal system, spent fuel pool system, and passive core cooling system. Testing of protection and monitoring system (PMS) cabinets included initial energization and software loading. The Class IE battery system testing included energized and deenergized component tests. Calibrations and interface testing were performed for safety-related and nonsafety-related level transmitters, flow transmitters, pressure transmitters, temperature elements, air operated valves, and motor operated valves.

1. CONSTRUCTION REACTOR SAFETY

Cornerstones: Inspection/Testing

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

1A01 (Unit 3) ITAAC Number 2.1.02.11a.ii (47) / Family 10C

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.1.02.11a.ii (47). The inspectors used the following NRC inspection procedures (IPs)/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews

The inspectors reviewed B-GEN-ITPCI-039 to determine if the procedure and its associated sub-procedures were written in accordance with the licensee's administrative procedure and procedure writer's guide and contained sufficient information to demonstrate the ITAAC acceptance criteria. Specifically, the inspectors reviewed the procedure and sub-procedures to determine if the following attributes were met:

- appropriate licensee staff and approval authority were indicated on the document;
- test objectives were clearly stated;
- test precautions and limitations were specified;
- reference source for test acceptance criteria was identified;
- required testing prerequisites were identified, including:
 - availability of required plant systems needed to support test;
 - prior completion of calibration checks, limit switch setting, and protective device settings, where applicable; and
 - special supplies and test equipment needs.
- procedures included blank spaces for initialing that all items, including prerequisites, are verified as having been performed;
- initial test conditions were specified;

- all related Vogtle Electric Generating Plant (VEGP) Updated Final Safety Analysis Report (UFSAR) commitments were included and latest codes and standards were referenced where applicable;
- step-by-step instructions for the performance of the procedure, including hold points if needed, were included to the extent necessary to ensure that the test will be performed correctly, and test objectives met;
- test requirements and acceptance criteria were specified in accordance with applicable design, including acceptance criteria that specifies the active function the remotely operated valves perform after receiving a signal from the PMS;
- expected performance of all automatic functions or controls was specified;
- roles of personnel conducting the testing and those evaluating the test data were identified;
- provisions were made for quality control, quality assurance, engineering, or other specified individual verification of critical steps or test parameters;
- provisions were made for verification of calibration of measuring and test equipment (M&TE) including, recording the use of any temporarily installed or used M&TE, equipment identification number, and calibration dates;
- procedures included and referenced acceptable testing configurations and objectives;
- procedures required comparison and evaluation of test results against test acceptance criteria;
- provision was made for the evaluator to document acceptability of the data; and
- provisions were made for proper restoration of equipment to a normal or alternate configuration as controlled by a referenced process or procedure.

b. Findings

No findings were identified.

1A02 (Unit 3) ITAAC Number 2.5.02.06a.ii (530) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.06a.ii (530). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews

The inspectors reviewed SV3-GW-GCW-300 and its attachments related to conducting, verifying, and confirming adequate software installation of the PMS system to determine if the Field Change Notice (FCN) verified the ITAAC acceptance criteria. Specifically, the inspectors reviewed the FCN to determine if the specific following attributes were met:

- appropriate licensee staff and management approval was indicated on the document;
- test objectives were clearly stated;

- the FCN and attachments provided for trained personnel conducting and evaluating the test data;
- software configuration management key attributes were specified, as committed to in the licensing basis;
- step-by-step instructions for the performance of the procedure were included to the extent necessary to ensure that test objectives were met;
- provisions were made within the document, work instructions, or associated attachments for initialing that all items, including prerequisites, were verified as having been performed;
- provisions were made for recording details of the conduct of the test, including all test anomalies or deficiencies and their resolution; and
- provisions were made for quality control verification (or independent verification) of critical steps or parameters as required by the licensees administrative or quality assurance program requirements.

b. Findings

No findings were identified.

1A03 (Unit 3) ITAAC Number 2.5.02.08a.ii (540) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.08a.ii (540). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews
- 65001.C-02.03 - Construction Test Record Review
- 65001.C-A4 - Appendix 4 - Construction Test Inspection for Electrical/I&C Systems and Components

Procedure review

The inspectors reviewed APP-PMS-T1P-010 to determine if the procedure met the requirements of APP-PMS-T5-001 and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the procedure to determine if the following attributes were met:

- appropriate licensee staff review and management approval were indicated on the document;
- procedure provided for appropriate test prerequisites and suitable environmental conditions, instrumentation, tests and equipment, and necessary monitoring;
- test requirements and acceptance criteria were in accordance with applicable design documents and construction specifications;
- the procedure required comparison of the test results to the acceptance criteria and a provision was made for the evaluator to indicate whether test data is or is not acceptable;
- initial test conditions were specified;
- step-by-step instructions for the performance of the procedure were included to the extent necessary to ensure that test objectives were met;

- provision was made for recording details of the conduct of the test, including any observed deficiencies, their resolution, and any necessary retesting;
- procedure required trained personnel conducting and evaluating the test data;
- test equipment range and accuracy were consistent with the application and complied with applicable licensing basis design calculations or code requirements;
- provisions were made for quality control verification (or independent verification) of critical steps or parameters as required by administrative or quality assurance program requirements;
- expected performance of all automatic functions or controls was specified;
- provisions were made for verification of calibration of M&TE and recording of any temporarily installed or used M&TE, equipment identification, and calibration date; and
- equipment was properly restored upon test completion, including removal of installed jumpers and test equipment, and landing of lifted leads.

Test Results Review

The inspectors also reviewed the factory acceptance test (FAT) report APP-PMS-T2R-010 to determine that the channel was tested in accordance with APP-PMS-T1P-010, VEGP UFSAR Chapter 7, and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the test results to determine if the following attributes were met:

- testing activities were performed in accordance with the test procedure and the test records were accurate and complete;
- test records were adequate to furnish identifiable and retrievable evidence of activities affecting quality; and
- corrective actions associated with identified unacceptable results were consistent with applicable quality and technical requirements.

The inspectors reviewed and compared the FAT procedure acceptance criteria and testing results against the ITAAC acceptance criteria to verify that they were clearly identified, and the acceptance criteria were met. Specifically, the acceptance criteria reviewed were:

- designated plant parameters are used to generate visual alerts that identify challenges to critical safety functions; and
- visual alerts actuate in accordance with their correct logic and values.

The inspectors sampled the following plant parameters:

- neutron flux;
- startup rate;
- containment water level;
- containment pressure;
- containment area high-range radiation; and
- passive residual heat removal heat exchanger outlet temp and flow.

b. Findings

No findings were identified.

1A04 (Unit 3) ITAAC Number 2.5.02.08a.ii (540) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.08a.ii (540). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews

The inspectors reviewed SV3-GW-GCW-300 and its attachments related to conducting, verifying, and confirming adequate software installation of the PMS system to determine if the FCN verified the ITAAC acceptance criteria. Specifically, the inspectors reviewed the FCN to determine if the specific following attributes were met:

- appropriate licensee staff and management approval was indicated on the document;
- test objectives were clearly stated;
- the FCN and attachments provided for trained personnel conducting and evaluating the test data;
- software configuration management key attributes were specified, as committed to in the licensing basis;
- step-by-step instructions for the performance of the procedure were included to the extent necessary to ensure that test objectives were met;
- provisions were made within the document, work instructions, or associated attachments for initialing that all items, including prerequisites, were verified as having been performed;
- provisions were made for recording details of the conduct of the test, including all test anomalies or deficiencies and their resolution; and
- provisions were made for quality control verification (or independent verification) of critical steps or parameters as required by the licensees administrative or quality assurance program requirements.

b. Findings

No findings were identified.

1A05 (Unit 3) ITAAC Number 2.5.02.08b.ii (543) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.08b.ii (543). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews
- 65001.C-02.03 - Construction Test Record Review
- 65001.C-A4 - Appendix 4 - Construction Test Inspection for Electrical/I&C Systems and Components

The inspectors reviewed APP-PMS-T1P-008 to determine if the procedure contained information to meet the requirements of APP-PMS-T5-001 and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the procedure to determine if the following attributes were met:

- appropriate licensee staff review and management approval were indicated on the document;
- procedure provided for appropriate test prerequisites and suitable environmental conditions, instrumentation, tests and equipment, and necessary monitoring;
- test requirements and acceptance criteria were in accordance with applicable design documents and construction specifications;
- the procedure required comparison of the test results to the acceptance criteria and a provision was made for the evaluator to indicate whether test data is or is not acceptable;
- initial test conditions were specified;
- step-by-step instructions for the performance of the procedure were included to the extent necessary to ensure that test objectives were met;
- provision was made for recording details of the conduct of the test, including any observed deficiencies, their resolution, and any necessary retesting;
- procedure required trained personnel conducting and evaluating the test data;
- test equipment range and accuracy were consistent with the application and complied with applicable licensing basis design calculations or code requirements;
- provisions were made for quality control verification (or independent verification) of critical steps or parameters as required by administrative or quality assurance program requirements;
- expected performance of all automatic functions or controls was specified;
- provisions were made for verification of calibration of measuring and test equipment (M&TE) and recording of any temporarily installed or used M&TE, equipment identification, and calibration date; and
- equipment was properly restored upon test completion, including removal of installed jumpers and test equipment, and landing of lifted leads.

The inspectors also reviewed the FAT report APP-PMS-T2R-008 to determine if the channel was tested in accordance with APP-PMS-T1P-008 and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the test results to determine if the following attributes were met:

- testing activities were performed in accordance with the test procedure and the test records were accurate and complete;
- test records were adequate to furnish identifiable and retrievable evidence of activities affecting quality; and
- corrective actions associated with identified unacceptable results were consistent with applicable quality and technical requirements.

The inspectors reviewed and compared the FAT procedure acceptance criteria and testing results against the ITAAC acceptance criteria to verify if that they were clearly identified, and the acceptance criteria was met. Specifically, the acceptance criteria reviewed were the actuation of each transfer switch results in an alarm in the main control room (MCR) and RSW, the activation of operator control capability from the RSW, and the deactivation of operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.

The inspectors sampled the following actuations:

- containment recirculation;
- in-containment refueling water storage tank injection;
- normal residual heat removal system isolation; and
- core makeup tank actuation.

b. Findings

No findings were identified.

1A06 (Unit 3) ITAAC Number 2.5.02.08b.ii (543) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.08b.ii (543). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews

The inspectors reviewed SV3-GW-GCW-300 and its attachments related to conducting, verifying, and confirming adequate software installation of the PMS system to determine if the FCN verified the ITAAC acceptance criteria. Specifically, the inspectors reviewed the FCN to determine if the specific following attributes were met:

- appropriate licensee staff and management approval was indicated on the document;
- test objectives were clearly stated;
- the FCN and attachments provided for trained personnel conducting and evaluating the test data;
- software configuration management key attributes were specified, as committed to in the licensing basis;
- step-by-step instructions for the performance of the procedure were included to the extent necessary to ensure that test objectives were met;
- provisions were made within the document, work instructions, or associated attachments for initialing that all items, including prerequisites, were verified as having been performed;
- provisions were made for recording details of the conduct of the test, including all test anomalies or deficiencies and their resolution; and
- provisions were made for quality control verification (or independent verification) of critical steps or parameters as required by the licensees administrative or quality assurance program requirements.

b. Findings

No findings were identified.

1A07 (Unit 3) ITAAC Number 2.5.02.09d (548) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.09d (548). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews
- 65001.C-02.03 - Construction Test Record Review
- 65001.C-A4 - Appendix 4 - Construction Test Inspection for Electrical/I&C Systems and Components

The inspectors reviewed APP-PMS-T1P-009 to determine if the procedure contained information to meet the requirements of APP-PMS-T5-001 and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the procedure to determine if the following attributes were met:

- appropriate licensee staff review and management approval were indicated on the document;
- procedure provided for appropriate test prerequisites and suitable environmental conditions, instrumentation, tests and equipment, and necessary monitoring;
- test requirements and acceptance criteria were in accordance with applicable design documents and construction specifications;
- the procedure required comparison of the test results to the acceptance criteria and a provision was made for the evaluator to indicate whether test data is or is not acceptable;
- initial test conditions were specified;
- step-by-step instructions for the performance of the procedure were included to the extent necessary to ensure that test objectives were met;
- provision was made for recording details of the conduct of the test, including any observed deficiencies, their resolution, and any necessary retesting;
- procedure required trained personnel conducting and evaluating the test data;
- test equipment range and accuracy were consistent with the application and complied with applicable licensing basis design calculations or code requirements;
- provisions were made for quality control verification (or independent verification) of critical steps or parameters as required by administrative or quality assurance program requirements;
- expected performance of all automatic functions or controls was specified;
- provisions were made for verification of calibration of M&TE and recording of any temporarily installed or used M&TE, equipment identification, and calibration date; and

- equipment was properly restored upon test completion, including removal of installed jumpers and test equipment, and landing of lifted leads.

The inspectors also reviewed the FAT report APP-PMS-T2R-009 to determine if the channel was tested in accordance with APP-PMS-T1P-009, VEGP UFSAR Chapter 7.6, and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the test results to determine if the following attributes were met:

- testing activities were performed in accordance with the test procedure and the test records were accurate and complete;
- test records were adequate to furnish identifiable and retrievable evidence of activities affecting quality; and
- corrective actions associated with identified unacceptable results were consistent with applicable quality and technical requirements.

The inspectors reviewed and compared the FAT procedure acceptance criterion and testing results against the ITAAC acceptance criteria to verify if they were clearly identified, and the acceptance criterion was met. Specifically, the acceptance criteria reviewed was that the appropriate PMS output signals are generated as the interlock conditions are changes.

The inspectors sampled interlock functions for the following valves:

- normal residual heat removal system suction valves;
- passive residual heat removal system heat exchanger inlet isolation valve; and
- containment vacuum relief isolation valves.

b. Findings

No findings were identified.

1A08 (Unit 3) ITAAC Number 2.5.02.09d (548) / Family 10D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.5.02.09d (548). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.C-02.01 - Program and Procedure Reviews

The inspectors reviewed SV3-GW-GCW-300 and its attachments related to conducting, verifying, and confirming adequate software installation of the PMS system to determine if the FCN satisfied the ITAAC acceptance criteria. Specifically, the inspectors reviewed the FCN to determine if the specific following attributes were met:

- appropriate licensee staff and management approval was indicated on the document;
- test objectives were clearly stated;

- the FCN and attachments provided for trained personnel conducting and evaluating the test data;
- software configuration management key attributes were specified, as committed to in the licensing basis;
- step-by-step instructions for the performance of the procedure were included to the extent necessary to ensure that test objectives were met;
- provisions were made within the document, work instructions, or associated attachments for initialing that all items, including prerequisites, were verified as having been performed;
- provisions were made for recording details of the conduct of the test, including all test anomalies or deficiencies and their resolution; and
- provisions were made for quality control verification (or independent verification) of critical steps or parameters as required by the licensees administrative or quality assurance program requirements.

b. Findings

No findings were identified.

3. OPERATIONAL READINESS

Cornerstones: Operational Programs

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

3T01 (Unit 3) ITAAC Number 2.1.03.07.i (78) / Family 05D

a. Inspection Scope

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

- 65001.D-02.01-Procedure Review
- 65001.D-02.02-Test Witnessing

Procedure Review

The inspectors reviewed 3-RXS-ITPP-501 related to pre- and post-hot functional test inspection of the reactor vessel internals to determine if the procedure contained information to meet the requirements of Section 14.2.9.1.9 of the VEGP UFSAR, NRC Regulatory Guide (RG) 1.20, and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the procedures to determine if the following attributes were met:

- appropriate licensee staff and management approval was indicated on the document;
- test objectives were clearly stated;
- all related VEGP UFSAR commitments were included;
- all required testing prerequisites were identified, including test precautions and limitations;

- test acceptance criteria and the source of each test acceptance criteria were clearly identified;
- the procedure required comparison of results with the test acceptance criteria;
- initial test conditions were specified;
- step-by-step instructions for the performance of the procedure, including hold points if needed, were included to the extent necessary to ensure that the test is performed correctly and the test objectives are met;
- the procedure included blank spaces or initialing that all items, including prerequisites, are verified as having been performed; and
- provisions were made for recording details of the conduct of the test, including all test anomalies.

Test Witness

The inspectors also observed pre-hot functional test visual examinations for a sample of reactor vessel internal components listed within 3-RXS-ITPP-501 to determine if examinations were performed in accordance with Section 14.2.9.1.9 of the VEGP UFSAR, RG 1.20, and the ITAAC acceptance criteria. Specifically, the inspectors observed visual examinations that the contractor performed on the following features:

- outside diameter surfaces of one Quickloc stalk can and associated instrument grid assembly Quickloc upper support flange assembly;
- Quickloc stalk alignment screws and hold down screws; and
- guide tube flange bolts and locking devices.

The inspectors observed these visual examinations to determine if the following attributes were met:

- the current revisions of the procedures were being used at the location of the visual examinations being performed;
- test personnel using the procedures were familiar with the procedural requirements, including the limitations and precautions;
- test personnel minimum staffing requirements were met;
- responsibilities and qualifications of test personnel, as listed in the procedures, were met;
- all test prerequisites and initial conditions were met;
- all M&TE required by the procedure was calibrated at the time of the test;
- test personnel actions and coordination activities were adequately performed; and
- overall test acceptance criteria were clearly defined in the procedures and were adequately satisfied for the samples listed above.

Additionally, the inspectors witnessed the visual examinations to determine if they were performed in accordance with RG. 1.20. Specifically, the licensee verified pre-hot functional test requirements and will also verify post-hot functional test requirements through visual examination (inspection) only. This was acceptable because of License Amendment 151 which approved the licensee's request to classify Sanmen Unit 1 as a prototype for reactor internals, and VEGP Units 3 and 4 as a non-prototype for Category I reactor internals, as defined in RG 1.20.

b. Findings

No findings were identified.

3T02 (Unit 3) ITAAC Number 2.2.01.11a.iii (116) / Family 07D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.2.01.11a.iii (116). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.01-Procedure Review

The inspectors reviewed 3-CCS-ITPP-501, 3-SFS-ITPP-502, and 3-VFS-ITPP-501 to determine if the procedures contained sufficient information to meet the requirements of Chapter 14 of the VEGP UFSAR and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the procedure to determine if the following attributes were met:

- appropriate licensee staff and management approval were indicated on the document;
- test objectives were clearly stated;
- all related UFSAR commitments were included and latest codes and standards were referenced where applicable;
- all required testing prerequisites were identified, including:
 - availability of required plant systems;
 - prior completion of calibration checks, limit switch setting, protective device settings, etc. were included where applicable;
 - special supplies and test equipment needs; and
 - test precautions and limitations.
- test acceptance criteria and source of the acceptance criteria were clearly identified;
- procedures required comparison of results with acceptance criteria;
- initial test conditions were specified, including:
 - valve lineups;
 - electrical power and control requirements;
 - all temporary installations or equipment modifications (instrumentation, electrical, and piping); and
 - all necessary special conditions such as temperatures, pressures, flows, and water chemistry.
- procedures included a section listing references to appropriate ITAAC and other requirements;
- step-by-step instructions for the performance of the procedures, including hold points, were included to the extent necessary to ensure that the tests objectives will be met;
- procedures included blank spaces for initialing that all items, including prerequisites, are verified as having been performed;
- procedures required that all temporary connections, blind flanges, disconnections or jumpers be restored to normal at the end of the test;
- provisions were made for the evaluators to document acceptability of the data;

- provisions were made for quality control, quality assurance, engineering, or other specified individual verification of critical steps or test parameters;
- special precautions for personnel and equipment safety were specified;
- expected performance of all automatic functions or controls was specified; and
- provisions were made for verification of calibration of M&TE and recording of any temporarily installed or used M&TE, equipment identification, and calibration date.

b. Findings

No findings were identified.

3T03 (Unit 3) ITAAC Number 2.2.01.11a.iv (117) / Family 07D

a. Inspection Scope

The inspectors performed a direct inspection of testing activities associated with ITAAC Number 2.2.01.11a.iv (117). The inspectors used the following NRC IPs/sections to perform this inspection:

- 65001.D-02.01-Procedure Review

The inspectors reviewed 3-CAS-ITPP-501, 3-CCS-ITPP-501, 3-DWS-ITPP-501, 3-FPS-ITPP-501, 3-SFS-ITPP-502, 3-VFS-ITPP-501, and 3-VWS-ITPP-501 to determine if the procedures contained information to meet the requirements of Chapter 14 of the VEGP UFSAR and the ITAAC acceptance criteria. Specifically, the inspectors reviewed the procedures to determine if the following attributes were met:

- appropriate licensee staff and management approval were indicated on the document;
- test objectives were clearly stated;
- all related UFSAR commitments were included and latest codes and standards were referenced where applicable;
- all required testing prerequisites were identified, including:
 - availability of required plant systems;
 - prior completion of calibration checks, limit switch setting, protective device settings, etc. were included where applicable;
 - special supplies and test equipment needs; and
 - test precautions and limitations.
- test acceptance criteria and source of the acceptance criteria were clearly identified;
- procedures required comparison of results with acceptance criteria;
- initial test conditions were specified, including:
 - valve lineups;
 - electrical power and control requirements;
 - all temporary installations or equipment modifications (instrumentation, electrical, and piping); and
 - all necessary special conditions e.g. temperatures, pressures, flows, and water chemistry.

- procedures included a section listing references to appropriate ITAAC and other requirements;
- step-by-step instructions for the performance of the procedures, including hold points, were included to the extent necessary to ensure that the test objectives will be met;
- procedures included blank spaces for initialing that all items, including prerequisites, are verified as having been performed;
- procedures required that all temporary connections, blind flanges, disconnections or jumpers be restored to normal at the end of the test;
- provisions were made for the evaluators to document acceptability of the data;
- procedures included provisions provided for quality control, quality assurance, engineering, or other specified individual verification of critical steps or test parameters;
- special precautions for personnel and equipment safety were specified;
- expected performance of all automatic functions or controls was specified; and
- provisions were made for verification of calibration of M&TE and recording of any temporarily installed or used M&TE, equipment identification, and calibration date.

b. Findings

No findings were identified.

3T04 (Unit 3) ITAAC Number 2.2.03.08c.i.02 (178) / Family 06D

a. Inspection Scope

The inspectors performed a direct inspection of testing 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-02.02-Test Witnessing

The inspectors witnessed the performance of 3-PXS-ITPP-502 and reviewed documentation to verify if the tests met the requirements of Section 14.2.9.1.3 of the VEGP UFSAR and the ITAAC acceptance criteria. The inspectors performed observations to determine if the following attributes were met:

- current revisions of the test procedure were used during the test, and personnel were familiar with the procedural requirements;
- test personnel minimum staffing requirements were met;
- responsibilities and qualifications of the test personnel were met;
- all test prerequisites and initial test conditions were met, including partial fill of accumulators with nitrogen;
- all measuring and test equipment required by the procedure was calibrated and in service at the time of the test;
- test data recording equipment required by procedure was calibrated to a common time base;
- test personnel had the required level of training necessary to conduct the test;

- pre-test briefings were conducted, and appropriate shift turnover performed to ensure continuity;
- test engineers properly logged any test anomalies, problems, interruptions, or deficiencies, and documented issues in the corrective action program;
- cognizant test personnel performed a preliminary review of test results to determine that the observed test results met the established test acceptance criteria and that the test did not need to be repeated;
- overall test acceptance criteria were clearly defined in the procedure and adequately satisfied. Specifically, the flow orifices in the accumulator discharge lines were properly sized to achieve flow resistances of $\geq 1.47 \times 10^{-5}$ ft/gpm² and $\leq 1.83 \times 10^{-5}$ ft/gpm² between the accumulator and reactor vessel; and
- following satisfactory test completion, the test flow orifice was replaced with a permanent orifice and re-tested with a nitrogen blanket for final verification.

b. Findings

No findings were identified.

3P01 Emergency Preparedness

- 82002-Att2-02.01 - Emergency action level (EAL) procedures
- 82002-Att2-02.02 - Notification procedures
- 82002-Att2-02.03 - Protective Action Recommendation (PAR) development procedures
- 82002-Att2-02.04 - Emergency Plan Implementing Procedures (EPIPs)
- 82002-Att2-02.05 - Effectiveness of licensee corrective actions
- 82002-Att2-02.06 - EP Operational Readiness

a. Inspection Scope

The inspectors reviewed the EAL procedure and associated wall boards to determine if the EALs were consistent in range, units, and conversion factors. Specifically, the inspectors reviewed procedure NMP-EP-141-004, Vogtle 3 & 4 Emergency Action Levels and Basis, to determine if the following were in accordance with NUREG-0654/FEMA-REP-1, Revision 1:

- the scope of initiating conditions was consistent with the EAL wall boards;
- plant operating modes scope and applicability;
- the methodology to implement the EAL scheme, and descriptions of the event classification levels;
- the radiological units used for their respective initiating conditions; and
- the bases descriptions for the initiating conditions were clear and consistent with the respective action(s) taken.

The inspectors also reviewed the EAL scheme and methodology in NMP-EP-141-004 to verify if the implementation of the EAL scheme was completed in accordance with NEI 99-01, Methodology for Development of EALs, Revision 6.

The inspectors observed the use of the NMP-EP-141-004 procedure, EAL wall boards, and EAL technical basis document during a limited scope emergency drill to determine if the Technical Support Center (TSC) documentation for classifying events was readily available and consistent with the current version of these documents.

The inspectors reviewed the licensee's implementing procedures for notifications to offsite response organizations to determine whether these authorities will be notified accurately and promptly following the declaration of an emergency condition. Specifically, the inspectors reviewed the site-specific emergency plan (E-Plan), Standard Emergency Plan Annex for Vogtle Electric Generating Plant Units 3 and 4, and procedure NMP-EP-142, Emergency Notification, to determine if the following were completed in accordance with NUREG-0654/FEMA-REP-1, Revision 1:

- the procedures specified a 15-minute notification requirement after classification of an emergency condition;
- the procedures specified the NRC was notified of an emergency condition as soon as possible but not more than 60 minutes (10 Code of Federal Regulations (CFR) 50.72(a)(3));
- the content of initial and follow-up emergency messages to offsite authorities was adequate regarding data and information requirements; and
- associated forms to document the notifications were clear, allowed for accurate and concise documentation of event information, and included:
 - classification of the emergency;
 - emergency action level upon which the emergency declaration is based on;
 - a brief description of the plant conditions supporting the classification;
 - the status of any offsite release of radioactive material;
 - meteorological conditions at the release point;
 - offsite protective action recommendations or whether no such recommendations are required;
 - provision for message verification; and
 - consistency with the emergency classification and action level scheme.

The inspectors also observed the use of NMP-EP-142, NMP-EP-142-F01, and NMP-EP-142-F02 during the limited scope emergency drill to determine whether current notification procedures were available in the TSC and were usable by the personnel.

The inspectors reviewed the licensee's implementing procedures for PARs to determine if the methodology allowed the plant staff to make appropriate recommendations for the respective plant conditions during an event. Specifically, the inspectors reviewed the Standard Emergency Plan, the site-specific Standard Emergency Plan Annex for VEGP, Units 3 and 4, and NMP-EP-144, Protective Actions, to determine if the following were in accordance with NUREG-0654/FEMA-REP-1:

- consistency between the E-Plans and PAR implementing procedure scope and methodology;
- responsibility (shift manager in the control room, emergency director in the emergency operations facility, etc.) for PAR recommendations during an event is clearly defined for the plant conditions;
- the scope of the methodology includes various plant conditions;

- procedures describe a process for onsite personnel evacuation;
- the procedures describe a range of actions consistent with NUREG-0654/FEMA-REP1; and
- the PAR methodology provides a process for input from radiological assessment.

The inspectors also observed the use of NMP-EP-144 during the limited scope emergency drill to verify if a usable and current PAR procedure was available in the TSC.

The inspectors reviewed the EIPs and supplemental procedures to determine if the procedures were of sufficient detail and scope to implement the EP program. Specifically, the inspectors reviewed the following to determine if the implementing procedures were in accordance with 10 CFR 50.47(b):

- the accident assessment procedures described performance criteria methods, systems, and equipment available for use during an actual radiological event;
- all relevant EIPs were listed in the site-specific Standard Emergency Plan Annex for VEGP, Units 3 and 4; and
- the procedures were able to be used by the ERO to activate the facilities, make classifications, notifications, PARs, and conduct accident assessments.

In addition, the inspectors observed a limited scope drill, to determine if the correct versions of the accident assessment procedures were available and used in the TSC. The inspectors reviewed the licensee's corrective actions associated with emergency preparedness issues entered into the corrective action program to determine whether actions taken to address the issues were effective. Specifically, the inspectors reviewed eight corrective actions for the following to determine if the actions were in accordance with procedures:

- immediate, or short-term, corrective actions;
- corrective actions taken were commensurate with the significance of the associated conditions; and
- scope of the condition reports (CRs), with samples that included:
 - minor editorial changes to the individual site-specific procedures;
 - corporate level procedures;
 - issues concerning incorrect meteorological evaluation tower locations; and
 - clarifications to event classifications involving procedure enhancements.

The inspectors reviewed E-Plan and all EAL change packages to determine if any changes resulted in a reduction in effectiveness (RIE). Specifically, the inspectors reviewed all screening and evaluation changes to determine if the following were completed in accordance with site procedures and 10 CFR 50.54(q):

- administrative changes (correcting typographical errors or other information other than EAL content) were categorized and screened appropriately; and
- the documentation used to support the change determination was justifiable and appropriate.

IP 71114.04, Emergency Action Level and Emergency Plan Changes, was used as additional guidance to inform the use of the attachments of IP 82002, Part 52 Emergency Preparedness Program. The review of the licensee's changes to their E-Plan, EALs, and EIPs is an ongoing process, will continue during future emergency preparedness (EP) operational readiness inspections, and therefore should not constitute NRC approval of the reviewed changes.

b. Findings

No findings were identified.

3P02 Environmental Qualification

- 51080-02.03 - Inspection Tasks

a. Inspection Scope

The inspectors reviewed the qualification records for solenoid operated globe valves (commodity code PV13) to verify if the components were qualified in accordance with the UFSAR, IEEE 323-1974, IEEE 344-1987, and IEEE 382-1996. The inspectors reviewed the equipment qualification data package (EQDP) and equipment qualification summary report (EQSR) to verify if the qualification methodology was in accordance with the methodology in APP-GW-G1-002 and APP-GW-VP-010. Specifically, the inspectors reviewed the test sequence to verify if followed the test sequence outlined in IEEE 323-1974, Section 6.3.2 and IEEE 382-1996, Section 6.3.2.

The inspectors reviewed the test plan for seismic and harsh environment qualification to determine if the test plan properly incorporated the design basis requirements. Specifically, the inspectors reviewed the test conditions specified in the qualification plan, results, EQDP and EQSR to determine if they met the requirements specified in the design specification, valve data sheets, and Section 5.4 and Section 3 of the FSAR.

For seismic qualification, the inspectors reviewed the plan to determine if the following parameters met Chapter 3 of the FSAR, the design basis, IEEE 344, IEEE 382 and APP-1000-S2C-056:

- vibration aging
- resonance search
- operating basis earthquake testing
- seismic test profile

For harsh environment, the inspectors reviewed the plan to determine if it established the following parameters in accordance with the design basis, APP-GW-VP-030, and IEEE 323 for normal, abnormal and design basis conditions:

- temperature
- pressure
- radiation
- humidity

- cycle aging
- external pressurization
- thermal aging

The inspectors reviewed the qualification results in the qualification report to verify if the test was conducted in accordance with the qualification plan and if the results from qualification testing met the acceptance criteria in IEEE 323, IEEE 344, IEEE 382 or a functional test specified by the qualification plan. In addition, the inspectors reviewed the margin applied to the above parameters to determine if the margin met that required by IEEE 323-1974, Section 6.3.1.5.

The inspectors reviewed the EQDP to determine if the valve specimens tested were similar to the reactor head vent valves, RCS-PL-V150A, RCS-PL-V150B, RCS-PL-V150C, and RCS-PL-V150D. The inspectors reviewed test anomalies listed in the EQDP and EQSR for APP-PV13-Z0D-101 to verify if they were dispositioned to an engineering analysis, installation instruction, additional testing, or were acceptable to use as is.

Finally, the inspectors reviewed qualification document acceptance by the licensee to determine if the EQ task force acceptance was performed in accordance with the licensee procedure. The inspectors reviewed EQTF-PV13-VBR-012 to determine if it concluded if the ITAAC requirements were met in accordance with ND-EN-VNP-006. In addition, the inspectors reviewed the document package to determine if the EQDP and EQSR met the documentation requirements in IEEE 323-1974, Section 8 and IEEE 344-1987, Section 10.

b. Findings

No findings were identified.

3P03 Maintenance Rule

- 62712-02.01 - General Guidance
- 62712-02.02 - Review the licensee's MR scoping procedure and independently verify that the structures, systems, and components (SSCs) within the scope of the MR program include safety-related SSCs and certain nonsafety-related SSCs.
- 62712-02.03 - Evaluate Licensee's Plan for Monitoring and Corrective Action per 10 CFR 50.65(a)(1)
- 62712-02.04 - Evaluate Licensee's Plan for Preventive Maintenance per 10 CFR 50.65(a)(2)
- 62712-02.05 - Review Licensee's Plan for Periodic Evaluation of Monitoring and Preventive Maintenance per 10 CFR 50.65(a)(3)
- 62712-02.06 - Evaluate Licensee's Plan for Risk Assessment and Risk Management per 10 CFR 50.65(a)(4)
- 62712-02.07 - Evaluate the Licensee's MR Training and Qualification Program
- 62712-02.08 - Evaluate the Licensee's Program for Incorporating Operating Experience

a. Inspection Scope

The inspectors reviewed the licensee's Maintenance Rule (MR) program to determine if reasonable assurance existed at the time of the inspection to verify if the program will meet the requirements of 10 CFR 50.65, Requirements for monitoring the effectiveness of maintenance at nuclear power plants, once fully implemented after the 10 CFR 52.103(g) finding. The inspectors reviewed procedures, MR scoping documents, Maintenance Rule Expert Panel (MREP) meeting minutes, training and qualification records, and interviewed personnel to determine if the requirements of 10 CFR 50.65; UFSAR Section 17.6, Maintenance Rule Program; and NUMARC 93-01, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, were incorporated into the MR program.

The inspectors reviewed the licensee's procedure for the MR program and supplemental procedures to determine if they were of sufficient detail and scope to implement the MR program in accordance with 10 CFR 50.65, UFSAR Section 17.6, and NUMARC 93-01. Specifically, the inspectors reviewed procedures to determine if they required that:

- SSCs within the scope of the MR program be evaluated against performance criteria to determine which SSCs will have goals established and monitoring activities performed in accordance with 10 CFR 50.65(a)(1) and NUMARC 93-01;
- SSC performance be managed in accordance with 10 CFR 50.65(a)(2)
- periodic evaluation of the performance and condition monitoring activities and associated goals and preventive maintenance activities be performed in accordance with 10 CFR 50.65(a)(3);
- the MR program includes maintenance risk assessment and management in accordance with 10 CFR 50.65(a)(4) and the methods described in NUMARC 93-01;
- safety significance classifications and bases of in-scope SSCs be determined using processes consistent with NUMARC 93-01 and UFSAR commitments; and
- an MREP be established prior to fuel load that utilizes operating experience, PRA insights, and other applicable information to update and maintain the MR scope and SSC classification in accordance with NUMARC 93-01.

The inspectors selected a sample of SSCs to determine if scoping, use of performance criteria, and safety significance classification were conducted in accordance with MR program procedures, 10 CFR 50.65, and NUMARC 93-01. The SSCs selected were the automatic depressurization system, passive residual heat removal heat exchanger, passive containment cooling water system, pressurizer heaters, and feedwater system. The inspectors reviewed MR scoping documents and MREP meeting minutes to determine if SSC scoping was performed and performance criteria were identified in accordance with MR program procedures and 10 CFR 50.65. The inspectors reviewed MR scoping documents and MREP meeting minutes to determine if safety significance classification was performed in accordance with MR program procedures, and SSCs scoped in the Reliability Assurance Program were included within the initial MR scope as high safety significance SSCs in accordance with MR program procedures and UFSAR commitments.

The inspectors reviewed MR scoping documents and MREP meeting minutes to determine if the functions of the SSCs defined for the MR program were consistent with the safety related functions identified in system specification documents and UFSAR system descriptions.

The inspectors interviewed the MR Coordinator, 5 system engineers, 5 MREP members, and 1 MR Planner to determine if personnel involved in MR activities were knowledgeable of the MR program. The inspectors interviewed these personnel to determine if scoping, use of performance criteria, and SSC classification for the SSCs listed above was conducted in accordance with MR program procedures. The inspectors interviewed these personnel to determine if operating experience and input from the PRA were used during the scoping process and other MR activities in accordance with MR program procedures. Additionally, the inspectors reviewed a sample of training and qualification records for the personnel interviewed to determine if they were qualified for MR activities in accordance with MR program procedures.

b. Findings

No findings were identified.

3P04 Preservice Inspection

- 73754-02.02 - Personnel Qualification & Certification
- 73754-02.03 - Non-destructive Examination (NDE) Review
- 73754-02.04 - PSI Plans and Schedules
- 73754-02.05 - Effectiveness of Licensee

a. Inspection Scope

The inspectors conducted an onsite review of the implementation of the licensee's preservice inspection (PSI) activities for Unit 3. The PSI inspections are designed to provide baseline nondestructive examination (NDE) data. These PSI results can then be compared to future inservice inspection (ISI) results to help the licensee identify degradation of pressure retaining components in vital system boundaries. The scope of these PSI activities includes components within the reactor coolant system boundary, risk-significant piping boundaries, and containment system boundaries.

The inspectors selected the following Eddy Current Testing (ECT) NDE samples for review/observation:

- Unit 3 steam generator 1 tubes R40C6, R58C168, R111C53, R145C77
- Unit 3 steam generator 2 tubes R74C54, R81C43, R98C42, R115C51, R115C53, R124C54
- Unit 3 passive residual heat removal heat exchanger tubes R4C6, R10C6, R23C17, R23C19

For the samples identified above:

The inspectors reviewed Level II and III personnel qualification/certification records to verify that they contained qualification certificates and the most recent visual acuity examination report (including color vision test results). The inspectors also reviewed the vendor's ECT examination procedures to ensure they specified the multi-channel examination unit, described the method of examination, described the method and sequence of calibration, addressed the requirements of the American Society of Mechanical Engineers (ASME) Code, Sections III and XI, referenced steam generator tube examinations consistent with the licensing basis (items 1.a-b), and referenced written approval for use of Code cases.

Additionally, the inspectors reviewed procedures to verify if the requirements for the ECT exams were specified and agreed with the licensee's commitments, the qualification requirements for ECT personnel were specified and were in accordance with the licensee's PSI program, and the methods of recording, evaluating and dispositioning findings and any reports thereof were in compliance with applicable ASME Code requirements.

The inspectors also observed the ECT activities directly to verify acceptable performance in accordance with the ASME Code, Electric Power Research Institute Steam Generator Guidelines (items 1.a-b), and applicable regulatory requirements. In conducting these observations, the inspectors also confirmed that the SGs and PRHR HX were provided with the access necessary to perform both the PSI exams and future ISI exams.

Finally, the inspectors observed ECT activities to confirm if approved procedures were available, were followed, and specified NDE equipment was used. The inspectors reviewed certification records to verify if the personnel conducting the ECT were appropriately qualified/certified. The inspectors also reviewed the examination results, evaluation, and corrective actions to verify if they were recorded as specified in the licensee's PSI program and NDE procedures.

b. Findings

No findings were identified.

3P05 Preservice Inspection

- 73757-02.02 - ASME Class 1 Records Review

a. Inspection Scope

The inspectors conducted an onsite review of the implementation of the licensee's PSI activities for Unit 3. The PSI inspections are designed to provide baseline NDE data. These PSI results can then be compared to future ISI results to help the licensee identify degradation of pressure retaining components in vital system boundaries. The scope of these PSI activities includes components within the reactor coolant system boundary, risk-significant piping boundaries, and containment system boundaries.

The inspectors selected the following ECT NDE samples for review/observation:

- Unit 3 steam generator 1 tubes R40C6, R58C168, R111C53, R145C77
- Unit 3 steam generator 2 tubes R74C54, R81C43, R98C42, R115C51, R115C53, R124C54

For the samples identified above:

The inspectors reviewed the examination records to verify if the method, extent, and technique complied with the ASME Code, Sections III and XI, the licensee's PSI program, and the NDE procedure used. The inspectors also reviewed examination data to verify if the data were within the acceptance criteria listed in the NDE procedure and the requirements of ASME Sections III and XI, and that the NDE method used was sufficient to determine the full extent of the indications and their acceptance.

Additionally, the inspectors reviewed NDE findings to verify if the recording, evaluation, and disposition of the NDE findings complied with the NDE procedure and ASME Section III and XI requirements.

b. Findings

No findings were identified.

3P06 Reactor Operator Training

- 41502-02.02 - General Inspection Requirements
- 41502-02.03 - Sample Selection

a. Inspection Scope

The inspectors performed an inspection of the Unit 3 plant reference simulator in February 2015 (Inspection Report 05200025/2015301 AND 05200026/2015301, ML15113A028) and continued in the fourth quarter of 2019 (Inspection Report 05200025/2019004 AND 05200026/2019004, ML20042E292). Previously, the inspectors had completed all aspects of IP 41502 except for comparing the physical fidelity of the simulator to the actual control room because the actual control room construction had not yet been sufficiently completed to allow the comparison.

The inspectors evaluated simulator fidelity by comparing the physical adherence of the simulator to the actual control room to verify if the simulator met all the requirements of 10 CFR 55.46(c) and (d).

The inspectors reviewed the licensee's simulator configuration control program to verify if it met the recommendations of Regulatory Guide 1.149, Nuclear Power Plant Simulation Facilities for Use in Operator Training, License Examinations, and Applicant Experience Requirements, and ANSI/ANS-3.5-2009, Nuclear Power Plant Simulators for Use in Operator Training and Examination.

The inspectors reviewed discrepancies to verify if they were dispositioned in accordance with the appropriate approved plant procedures.

b. Findings

No findings were identified.

3P07 Preservice Inspection

- 73754-02.02 - Personnel Qualification & Certification
- 73754-02.03 - Non-destructive Examination (NDE) Review
- 73754-02.04 - PSI Plans and Schedules

a. Inspection Scope

The inspectors conducted an onsite review of the implementation of the licensee's PSI activities for Unit 4. The PSI inspections are designed to provide baseline NDE data. These PSI results can then be compared to future ISI results to help the licensee identify degradation of pressure retaining components in vital system boundaries. The scope of these PSI activities includes components within the reactor coolant system boundary, risk-significant piping boundaries, and containment system boundaries.

The inspectors selected the following ECT NDE samples for review/observation:

- Unit 4 passive residual heat removal heat exchanger tubes R8C6, R8C17, R21C16, R23C4

The inspectors reviewed Level II and III personnel qualification/certification records to verify that they contained qualification certificates and the most recent visual acuity examination report (including color vision test results). The inspectors also reviewed the vendor's ECT examination procedures to ensure they specified the multi-channel examination unit, described the method of examination, described the method and sequence of calibration, addressed the requirements of ASME Code Sections III and XI, and referenced written approval for use of Code cases.

Additionally, the inspectors reviewed procedures to verify if the requirements for the ECT exams were specified and agreed with the licensee's commitments, the qualification requirements for ECT personnel were specified and were in accordance with the licensee's PSI program, and the methods of recording, evaluating and dispositioning findings and any reports thereof were in compliance with applicable Code requirements.

The inspectors also observed the ECT activities directly to verify acceptable performance in accordance with ASME Code and applicable regulatory requirements. In conducting these observations, the inspectors also observed that the PRHR HX was provided with the access necessary to perform both the PSI exams and future ISI exams.

Finally, the inspectors observed ECT activities to confirm if approved procedures were available, were followed, and specified NDE equipment was used. The inspectors reviewed certification records to verify if the personnel conducting the ECT were appropriately qualified/certified. The inspectors also reviewed the examination results, evaluation, and corrective actions to verify if they were recorded as specified in the licensee's PSI program and NDE procedures.

b. Findings

No findings were identified.

4. OTHER INSPECTION RESULTS

4OA6 Meetings, Including Exit

.1 Exit Meeting.

On April 16, 2020, the inspectors presented the inspection results to Mr. M. Meier, SNC Vice President of Regulatory Affairs, 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****Licensee and Contractor Personnel**

E. Riffle, ITP Director
 A. Nix, NI Manager
 T. Petrak, ITAAC Manager
 M. Hickox, Test Support Manager
 C. Alexander, Milestone Manager
 S. Boyle, Milestone Manager
 D. Pagan-Diaz, ITP Turnover Manager
 J. Olsen, NI Supervisor
 S. Leighty, SNC Licensing Supervisor
 C. Castell, SNC Licensing Engineer
 N. Patel, SNC Licensing Engineer
 J. Cole, 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>
None			

LIST OF DOCUMENTS REVIEWED**Section 1A01****Procedures**

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 B-GEN-ITPCI-039, "PMS CIM Component Test," Rev. 3.0
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 B-GEN-ITPCI-039-F117, "RCS-PL-V001A Component Test," Rev. 1.0
 B-GEN-ITPCI-039-F119, "RCS-PL-V002A Component Test," Rev. 1.0
 B-GEN-ITPCI-039-F122, "RCS-PL-V003B Component Test," Rev. 1.0
 B-GEN-ITPCI-039-F155, "RCS-PL-V011A Component Test," Rev. 1.0

B-GEN-ITPCI-039-F157, "RCS-PL-V012A Component Test," Rev. 1.0
B-GEN-ITPCI-039-F159, "RCS-PL-V013A Component Test," Rev. 1.0
B-GEN-ITPCI-039-F165, "RCS-PL-V150A Component Test," Rev. 1.0
B-GEN-ITPCI-039-F167, "RCS-PL-V150C Component Test," Rev. 1.0
B-GEN-ITPA-011, "Initial Test Program Administrative and Test Procedure Development," Rev. 8.1
3-GEN-OTS-10-001, "Division A Quarterly Valve Stroke Test," Rev. B(0.1)
3-RCS-OTS-10-001, "Reactor Coolant System Valve Stroke," Ver. A(0)

Section 1A02Field Change Notice

SV3-GW-GCW-300, "Vogtle Unit 3 AP1000 PMS Initial Software Installation- Software Release 8.7.0.1," 08/23/2019

Corrective Action Document

CR 50045164, "Nonconformance: SV3-PMS-JD-QSPA01 BIOS Configuration," 03/16/2020

Section 1A03Miscellaneous

ND-RA-001-008-F01, PCD Review: APP-PMS-T2R-010 Rev. 0, AP1000 Protection and Safety Monitoring System Qualified Data Processing System Channel Integration Test Report, ITAAC 2.5.02.08a.ii Ver. 9.0, Dated 1/17/2020
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APP-PMS-T5-001, AP1000 Protection and Safety Monitoring System Test Plan, Rev. 5

Procedures

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Drawings

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APP-PMS-J3-413, AP1000 Detailed Functional Diagram Subcriticality CSF Calculation, Rev. 5
APP-PMS-J3-415, AP1000 Detailed Functional Diagram Passive Containment Cooling Water Flow and Visual Alert Enable Monitoring, Rev. 8
APP-PMS-J3-417, AP1000 Detailed Functional Diagram PRHR HX Outlet Temperature and Flow Monitoring, Rev. 8
APP-PMS-J3-423, AP1000 Detailed Functional Diagram Containment CSF Calculation, Rev. 8
APP-PMS-J3-424, AP1000 Detailed Functional Diagram PRHR Flow Path Valve Monitoring, Rev. 6

Section 1A04Field Change Notice

SV3-GW-GCW-300, Vog U3 AP1000 PMS Initial Software Installation -Release version 8.7.0.1," 08/23/2019

Condition Report

CR 50045164, "Nonconformance: SV3-PMS-JD-QSPA01 BIOS Configuration," 03/16/2020

Section 1A05Miscellaneous

ND-19-1538, Southern Nuclear Operating Company Vogtle Electric Generating Plant Unit 3 and Unit 4 Notice of Uncompleted ITAAC 225-days Prior to Initial Fuel Load Item 2.5.02.09d

(Index Number 548) Dated 01/02/2020

ND-RA-001-008-F01, PCD Review for ITAAC 2.5.02.08b.ii, Version 9.0, Dated 03/03/2020

Procedures

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VS3-PMS-T2R-008, V.C. Summer Unit 3 AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report, Rev. 0

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Section 1A06Field Change Notice

SV3-GW-GCW-300, "Vogtle Unit 3 AP1000 PMS Initial Software Installation- Software Release 8.7.0.1," 08/23/2019

Condition Report

CR 50045164, "Nonconformance: SV3-PMS-JD-QSPA01 BIOS Configuration," 03/16/2020

Section 1A07Miscellaneous

ND-19-1538, Southern Nuclear Operating Company Vogtle Electric Generating Plant Unit 3 and Unit 4 Notice of Uncompleted ITAAC 225-days Prior to Initial Fuel Load Item 2.5.02.09d

(Index Number 548)," 01/02/2020

ND-RA-001-008-F01, PCD Review: APP-PMS-T2R-009 Rev. 0, AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Report, ITAAC 2.5.02.09d," Version 9.0, 02/25/2020

APP-PMS-T2R-009, "AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Report," Rev. 0

Procedure

APP-PMS-T1P-009, "AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Procedure," Rev. 8

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APP-PMS-J3-520, "AP1000 Detailed Functional Diagram RNS Outer Hot Leg Suction Isolation Valves APP-RNS-PL-V002A and APP-RNS-PL-V002B Component Functional Logic Division B, Rev. 8

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APP-PMS-J3-543, "AP1000 Detailed Functional Diagram Motor Operated Valves (MOV) (4 of X)," Rev. 8

APP-PMS-J3-547, "AP1000 Detailed Functional Diagram Motor Operated Valves (MOV) (5 of X)," Rev. 7

APP-PMS-J3-367, "AP1000 Detailed Functional Diagram RCS Wide Range Pressure," Rev. 7

APP-PMS-J3-578, "AP1000 Detailed Functional Diagram PMS Loads and Component Types - RNS Suction Isolation Valves," Rev. 8

APP-PMS-J3-352, "AP1000 Detailed Functional Diagram PRHR Manual Actuation and Reset Control," Rev. 6

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Field Change Notice

SV3-GW-GCW-300, "API000 Vogtle Unit 3 PMS Initial Software Installation- Software Release 8.7.0.1," 08/23/2019

Condition Report

CR 50045164, "Nonconformance: SV3-PMS-JD-QSPA01 BIOS Configuration," 03/16/2020

3. OPERATIONAL READINESS

Section 3T01

Procedures

3-RXS-ITPP-501, "Pre- and Post-Hot Functional Test Inspection of Reactor Vessel Internals," Rev. 3

APP-CVAP-GER-004, "Comprehensive Vibration Assessment Program (CVAP) Measurement and Inspection Programs for the AP1000 Plant," Rev. 0

Miscellaneous

WDI-PJF-1323441-EPP-001, "Vogtle Unit 3 & 4 AP1000, Reactor Vessel Examination Program Plan," Rev. 0

WDI-SSP-1339, "Visual Examination of Reactor Vessel and Internals for Vogtle Units 3 & 4 AP1000 (CVAP)," Rev. 0

Section 3T02

Procedures:

3-CCS-ITPP-501, "Component Cooling Water System Preoperational Test Procedure," Rev. 1.0

3-SFS-ITPP-502, "Spent Fuel Pool Cooling System Flow Path Preoperational Test Procedure," Rev. 3.0

3-VFS-ITPP-501, "Containment Air Filtration System Preoperational Test Procedure," Rev. 1.0

Test Specifications:

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APP-SFS-T1-501, "Spent Fuel Pool Cooling System Preoperational Test Specification," Rev. 4

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3-CAS-ITPP-501, "Compressed and Instrument Airs Systems Preoperational Test Procedure," Rev. 2.0

3-CCS-ITPP-501, "Component Cooling Water System Preoperational Test Procedure," Rev. 1.0

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3-FPS-ITPP-501, "Fire Protection Preoperational Test," Rev. 1.0
3-SFS-ITPP-502, "Spent Fuel Pool Cooling System Flow Path Preoperational Test Procedure,"
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3-VFS-ITPP-501, "Containment Air Filtration System Preoperational Test Procedure," Rev. 1.0
3-VWS-ITPP-501, "Central Chilled Water System Preoperational Test," Rev. 1.0

Test Specifications:

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SV3-CCS-T1-501, "Component Cooling Water System Preoperational Test Specification," Rev.
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Miscellaneous

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Drawings

SV3-PXS-M6-001, "Piping and Instrumentation Diagram Passive Core Cooling System," Rev.14
SV3-PXS-M6-003, "Piping and Instrumentation Diagram Passive Core Cooling System," Rev.
13
SV3-PXS-M6-002, "Piping and Instrumentation Diagram Passive Core Cooling System," Rev.
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ND-LI-VNP-002, Applicability Determination for Vogtle 3 & 4, Rev 8.1
NMP-EP-140, Accident Assessment, Rev. 3
NMP-EP-140-004, Vogtle 3&4 Core Damage Assessment, Rev. 1
NMP-EP-141-004, Vogtle 3 & 4 Emergency Action Levels and Basis, Rev. 1
NMP-EP-142, Emergency Notification, Version 4.0
NMP-EP-142-F01, Emergency Notification Form (ENF)
NMP-EP-142-F02, Emergency Notifications Instructions for Electronic Notification
NMP-EP-144, Protective Actions, Version 5.0

NMP-EP-147, Offsite Dose Assessment, Rev. 4
NMP-GM-002, Corrective Action Program, Version 15.2
SNC Standard Emergency Plan, Version 4
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ND-18-001-00, 10 CFR 50.54(q) Screening for NMP-EP-141-004 Ver. 1.0, dated 09/17/2018
ND-18-001-00, 10 CFR 50.54(q) Evaluation for NMP-EP-141-004 Ver. 1.0, dated 09/18/2018
ND-18-002-00, 10 CFR 50.54(q) Screening for NMP-EP-141-004 Ver. 2.0, NMP-EP-141-004-F01 Ver. 2.0, & NMP-EP-141-004-F02 Ver. 2.0, dated 03/20/2019
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ND-15-007-01, NMP-EP-303, Version 21, dated 05/29/2019
ND-15-014-01, VEGP 3&4 Emergency Plan Change to Address NRC and ORO Support Facility, dated 12/30/2015
ND-16-002-02, VEGP 3 and 4 OSA Revision, dated 04/21/2016
ND-17-001-01, SNC SEP Annex for VEGP Units 3 & 4, Rev 1.0, dated 04/24/2017
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CR 50014082, HP and EP procedures and training do not align on approval authority for dose limit increases
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CR 50030678, Recommended change to NMP-EP-141-004 and NMP-EP-141-004-F01
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CRs as a result of Inspection

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Section 3P02

Miscellaneous

APP-GW-G1-002, AP1000 Equipment Qualification Methodology, Rev. 5
APP-GW-VP-010, Equipment Qualification Methodology and Documentation Requirements for AP1000 Safety-Related Valves and Valve Appurtenances, Rev. 3
APP-GW-VP-030, AP1000 Environmental Conditions, Rev. 6
APP-1000-S2C-056, Nuclear Island Seismic Floor Response Spectra, Rev. 2
APP-PV13-Z0-001, Design Specification for Solenoid Valves ASME Boiler and Pressure Vessel Code, Section III, Class 1, 2, and 3, Rev. 10

APP-PV13-Z0R-001, Solenoid Valves, ASME Boiler and Pressure Vessel Code, Section III, Class 1, 2, and 3 Valve Data Sheet Report, Rev. 8
APP-PV13-Z0D-101, PV13 Datasheet 101, Rev. 7
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QP526-5688-26-2, High Level Qualification Test Procedure for Process Solenoid Valve Models V526-5631-36 and V526-5688-26, Rev. L
QR526-5631-36-1, ASME QME-1 EQ Qualification Report for V526-5631-36 & DS101, Rev. C
APP-PV13-VBR-011, Equipment Qualification Summary Report for Valcor Solenoid-Operated Globe Valve Assemblies for Use in the AP1000 Plant, Rev. 0
APP-PV13-VBR-012, Equipment Qualification Data Package for Valcor Solenoid-Operated Globe Valve Assemblies for Use in the AP1000 Plant, Rev. 0
APP-PV13-VMM-001, PV13 Solenoid Valve Instruction Manual, Rev. 3
APP-PV13-VPC-001, Assessment of Seismic Margin From PV13 Test, Rev. 0
ND-EN-VNP-006, Equipment Qualification Data Package (EQDP) Review and Acceptance, Version 4.0
EQTF-PV13-VBR-012, EQTF Signature Package (APP-PV13-VBR-012), Rev. 1

Section 3P03

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APP-RCS-M3-001, Reactor Coolant System, System Specific Document, Rev. 12
NMP-DP-001, Operational Risk Awareness, Version 16.0
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MRS-GEN-1127, Guideline for Steam Generator Eddy Current Data Quality Requirements, Rev. 15
MRS-GEN-1214, Steam Generator Channel Head Video Inspection, Rev. 5
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SG-CDMP-19-20, Vogtle Unit 3 & 4 Steam Generator Degradation Assessment for Pre-Service Inspection, Rev. 0
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Westinghouse Vision Acuity Examination Record (Gootz), dated 02/21/2019
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Westinghouse SG-1 Listing of SG PSI Baseline Calls, dated 02/03/2020
Westinghouse SG-2 Listing of SG PSI Baseline Calls, dated 02/03/2020
Westinghouse PRHR Listing of SG PSI Baseline Calls, dated 02/03/2020

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MRS-GEN-1127, Guideline for Steam Generator Eddy Current Data Quality Requirements, Rev. 15
MRS-GEN-1214, Steam Generator Channel Head Video Inspection, Rev. 5
MRS-GEN-1240, Position Verification Procedure, Rev. 7
MRS-GEN-1297, Steam Generator Channelhead Cleanliness, Rev. 5.0

Miscellaneous

QAP 2.9, System One Qualification & Certification of NDE Personnel under CP-189 & ASME Section XI, Rev. 2
QAP 2.9, System One Qualification & Certification of NDE Personnel under CP-189 & ASME Section XI, Rev. 5
SG-CDMP-19-20, Vogtle Unit 3 & 4 Steam Generator Degradation Assessment for Pre-Service Inspection, Rev. 0
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Section 3P06

Miscellaneous Documents

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Section 3P07

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NDE Technology, Inc. Personnel Certification Summary: Eddy Current: LIIA (Siegel), dated 08/17/2016

NDE Technology, Inc. Personnel Vision Certification (Siegel), dated 06/21/2019

QAP 2.9, System One Qualification & Certification of NDE Personnel under CP-189 & ASME Section XI, Rev. 2

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SV3-A-120, Westinghouse Multi-Frequency Eddy Current Parameters: Bobbin, Rev. 0

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Westinghouse PRHR Listing of SG PSI Baseline Calls, dated 02/03/2020

Westinghouse Vision Acuity Examination Record (Mauk), dated 01/08/2020

Westinghouse Vision Acuity Examination Record (Pocratzky), dated 02/07/2019

LIST OF ACRONYMS

ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
CR	condition report
E-Plan	site-specific emergency plan
EAL	emergency action level
ECT	eddy current testing
EP	emergency preparedness
EIPs	emergency plan implementing procedures
EQDP	equipment qualification data package
EQSR	equipment qualification summary report
FAT	factory acceptance test
FCN	field change notice
IEEE	Institute of Electrical and Electronics Engineers
IP	inspection procedure
ISI	inservice inspection
ITAAC	inspections, tests, analysis, and acceptance criteria
MCR	main control room
M&TE	measuring and test equipment
MR	maintenance rule
MREP	maintenance rule expert panel
NDE	nondestructive examination
NRC	Nuclear Regulatory Commission
PAR	protective action recommendation
PMS	protection and safety monitoring system
PSI	preservice inspection
RIE	reduction in effectiveness
RG	regulatory guide
SSC	structures, systems, and component
TSC	technical support center
UFSAR	Updated Final Safety Analysis Report
VEGP	Vogtle Electric Generating Plant

ITAAC INSPECTED

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
47	2.1.02.11a.ii	<p>10. Safety-related displays identified in Table 2.1.2-1 can be retrieved in the MCR. 11.a) Controls exist in the MCR to cause the remotely operated valves identified in Table 2.1.2-1 to perform active functions. 11.b) The valves identified in Table 2.1.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS. 12.b) After loss of motive power, the remotely operated valves identified in Table 2.1.2-1 assume the indicated loss of motive power position.</p>	<p>Inspection will be performed for retrievability of the safety-related displays in the MCR. ii) Stroke testing will be performed on the other remotely operated valves listed in Table 2.1.2-1 using controls in the MCR. ii) Testing will be performed on the other remotely operated valves identified in Table 2.1.2-1 using real or simulated signals into the PMS. iii) Testing will be performed to demonstrate that remotely operated RCS valves V001A/B, V002A/B, V003A/B, V011A/B, V012A/B, V013A/B open within the required response times. Testing of the remotely operated valves will be performed under the conditions of loss of motive power.</p>	<p>Safety-related displays identified in Table 2.1.2-1 can be retrieved in the MCR. ii) Controls in the MCR operate to cause the remotely operated valves (other than squib valves) to perform active functions. ii) The other remotely operated valves identified in Table 2.1.2-1 as having PMS control perform the active function identified in the table after receiving a signal from PMS. iii) These valves open within the following times after receipt of an actuation signal: V001A/B < 40 sec V002A/B, V003A/B < 100 sec V011A/B < 30 sec V012A/B, V013A/B < 60 sec Upon loss of motive power, each remotely operated valve identified in Table 2.1.2-1 assumes the indicated loss of motive power position.</p>

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. 151. 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. 151. ii) The as-built reactor internals have no observable damage or loose parts. At least eight capsules are in the reactor lower internals assembly.
116	2.2.01.11a.iii	11.a) The motor-operated and check valves identified in Table 2.2.1-1 perform an active safety-related function to change position as indicated in the table.	iii) Tests of the motor-operated valves will be performed under preoperational flow, differential pressure, and temperature conditions.	iii) Each motor-operated valve changes position as indicated in Table 2.2.1-1 under pre-operational test conditions.
117	2.2.01.11a.iv	11.a) The motor-operated and check valves identified in Table 2.2.1-1 perform an active safety-related function to change position as indicated in the table.	iv) Exercise testing of the check valves with active safety functions identified in Table 2.2.1-1 will be performed under preoperational test pressure, temperature and fluid flow conditions.	iv) Each check valve changes position as indicated in Table 2.2.1-1.

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.	<p>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.</p> <p>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.</p>	<p>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/gpm² and $\leq 1.83 \times 10^{-5}$ ft/gpm².</p>

530	2.5.02.06a.ii	<p>6.a) The PMS initiates an automatic reactor trip, as identified in Table 2.5.2-2, when plant process signals reach specified limits. 6.b) The PMS initiates automatic actuation of engineered safety features, as identified in Table 2.5.2-3, when plant process signals reach specified limits. 6.c) The PMS provides manual initiation of reactor trip and selected engineered safety features as identified in Table 2.5.2-4. 8.a) The PMS provides for the minimum inventory of displays, visual alerts, and fixed position controls, as identified in Table 2.5.2-5. The plant parameters listed with a "Yes" in the "Display" column and visual alerts listed with a "Yes" in the "Alert" column can be retrieved in the MCR. The fixed position controls listed with a "Yes" in the "Control" column are provided in the MCR. 8.c) Displays of the open/closed status of the reactor trip breakers can be retrieved in the MCR. 9.a) The</p>	<p>An operational test of the as-built PMS will be performed using real or simulated test signals. An operational test of the as-built PMS will be performed using real or simulated test signals. An operational test of the as-built PMS will be performed using the PMS manual actuation controls. i) An inspection will be performed for retrievability of plant parameters in the MCR. iii) An operational test of the as-built system will be performed using each MCR fixed position control. Inspection will be performed for retrievability of displays of the open/closed status of the reactor trip breakers in the MCR. An operational test of the as-built PMS will be performed using real or simulated test signals. An operational test of the as-built PMS will be performed. An operational test of the as-built PMS will be performed. With one channel in bypass, an attempt will be made to place a redundant channel in bypass.</p>	<p>ii) PMS output signals to the reactor trip switchgear are generated after the test signal reaches the specified limit. This needs to be verified for each automatic reactor trip function. Appropriate PMS output signals are generated after the test signal reaches the specified limit. These output signals remain following removal of the test signal. Tests from the actuation signal to the actuated device(s) are performed as part of the system-related inspection, test, analysis, and acceptance criteria. ii) PMS output signals are generated for reactor trip and selected engineered safety features as identified in Table 2.5.2-4 after the manual initiation controls are actuated. i) The plant parameters listed in Table 2.5.2-5 with a "Yes" in the "Display" column, can be retrieved in the MCR. iii) For each test of an as-built fixed position control listed in Table 2.5.2-5 with a "Yes" in the "Control" column, an actuation signal is generated. Tests from the actuation signal to the actuated</p>
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No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
		<p>PMS automatically removes blocks of reactor trip and engineered safety features actuation when the plant approaches conditions for which the associated function is designed to provide protection. These blocks are identified in Table 2.5.2-6.</p> <p>9.b) The PMS two-out-of-four initiation logic reverts to a two-out-of-three coincidence logic if one of the four channels is bypassed. All bypassed channels are alarmed in the MCR.</p> <p>9.c) The PMS does not allow simultaneous bypass of two redundant channels.</p>		<p>device(s) are performed as part of the system-related inspection, test, analysis and acceptance criteria. Displays of the open/closed status of the reactor trip breakers can be retrieved in the MCR. The PMS blocks are automatically removed when the test signal reaches the specified limit. The PMS two-out-of-four initiation logic reverts to a two-out-of-three coincidence logic if one of the four channels is bypassed. All bypassed channels are alarmed in the MCR. The redundant channel cannot be placed in bypass.</p>

No.	ITAAC No.	Design Commitment	Inspections, Tests, Analysis	Acceptance Criteria
540	2.5.02.08a.ii	8.a) The PMS provides for the minimum inventory of displays, visual alerts, and fixed position controls, as identified in Table 2.5.2-5. The plant parameters listed with a "Yes" in the "Display" column and visual alerts listed with a "Yes" in the "Alert" column can be retrieved in the MCR. The fixed position controls listed with a "Yes" in the "Control" column are provided in the MCR.	ii) An inspection and test will be performed to verify that the plant parameters are used to generate visual alerts that identify challenges to critical safety functions.	ii) The plant parameters listed in Table 2.5.2-5 with a "Yes" in the "Alert" column are used to generate visual alerts that identify challenges to critical safety functions. The visual alerts actuate in accordance with their correct logic and values.
543	2.5.02.08b.ii	8.b) The PMS provides for the transfer of control capability from the MCR to the RSW using multiple transfer switches. Each individual transfer switch is associated with only a single safety-related group or with nonsafety-related control capability.	ii) An operational test of the as-built system will be performed to demonstrate the transfer of control capability from the MCR to the RSW.	ii) Actuation of each transfer switch results in an alarm in the MCR and RSW, the activation of operator control capability from the RSW, and the deactivation of operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.
548	2.5.02.09d	9.d) The PMS provides the interlock functions identified in Table 2.5.2-7.	An operational test of the as-built PMS will be performed using real or simulated test signals.	Appropriate PMS output signals are generated as the interlock conditions are changed.