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JUN 0 1 2022

Docket No.: 52-025

ND-22-0186
10 CFR 52.99(c)(1)

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 3
ITAAC Closure Notification on Completion of ITAAC 2.2.05.07a.i [Index Number 265]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 3 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.2.05.07a.i [Index Number 265]. This ITAAC verifies that: The Main Control Room Emergency Habitability System (VES) provides a 72-hour supply of breathable quality air for the occupants of the Main Control Room (MCR), maintains the MCR pressure boundary at a positive pressure with respect to the surrounding areas, provides a passive recirculation flow of MCR air to maintain main control room dose rates below an acceptable level during VES operation, and the background noise level in the MCR does not exceed 65 dB(A) at the operator workstations when VES is operating. This ITAAC also ensures safety-related displays identified in Combined License (COL) Table 2.2.5-1 can be retrieved in the MCR, controls exist in the MCR to cause remotely operated valves identified in COL Table 2.2.5-1 perform their active functions, the valves identified in COL Table 2.2.5-1 as having PMS control perform their active safety function after receiving a signal from the PMS, and that after loss of motive power, the remotely operated valves identified in COL Table 2.2.5-1 assume the indicated loss of motive power position. Additionally, this ITAAC verifies displays of the parameters identified in COL Table 2.2.5-3 can be retrieved in the MCR. The closure process for this ITAAC was based on the guidance described in NEI 08-01, "Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52," which was endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,

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Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3
Completion of ITAAC 2.2.05.07a.i [Index Number 265]

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Southern Nuclear Operating Company
ND-22-0186
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 3
Completion of ITAAC 2.2.05.07a.i [Index Number 265]

ITAAC Statement

Design Commitment

7.a) The VES provides a 72-hour supply of breathable quality air for the occupants of the MCR.

7.b) The VES maintains the MCR pressure boundary at a positive pressure with respect to the surrounding areas.

7.d) The system provides a passive recirculation flow of MCR air to maintain main control room dose rates below an acceptable level during VES operation.

8. Safety-related displays identified in Table 2.2.5-1 can be retrieved in the MCR.

9.a) Controls exist in the MCR to cause remotely operated valves identified in Table 2.2.5-1 to perform their active functions.

9.b) The valves identified in Table 2.2.5-1 as having PMS control perform their active safety function after receiving a signal from the PMS.

10. After loss of motive power, the remotely operated valves identified in Table 2.2.5-1 assume the indicated loss of motive power position.

11. Displays of the parameters identified in Table 2.2.5-3 can be retrieved in the MCR.

12 The background noise level in the MCR does not exceed 65 dB(A) at the operator workstations when VES is operating.

Inspections, Tests, Analyses

i) Testing will be performed to confirm that the required amount of air flow is delivered to the MCR.

iii) MCR air samples will be taken during VES testing and analyzed for quality.

i) Testing will be performed with VES flow rate between 60 and 70 scfm to confirm that the MCR is capable of maintaining the required pressurization of the pressure boundary.

ii) Air leakage into the MCR will be measured during VES testing using a tracer gas.

Testing will be performed to confirm that the required amount of air flow circulates through the MCR passive filtration system,

Inspection will be performed for retrievability of the safety-related displays in the MCR.

Stroke testing will be performed on remotely operated valves identified in Table 2.2.5-1 using the controls in the MCR.

Testing will be performed on remotely operated valves listed in Table 2.2.5-1 using real or simulated signals into the PMS.

Testing of the remotely operated valves will be performed under the conditions of loss of motive power.

Inspection will be performed for retrievability of the parameters in the MCR.

The as-built VES will be operated, and background noise levels in the MCR will be measured at the operator work stations with the plant not operating.

Acceptance Criteria

i) The air flow rate from the VES is at least 60 scfm and not more than 70 scfm.

iii) The MCR air is of breathable quality.

i) The MCR pressure boundary is pressurized to greater than or equal to 1/8-in. water gauge with respect to the surrounding area.

ii) Air leakage into the MCR is less than or equal to 10 cfm.

The air flow rate at the outlet of the MCR passive filtration system is at least 600 cfm greater than the flow measured by VES-003A/B.

Safety-related displays identified in Table 2.2.5-1 can be retrieved in the MCR.

Controls in the MCR operate to cause remotely operated valves identified in Table 2.2.5-1 to perform their active safety functions.

The remotely operated valves identified in Table 2.2.5-1 as having PMS control perform the active safety function identified in the table after receiving a signal from the PMS.

After loss of motive power, each remotely operated valve identified in Table 2.2.5-1 assumes the indicated loss of motive power position.

The displays identified in Table 2.2.5-3 can be retrieved in the MCR.

The background noise level in the MCR does not exceed 65 dB(A) at the operator work stations when the VES is operating.

ITAAC Determination Basis

Multiple ITAAC were performed to verify that the Main Control Room Emergency Habitability System (VES) provides a 72-hour supply of breathable quality air for the occupants of the Main Control Room (MCR), maintains the MCR pressure boundary at a positive pressure with respect to the surrounding areas, limits air in-leakage to the MCR, provides a passive recirculation flow of MCR air to maintain main control room dose rates below an acceptable level during VES operation, and the background noise level in the MCR does not exceed 65 dB(A) at the operator workstations when VES is operating. This ITAAC also ensures safety-related displays identified in Combined License (COL) Table 2.2.5-1 can be retrieved in the MCR, controls exist in the MCR to cause remotely operated valves identified in COL Table 2.2.5-1 perform their active functions, the valves identified in COL Table 2.2.5-1 as having PMS control perform their active safety function after receiving a signal from the PMS, and that after loss of motive power, the remotely operated valves identified in COL Table 2.2.5-1 assume the indicated loss of motive power position. Additionally, this ITAAC verifies displays of the parameters identified in COL Table 2.2.5-3 can be retrieved in the MCR.

i) The air flow rate from the VES is at least 60 scfm and not more than 70 scfm.

Testing was performed in accordance with Unit 3 preoperational test procedure listed in Reference 3 to confirm that the required amount of air flow is delivered to the MCR.

The test manually actuated a MCR isolation and VES actuation from a normal ventilation alignment, verified proper system alignment and measured the flow rate into the MCR from the VES using VES-FT003A/B (MCR Air Delivery Line A/B Flow rate sensors). The flow from the Unit 3 VES was 67.82 scfm. This demonstrated that the air flow rate from the VES is at least 60 scfm and not more than 70 scfm.

iii) The MCR air is of breathable quality.

Testing was performed in accordance with Unit 3 preoperational test procedure listed in Reference 3 to confirm that the MCR air is of breathable quality.

The test manually actuated a MCR isolation and VES actuation from a normal ventilation alignment, verified proper system alignment and recorded data from 3 air quality analyzers for a minimum of 6 hours. The VES provided breathable air from the air storage bottles and maintained the breathability of the MCR air by limiting the carbon dioxide concentration below ½ percent by volume. The MCR air quality was maintained within the guidelines of Appendix C, Table C-1 of ASHRAE Standard 62.1 – 1989 as documented in Reference 3. The Unit 3 data was analyzed and extrapolated to a 72-hour duration for up to 11 MCR occupants and demonstrated that the Unit 3 MCR air is of breathable quality.

i) The MCR pressure boundary is pressurized to greater than or equal to 1/8-in. water gauge with respect to the surrounding area.

Testing was performed in accordance with Unit 3 preoperational test procedure listed in Reference 3 to confirm that the MCR is capable of maintaining the required pressurization of the pressure boundary with VES in service.

During the period when the MCR ventilation systems were in an alignment with VES in service, the atmospheric pressure was measured in an adjacent area outside the MCR and the test meter was zeroed. The MCR was entered, the meter was allowed to stabilize, and a reading was taken. This was repeated for each adjacent area to the MCR until all adjacent areas had been tested. The test results show the Unit 3 MCR minimum boundary differential pressure was 0.16 inch water gauge (WG) which confirmed the MCR pressurization boundary is pressurized to greater than or equal to 1/8-in. water gauge with respect to the surrounding area.

ii) Air leakage into the MCR is less than or equal to 10 cfm.

Testing was performed in accordance with Unit 3 preoperational test procedure listed in Reference 3 to confirm that air leakage into the MCR is less than or equal to 10 cfm.

During the period when the MCR ventilation systems were in an alignment with VES in service, a tracer gas was injected into the MCR to establish a known concentration based on MCR volume. Once an equilibrium value was reached, the tracer gas injection was reduced and periodic sampling of the MCR atmosphere was performed. The envelope air leakage into the MCR was calculated and corrected to account for MCR outside air makeup. The results of the test demonstrated the air leakage into the Unit 3 MCR was 5 cfm which confirmed the air leakage into the MCR is less than or equal to 10 cfm.

The air flow rate at the outlet of the MCR passive filtration system is at least 600 cfm greater than the flow measured by VES-003A/B.

Testing was performed in accordance with Unit 3 preoperational test procedure listed in Reference 3 to confirm that the air flow rate at the outlet of the MCR passive filtration system was at least 600 cfm greater than the flow rate measured by VES-003A/B.

During the period when the MCR ventilation systems were in an alignment with VES in service, the MCR air delivery line A/B flow rate (VES-003A/B) and the flow rate at the outlet of the MCR passive filtration system were recorded. The flow differential for Unit 3 was 813 cfm. This verified that the air flow rate at the outlet of the MCR passive filtration system is at least 600 cfm greater than the flow rate measured by VES-003A/B.

Safety-related displays identified in Table 2.2.5-1 can be retrieved in the MCR.

An inspection was performed in accordance with Unit 3 component test work packages as documented in Reference 1 and verified the safety-related displays identified in COL Table 2.2.5-1 (Attachment A) can be retrieved in the MCR.

The inspection began at the Primary Dedicated Safety Panel for Division A and verified all of the safety-related displays in Attachment A can be retrieved. This was repeated for each of the 3 remaining Primary Dedicated Safety Panel Divisions. This confirmed that the safety-related displays identified in Table 2.2.5-1 can be retrieved in the MCR.

Controls in the MCR operate to cause remotely operated valves identified in Table 2.2.5-1 to perform their active safety functions.

Testing was performed in accordance with Unit 3 component test work packages as documented in Reference 2 and verified controls in the MCR operate to cause remotely operated valves identified in COL Table 2.2.5-1 (Attachment B) to perform their active safety functions.

Testing began by ensuring each valve listed in Attachment B was closed. At a MCR operator workstation, each valve was operated to the active function position (open), the valve position was verified locally, and documented in the test. This demonstrated that controls in Unit 3 MCR operate to cause remotely operated valves identified in Table 2.2.5-1 to perform their active safety functions.

The remotely operated valves identified in Table 2.2.5-1 as having PMS control perform the active safety function identified in the table after receiving a signal from the PMS.

Testing was performed in accordance with Unit 3 component test work packages as documented in Reference 2. These component test packages utilized procedures as outlined in Reference 2 and confirmed that the remotely operated valves identified in COL Table 2.2.5-1 (Attachment C) as having PMS control perform the active safety function identified in the table after receiving a signal from the PMS.

Work packages and procedures in Reference 2 established initial conditions with each valve verified locally and in the MCR to be in the closed position. An actuation signal was generated by PMS using the PMS Maintenance and Test Panel (MTP) to generate a signal to open the valves in Attachment C. Each valve was verified locally and in the MCR to be open. This verified that the remotely operated valves identified in Table 2.2.5-1 as having PMS control perform the active safety function identified in the table after receiving a signal from the PMS.

After loss of motive power, each remotely operated valve identified in Table 2.2.5-1 assumes the indicated loss of motive power position.

Testing was performed in accordance with Unit 3 component test work packages as documented in Reference 2 and demonstrated that after a loss of motive power, each remotely operated valve identified in COL Table 2.2.5-1 (Attachment D) assumes the indicated loss of motive power position.

The component test configured and documented the air-operated valves (VES-PL-V022A and V022B) in the closed position and then removed power to the solenoid valve supplying air to the valve operator. The valve was verified to fail to the required position (open) locally. Power was restored, and the valve was positioned as required by plant conditions. The solenoid-operated valves (VES-PL-V005A and V005B) were placed in the closed position, power was removed, and the valve was verified to fail to the required position (open) locally. An attempt was made to reposition the valve and it was verified to not change position. Power was restored, and the valves were positioned as required by plant conditions. The test results demonstrated that for Unit 3 after a loss of motive power, each remotely operated valve identified in Table 2.2.5-1 assumes the indicated loss of motive power position.

The displays identified in Table 2.2.5-3 can be retrieved in the MCR.

An inspection was performed in accordance with Unit 3 component test work packages as documented in Reference 1 to confirm that the displays identified in COL Table 2.2.5-3 (Attachment E) can be retrieved in the MCR.

Testing began at an operator work station in Unit 3 MCR and verified all the displays identified in Attachment E can be retrieved. This confirmed that the displays identified in Table 2.2.5-3 can be retrieved in the MCR.

The background noise level in the MCR does not exceed 65 dB(A) at the operator work stations when the VES is operating.

Testing was performed in accordance with Unit 3 preoperational test procedure listed in Reference 3 and verified the background noise level in the MCR did not exceed 65 dB(A) at the operator work stations when the as-built VES is operating.

During the period when the MCR ventilation systems were in an alignment with VES in service, the background noise level was recorded for no less than 6 hours at the MCR operator work stations. This data was analyzed, recorded and the results show Unit 3 maximum noise level was 61.6 dB(A) at the MCR operator work stations. The test results demonstrated the background noise level in the MCR does not exceed 65 dB(A) at the operator work stations when the VES is operating.

References 1 through 3 are available for NRC inspection as part of ITAAC 2.2.05.07a.i Unit 3 Completion Package (Reference 4).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company performed a review of all ITAAC findings pertaining to the subject ITAAC and associated corrective actions. This review found there were no relevant findings associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package 2.2.05.07a.i (Reference 4) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.2.05.07a.i was performed for VEGP Unit 3 and that the prescribed acceptance criteria were met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. SV3-VBS-ITR-800265, Rev 0, " Unit 3 Main Control Room Emergency Habitability System Displays: ITAAC 2.2.05.07a.i Items 8 and 11"
2. SV3-VES-ITR-801265, Rev 0, "Unit 3 Main Control Room Emergency Habitability System (VES) Valve Control: ITAAC 2.2.05.07a.i Items 9.a, 9.b and 10"
3. SV3-VES-ITR-802265, Rev 0, "Unit 3 Main Control Room Emergency Habitability System (VES) Pressure, Flow and Noise: ITAAC 2.2.05.07a.i Items 7.a, 7.b, 7.d and 12"
4. 2.2.05.07a.i-U3-CP-Rev0, ITAAC Completion Package

Attachment A
***Excerpt from COL Appendix C Table 2.2.5-1**

Table 2.2.5-1		
***Equipment Name**	***Tag No.**	***Safety-Related Display**
MCR Load Shed Panel 1	VES-EP-01	Yes
MCR Load Shed Panel 2	VES-EP-02	Yes
MCR Air Delivery Isolation Valve A	VES-PL-V005A	Yes
MCR Air Delivery Isolation Valve B	VES-PL-V005B	Yes
MCR Pressure Relief Isolation Valve A	VES-PL-V022A	Yes
MCR Pressure Relief Isolation Valve B	VES-PL-V022B	Yes
MCR Air Delivery Line Flow Sensor	VES-003A	Yes
MCR Air Delivery Line Flow Sensor	VES-003B	Yes
MCR Differential Pressure Sensor A	VES-004A	Yes
MCR Differential Pressure Sensor B	VES-004B	Yes

Attachment B
***Excerpt from COL Appendix C Table 2.2.5-1**

Table 2.2.5-1			
***Equipment Name**	***Tag No.**	***Remotely Operated Valve**	***Active Function**
MCR Air Delivery Isolation Valve A	VES-PL-V005A	Yes	Transfer Open
MCR Air Delivery Isolation Valve B	VES-PL-V005B	Yes	Transfer Open
MCR Pressure Relief Isolation Valve A	VES-PL-V022A	Yes	Transfer Open
MCR Pressure Relief Isolation Valve A	VES-PL-V022B	Yes	Transfer Open

Attachment C
***Excerpt from COL Appendix C Table 2.2.5-1**

Table 2.2.5-1				
***Equipment Name**	***Tag No.**	***Remotely Operated Valve**	***Control PMS**	***Active Function**
MCR Air Delivery Isolation Valve A	VES-PL-V005A	Yes	Yes	Transfer Open
MCR Air Delivery Isolation Valve B	VES-PL-V005B	Yes	Yes	Transfer Open
MCR Pressure Relief Isolation Valve A	VES-PL-V022A	Yes	Yes	Transfer Open
MCR Pressure Relief Isolation Valve B	VES-PL-V022B	Yes	Yes	Transfer Open

Attachment D
***Excerpt from COL Appendix C Table 2.2.5-1**

Table 2.2.5-1			
***Equipment Name**	***Tag No.**	***Remotely Operated Valve**	***Loss of Motive Power Position**
MCR Air Delivery Isolation Valve A	VES-PL-V005A	Yes	Open
MCR Air Delivery Isolation Valve B	VES-PL-V005B	Yes	Open
MCR Pressure Relief Isolation Valve A	VES-PL-V022A	Yes	Open
MCR Pressure Relief Isolation Valve B	VES-PL-V022B	Yes	Open

Attachment E
Excerpt from COL Appendix C Table 2.2.5-3

Table 2.2.5-3		
Equipment	**Tag No.**	**Display**
Air Storage Tank Pressure	VES-001A	Yes
Air Storage Tank Pressure	VES-001B	Yes