



Sequoyah Nuclear Plant, Post Office Box 2000, Soddy Daisy, Tennessee 37384

January 25, 2023

10 CFR 21.21(d)(3)(ii)

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001


Sequoyah Nuclear Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-77 and DPR-79
NRC Docket Nos. 50-327 and 50-328

Subject: 10 CFR 21.21 Final Report Regarding Siemens Medium Voltage Circuit Breakers

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Part 21, "Reporting of Defects and Noncompliance," the Tennessee Valley Authority is providing the required written notification of a defect in a basic component associated with Siemens Medium Voltage Circuit Breakers supplied by Framatome Inc. The enclosure to this letter provides the information required in 10 CFR 21.21(d)(4).

There are no regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact Mr. Rick Medina, Sequoyah Site Licensing Manager, at (423) 843-8129.

Respectfully,


for Thomas Marshall
Site Vice President
Sequoyah Nuclear Plant

Enclosure: Part 21 Notification of Siemens Medium Voltage Circuit Breakers

cc: NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Sequoyah Nuclear Plant

ENCLOSURE

SEQUOYAH NUCLEAR PLANT (SQN), UNIT 1

PART 21 NOTIFICATION OF SIEMENS MEDIUM VOLTAGE CIRCUIT BREAKERS

- (i) Name and address of the individual or individuals informing the Commission.

Mr. Thomas Marshall
Tennessee Valley Authority
Vice President, Sequoyah Nuclear Plant Units 1 and 2
Post Office Box 2000
Soddy-Daisy, TN 37384

- (ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

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Basic Component: Siemens, 6.9KV, 1200A, 125 VDC Vacuum Circuit Breaker Model No. 7-HKR-50-1200-130

- (iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

Breaker Supplier:
Framatome Inc.
100 East Kensing Drive, Suite 100
Cranberry Township, PA 16066

- (iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

Framatome Inc. identified a deviation in the Siemens medium voltage vacuum circuit breaker where a failure to electrically charge or electrically close could occur. Framatome Inc. identified this as a departure from the technical requirements included in the procurement document. It is noted that the ability to electrically trip the circuit breaker would not be affected by the condition. TVA was notified by Framatome under 10 CFR 21.21(b) to evaluate the application of the breaker for a substantial safety hazard. The TVA evaluation identified these breakers, as intended for use in safety related Class 1E applications where a loss of the closure function, would impact mitigation of design basis accidents and transients.

During the Framatome dedication testing/inspection of Siemens medium voltage vacuum breakers, a hi-pot test failure on one circuit breaker was encountered. Troubleshooting and inspection found damage to charging motor wiring. It was determined that the cause of the damage was due to the manner in which control wiring was routed and

connected to the internal bracket in close proximity to a bracket edge. This edge caused damage to wiring after significant number of cycles were applied to the breaker prior to dedication testing.

- (v) The date on which the information of such defect or failure to comply was obtained.

Discovery date: On May 23, 2022, Framatome informed TVA of a deviation of breakers purchased under contract. TVA determined a defect of the basic component that could create a substantial safety hazard existed on January 23, 2023

- (vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

TVA contracted with Framatome to supply 9 medium voltage vacuum circuit breakers for use in safety related Class 1E applications, such as emergency core cooling system safety injection and residual heat removal pumps.

- (vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

TVA received the 9 medium voltage vacuum circuit breakers at an offsite warehouse facility. While located at that facility, TVA with assistance from Framatome examined the affected breakers for the wire routing condition. The wiring harnesses of certain breakers were corrected. Future action - Framatome is to examine medium voltage vacuum circuit breakers that may be purchased under this contract for the wiring condition and correct as necessary before delivery.

- (viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

None.

- (ix) In the case of an early site permit, the entities to whom an early site permit was transferred.

Not applicable.