GE Energy

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

Subject: Part 21 Communication: Circuit Breaker Replacement Primary Bushings Not Tested to ANSI Standards

This letter provides information concerning replacement primary bushings used in Magne-Blast circuit breakers. The replacement primary bushings were provided by GE Supply PSC, Sharon Hills, PA, and supplied to 2 licensees by GE Energy - Nuclear (GE) as safety related components. Since additional licensees may have obtained these devices through other dedicating entities, we cannot assure ourselves that all end-users have been notified. We are therefore providing this information to the NRC for appropriate action.

Summary

GE has determined that design tests in accordance with certain ANSI C37 Industry Standards for Switchgear were not performed prior to implementation of bushing design changes for Parts Q0845D0123G001, and Q0845D0124G001 and G003, which have been delivered to Peach Bottom 2,3 and Watts Bar 1 for use as replacement primary bushings in Magne-Blast circuit breakers. The design changes in question are: 1) change the insulation material used in the primary bushing, and 2) changes in the primary bushing fabrication process. When the design changes were made, they were judged to be acceptable based on similarity to the existing designs plus mechanical testing. However, GE has discovered that the required testing in accordance with ANSI C37 was not performed when the design changes were made. Testing to ANSI C37 is being performed, but the test program has not been completed. The testing program will be complete and GE will report the results by October 18, 2005.

GE has evaluated this condition under 10CFR Part 21 and concluded that it is not a reportable condition. Based on completed similarity analysis and mechanical testing, GE recommends that (1) any of these parts that are in operation do not need to be replaced or removed from service pending completion of the ANSI C37 testing, and (2)

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any of these parts in inventory should not be installed until it is confirmed that they meet the ANSI C37 test requirements.

Background

While investigating the dedication process of a different circuit breaker component, it was discovered that ANSI testing had not been accomplished for the AM breaker primary bushings identified above.

The front and rear primary bushings are the main circuit elements that connect the Magne-Blast medium voltage circuit breaker to the switchgear line bus and load bus. Previously, the GE product department produced Magne-Blast circuit breakers and its switchgear that was qualified to the appropriate ANSI C37 standards. When the GE Breaker Plant Operation facility was closed, GE contracted with a vendor to manufacture primary bushings. The contractor uses a similar but not identical insulating material and has variations in the manufacturing process for the bushing construction. GE dedication specifications addressed the replacement insulation material, but not the variation in the manufacturing process, and an implicit assumption in the GE dedication specification was that testing in compliance with the applicable ANSI standard had been completed.

The current design for the Magne-Blast circuit breaker primary bushing was evaluated against the original GE design as part of the dedication specification process. The bushing was evaluated for form, fit, function, material and process and found to be a satisfactory replacement for the original. Factory production tests (Hi-Pot, Power Factor, Corona, and Impulse) are performed for bushings provided by the contracted vendor. The contracted vendor successfully uses the same material and manufacturing processes when producing other primary bushings for the power industry. GE does not find any evidence that there has been a problem with the performance of these bushings. From this review, GE is confident that the primary bushing identified above, provided as a replacement part for use in Magne-Blast circuit breakers, will perform its intended design function. However, to meet the requirements for use of these primary bushings in nuclear safety related applications, ANSI testing to qualify the bushing for use in Mage-Blast must be accomplished.

Safety Basis

GE provided the primary bushings identified above for use in nuclear safety related applications and it is necessary for these bushing to meet applicable standards, However, there has been no indication that there is a deviation in circuit breaker performance that could produce a substantial safety hazard or contribute to exceeding a Technical Specification Safety Limit. GE believes that it is not necessary to replace breakers with the identified primary bushings that are currently in service pending completion of the required testing; GE fully expects the testing to demonstrate that the identified primary bushings meet the applicable ANSI standards. However, it would not be prudent to place a breaker from inventory into service that contains an identified primary bushing until it is demonstrated that the primary bushing meets the applicable standards.

Corrective/Preventive Actions

Based on the completed similarity analysis, mechanical testing, and the current evaluation, GE is confident that the delivered Magne-Blast primary bushing design is sound and that they will function as required in the circuit breaker and switchgear. No action need be taken by the affected licensees pending completion of the ANSI C37 testing. GE commits to complete the testing and report the results by October 18, 2005.

Recommendations

1. For primary bushings purchased under the identified purchase orders and placed in inventory, GE recommends that the primary bushings in inventory should not be installed until after successful completion of the ANSI standards testing.

2. For primary bushings purchased under the identified purchase orders and installed in Magne-Blast circuit breakers, GE recommends that no corrective or preventive action should be taken at this time pending completion of the ANSI standards testing.

If you have any questions, please call me at (910) 675-6608.

Sincerely,

Jason Post

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