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To:  
From: Nuclear Logistics Incorporated  
Subject: Initial 10CFR part 21 Notification , F10 Series MCC Cubicle stab alignment - Ref: P21-10042019-1

**Message:**

NRC Document Control,  
I have submitted an initial written notification per 10CFR part 21.21

Regards,

**Tracy Bolt**  
Director of Quality Assurance

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Date: October 4, 2019

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555  
Fax Number (301) 816-5151

Part 21 Report No: P21-10042019-1, Rev. 0

**Subject: Initial Notification of Report of potential 10CFR Part 21, F10 Series MCC cubicle Connection Stab Alignment**

Pursuant to 10CFR 21.21 (b) and (d) (3) (i)(ii), AZZ Nuclear is providing Initial written notification of the identification of a failure to comply.

Susquehanna identified a deviation with a phase to phase to ground short that was caused by misalignment of the cubicle stabs when racking in the cubicle. The cubicle was racked into the cell and 2 of the 3 phase stab finger engaged properly with the bus. The A phase stab fingers missed the center of the bus, however an electrical connection was maintained. This condition was estimated to be present for 3 years before the failure occurred. The deviation was originally evaluated as an installation issue, however after further evaluation, the deviation has been determined to be a failure to comply with the specification requirements.

The specification requirements were reviewed and was determined that the design of the connection stabs did not fully comply with the requirements. The specification, required the application of "self-aligning stab in type" power connections. The stab design that was utilized for this series of MCC is designed to successfully line up to the bus in the MCC section however the stabs are not "self-aligning" and when being racked onto the bus should be performed by intentionally starting the connection with at least one of the stabs in direct contact with the bus before trying to complete the insertion activity. This is contrary to the expectation of a "self-aligning" stab. Therefore, when not properly installed, anywhere from 1-3 stab fingers has the potential to miss proper engagement to the MCC bus. The stabs are designed such that the stab fingers are the same distance apart as the MCC bus, and can be installed properly however are not in accordance with the specification requirements. At the time the design was created to meet the specification requirements it was not known that the stab design chosen did not meet the "self-alignment" criteria.

The reported deviation will complete an electrical connection between the stab finger assembly and the bus, but at a possible reduced current carrying ability as only 1 side of the stab finger assembly is touching the bus. This causes less surface area contact between the stab finger and the bus, which causes less current carrying ability. The cubicle will likely function, however over time, if left uncorrected, it is possible that the connection could overheat, depending on the load of the cubicle, since the connection has a reduced surface area and/or has a higher resistance than what would be typical if the stab finger assembly was properly engaged.



The issue could extend to all F10 series MCC cubicles supplied by NLI with the current design of stab assembly P/N: 5600-SA3-1. This design has been provided to Susquehanna Station, Limerick Generating Station and Perry Nuclear.

NLI is in the process of developing a design enhancement for the currently installed F10 series MCC cubicles. The enhancement will be capable of being installed without the removal of the stab assembly from the cubicle. Once the enhancement is installed, it will meet the "self-aligning" attribute that is required in the specification.

For new equipment supply, the stab assembly is in the process of being redesigned to have the self-aligning feature integral to the design of the stab base.

The following information is required per 10CFR 21.21 (d) (4).

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

Tracy Bolt, Director of Quality Assurance  
AZZ Nuclear  
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Please contact me with any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Tracy Bolt".

Tracy Bolt  
Director of Quality Assurance

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