



Date: 3/31/2023

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

**10CFR Part 21 Final Notification: P21-03032023 FN, Rev. 0**

**Subject: Defect identified in Automatic Transfer Switch PN: NLI-ATS480A400X1**

Pursuant to 10CFR 21.21, Paragon Energy Solutions, LLC is providing written notification of the identification of a defect.

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

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

Richard Knott, Vice President Quality Assurance  
Paragon Energy Solutions, LLC  
7410 Pebble Drive  
Ft. Worth, TX 76118

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

- a. Talen Energy - Susquehanna
- b. Automatic Transfer Switch PN: NLI-ATS480A400X1

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

- a. Paragon Energy Solutions LLC.  
7410 Pebble Drive, Fort Worth Texas 76118

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7410 Pebble Drive • Fort Worth, Texas • 76118  
817-284-0077 • Fax 817-590-0484

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

- a. From the initial report, the subject Automatic Transfer Switches contain Mar-Bal bus insulators PN: 1100-A1 (item #10 on drawing 071-351029663-BM-1). Based on Paragon testing performed, the insulators may have developed stress cracking due to over tightening of mounting hardware containing pan head screws and lock washers during the assembly process which was not detected by inspection at Paragon. The initial Paragon Engineering evaluation concluded the potential for stress cracks in multiple insulators installed in each transfer switch assembly could degrade the structural integrity of the automatic transfer switch, preventing its ability withstand seismic conditions. Structural failure could prevent the transfer switch from shifting to the alternate source when required which could potentially cause a substantial safety hazard if left uncorrected.
- b. Since the initial report, Paragon has coordinated with Talen Energy and conducted additional seismic testing of the ATS switch specimen. Paragon installed un-aged, cracked insulators into the test specimen bounding the postulated worst case condition. The specimen was then subjected to seismic testing using the Talen provided response spectra with appropriate margin. The specimen maintained structural integrity throughout the test program. The test report documenting the additional testing was provided to Talen. Based on the acceptability of the original qualification test on the specimen and the additional testing demonstrating the structural integrity was maintained with the postulated worst case condition, there is reasonable assurance the transfer switches supplied will continue to perform their safety function until such time Talen can establish the necessary conditions to inspect for and replace any deficient insulators.

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

- a. Date Part 21 Reportability Determined: 3/2/2023

**(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.**

- a. Only one customer is affected by this issue (Talen Energy-Susquehanna PO# 00659843 Rev 4 / Paragon Project 351029663).
- b. Serial numbers of the potentially effected units (QTY 4): 351029663-1 through 351029663-4

**(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.**

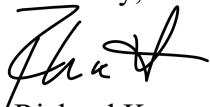
- a. Paragon has revised our assembly process instructions and trained our technicians and inspectors to require use of torque tools and the appropriate torque values for tightening hardware stack-ups when using lock washers. Typical practice had varied for “achieving full compression of the lock washer” as specified on the applicable design drawing resulting in some installations being tightened to full compression plus as much as a quarter turn. This additional torquing beyond full compression of the lock washer has the potential to cause damage/cracking of non-metallic parts in the stack up such as the phenolic insulators in this case.
- b. Paragon has provided adequate quantity of spare insulators to Talen to replace as required.

**(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.**

Paragon recommends inspection of the 4 automatic transfer switches supplied to Talen Susquehanna for insulator cracking at the next regularly scheduled maintenance period and replacement of any insulators found to exhibit stress cracking.

Please contact me with any questions or comments.

Sincerely,



Richard Knott

Vice President Quality Assurance

Paragon Energy Solutions

817-284-0077

rknott@paragones.com