Paragon
ENERGY SOLUTIONS

November 27, 2017

Document Control Center
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: 10CFR Part 21 Final Report

Pursuant to 10CFR 21.21(a)(2), Paragon ES is providing a final report of a potential defect of a Paragon Energy Solutions provided switch assembly with an OT-2 Homewood Products Corp. switch and contact blocks. The switch assembly is identified by TVA assigned Part Number OT2-45B640-251. The enclosure to this letter provides updated information.

If you have any questions or need additional information regarding this matter, please contact Ray Chalifoux at (865) 384-0124.

Sincerely,

RA Chalifoux

Ray Chalifoux
Vice President QA, Paragon ES

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Final Report: Accession No. ML17311A904 (Log Number 2017-47-00) Interim Report

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

Ray Chalifoux
Paragon Energy Solutions
777 Emory Valley Rd.
Oak Ridge, TN 37830

(ii) Identification of the basic component supplied that contains a potential defect.

PART NUMBER; OT2-45B640-251
SWITCH, MANUAL, QA 1, CONTROL, 3, 22 PIN, OT-2 SWITCH, WITH OT2V6W OPERATOR & CAM NO. 6, OPEN OR CLOSE · A AUTO · OPEN POSITIONS, SPRING RETURN TO CENTER (NOR), MOUNTED IN WESTINGHOUSE OR EQUAL MO2 MODULE, CONFIGURED PER TVA DWG 2-45B640-251 (CIHS-063-0073A TO BE CLOSE · A AUTO ·OPEN.

(iii) Identification of the firm supplying the basic component which fails to comply or contains a potential defect:

Paragon Energy Solutions (formerly ATC Nuclear)
777 Emory Valley Rd.
Oak Ridge, TN 37830

(iv) Nature of the potential defect.

The licensee has concluded that the contact chatter anomalous condition did not present a substantial safety hazard for the installed switch.

Previous Interim Report Information

Seismic qualification testing revealed contact block (CB) chatter > 2 milliseconds (msec) contrary to the acceptance requirements of the seismic test procedure developed for the activity. This switch has not been provided to the customer, however, a second suspect switch with a similar configuration and parts is installed in the customer's facility.

The condition is isolated to when OT2A CBs are configured in an alternating Normally Open (NO) / Normally Closed (NC), NC/NO, NO/NC, and NC/NO. The CBs do not exhibit chatter when 3 or less CBs are configured this way. Also, the chatter is not exhibited when configured in a NO/NC, NO/NC, continuing configuration. When the fourth CB is added to the switch assembly in an alternating configuration is when the contact chatter exceeds > 2 msec.

Paragon Engineering requested TVA Engineering to provide a reduced spectra specific to the installed location for further evaluation. Paragon Engineering was not able to complete this activity within the 60-day period specified under 10 CFR Part 21.

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

This is an update to an Interim Report that has been resolved by the licensee.

(vi) Suspect basic component, 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 total of (1) assembly as identified below has been provided.

TVA PO	Facility	Line Item	Job No.	Item ID	Part No.	Qty
1184674	Watts Bar 2	1	15T2245	CQA801B	OT2-45B640-251	1

(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.

Paragon ES successfully completed qualification of a seismic specimen to the originally provided spectra using older vintage contact blocks. A reduced response spectra was requested from the licensee to verify that this condition did not present a substantial safety hazard for the existing installed switch.

The licensee alternatively completed an evaluation of the condition and determined a substantial safety hazard did not exist.

(viii) Any advice related to the potential 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.

Differences exist in the contact blocks that were procured from Homewood for the switch assemblies. It appears the OT2 contact blocks have undergone a change in the past few years. This was found when the current (newer) contact blocks were disassembled and compared piece-by-piece to older contact blocks (2010 vintage). There are no differences between the 2 blocks visually, but there is a difference in spring force and a difference in weight of the plunger. The newer contact blocks have a slightly weaker spring force and a heavier plunger weight than the older contact blocks. These two differences have a combined effect in making the newer contact blocks more susceptible to chatter. When the OEM was contacted about these differences, they communicated there had been no design changes.