



Date: 8/25/2023

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

10CFR Part 21 Final Notification: P21-08032023-FN, Rev. 0

Subject: Defect with Eaton/Cutler Hammer Size 4 and 5 Freedom Series Contactors Modified by Paragon with Special Coils and/or with RTV to Improve the Securing of Shading Coils

Pursuant to §10CFR 21.21 (d)(3)(ii), Paragon Energy Solutions, LLC is providing this final notification of a potential defect with Eaton/Cutler Hammer Size 4 and 5 Freedom Series Contactors that have been modified to include either a special coil and/or to improve the securing of shading coils. These contactors may have been supplied integral to a motor control center (MCC) cubicle or as spare parts. This condition, if left uncorrected, could potentially cause a substantial safety hazard.

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.

Eaton/Cutler Hammer Size 4 and 5 contactors with base part numbers including:

Size 4:
CN15NN3, AN16NN0

Size 5:
CN15SN3, AN16SN0

These effected full part numbers will have the Prefix of “NLI” and suffixes including “MOD”, “M”,

or “MOD-M.” See attached list.

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

Components were originally supplied by:

Nuclear Logistics, LLC or Paragon Energy Solutions, LLC
7410 Pebble Drive, Fort Worth Texas 76118

(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.

Paragon completed the final evaluation of a failure of a Size 4 Freedom Series contactor (PN: NLI-CN15NN3A-T16-MOD-M) supplied to Perry Nuclear Power Plant. The reported failure occurred 26 days following installation into its associated MCC Cubicle. Perry identified the screws holding the contact bar to the push bars had fallen out and were laying in the bottom of the molded base. This allowed the movable contact bar to sit on the stationary contacts and significantly degrade due to arcing and then fail in the energized position. This condition could prevent the contactor from performing its safety function to either energize or de-energize the attached load.

The loose hardware is most likely a workmanship error since the contactor must be disassembled to complete the special coil and RTV modifications to the shading coils. In the fully re-assembled condition, inspection of this hardware for tightness is not possible.

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

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(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.

See attached list for items previously supplied.

(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.

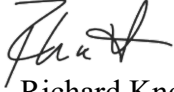
1. Paragon Electrical Engineering revised the test inspection procedure directing the modification of these contactors to install special coils and improve the shading coil retention to specify appropriate inspection steps to ensure hardware tightness during contactor reassembly. **COMPLETE**
2. All projects containing these items currently being worked at Paragon have been identified, and appropriate inspections have been completed or assembly travelers have been updated to ensure the latest procedure issued per action 1 above is used for modification. **COMPLETE**
3. Paragon Vice President of Engineering has restricted use of test inspection procedures issued prior to 8/2/2023 until a formal review is completed that verifies appropriate technical content and inspection steps are specified. Should these reviews find issues, the document will either be retired, and a new procedure issued, or the document may be revised to include the required instructions. **COMPLETE**
4. Paragon Electrical Engineering has issued a Technical Bulletin (TB-Starter-2023-01 Rev 0) which provides detailed instructions for clients included in the attached listing to utilize to inspect for the noted condition. **COMPLETE**

(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.

This is the first operational failure in this manner reported to Paragon. Paragon considers this condition is most likely not present in units that have been installed and operating for significant periods of time. It is likely routine surveillance or preventive maintenance activities would have identified this condition. Paragon recommends affected licensees, listed in the attached table, perform the steps contained in Technical Bulletin TB-Starter-2023-01 Rev 0 to verify this condition is not present as part of their next routine maintenance outage associated with the affected in use equipment, and at the earliest opportunity for stock spares.

Any questions or concerns related to this issue can be directed to me at the contact information below.

Sincerely,



Richard Knott
Vice President Quality Assurance
Paragon Energy Solutions LLC
817-284-0077
rknot@paragones.com

cc: Douglas VanTassell - CEO
Daniel Dale – COO

Plant Name	Customer PO Number	Part Number	Serial Number(s)
Energy Harbor - Perry Nuclear Power Plant	45671097	NLI-CN15NN3A-T16-MOD-M	012739-02-00001 thru -00005
Energy Harbor - Perry Nuclear Power Plant	45677159	NLI-CN15NN3A-T16-MOD-M	016168-01-00001 thru -00004
Energy Harbor - Perry Nuclear Power Plant	45655916	NLI-CN15NN3A-T16-MOD-M	003630-01-00001 thru -00005 003630-02-00002 and -00003
Energy Harbor - Perry Nuclear Power Plant	45655916	NLI-CN15NN3A-T16-MOD-M	006077-01-00002
Dominion Energy - North Anna	4500639059	NLI-CN15NN3A-MOD-M	002427-01-00001 thru -00004
Dominion Energy - North Anna	4500597117	NLI-CN15NN3A-MOD-M	108645-02-00001 thru -00004
Dominion Energy - North Anna	70370116	NLI-CN15NN3A-MOD-M	108720-02-00001 thru -00003
Energy Harbor - Perry Nuclear Power Plant	45536394	NLI-CN15NN3A-T16-MOD-M	96080-001-00001 thru -00004
FP&L - Turkey Point	2449459	NLI-AN16NN0A-MOD-M	87833K2-01-0002
FP&L - Turkey Point	2439558	NLI-AN16NN0A-MOD-M	014190-01-00001
Duke - Harris	3141335 Line 0002	NLI-AN16NN0A-T16-MOD	010651-02-00001 and -00002
Duke - Harris	03137359 Line 0003	NLI-AN16NN0A-T16-MOD	011669-01-00001
Dominion Energy - North Anna	4500502779	NLI-AN16NN0A-MOD-M	100603-01-00001 and -00002
FP&L - Turkey Point	2384743	NLI-AN16NN0A-MOD-M	97816-010-00001
FP&L - Turkey Point	2387804	NLI-AN16NN0A-MOD-M	98136-001-00001
Dominion Energy - North Anna	4500357157	NLI-AN16NN0A-MOD-M	84443-003-00001 thru -00005
Duke - Harris	3026166	NLI-AN16NN0A-T16-MOD	78083-001-00003 and -00004
Duke - Harris	3026166	NLI-AN16NN0A-T16-MOD	78083-001-00001
Duke - Harris	3026166	NLI-AN16NN0A-T16-MOD	84724-001-00001
Dominion Energy - North Anna	4500326973	NLI-AN16NN0A-MOD	80429-002-00001
Dominion Energy - North Anna	70312551	NLI-AN16NN0A-MOD	351020827-ST8-1
FP&L - Turkey Point	2350487	NLI-AN16NN0A-MOD	76176-002-00001
Dominion Energy - North Anna	70381436	NLI-AN16NN0A-MOD-M	005195-04-00007

Dominion Energy - North Anna	70381436	NLI-AN16NN0A-MOD-M	005195-04-00001, -00003 and -00006
Duke - Harris	3131229	CN15SN3A-T16-MOD	010856-01-00001
Duke - Harris	3155631	NLI-AN16SN0AB-T16-MOD	018463-01-00001 thru -00003
Duke - Harris	3138555	NLI-AN16SN0AB-T16-MOD	012541-01-00001 thru -00003