Tyco Electronics

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**CII Relays**
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**Date:** **21 November 2008**

**To:** **Operation Center**
**United States Nuclear Regulatory Commission (NRC)**
**Fax: (301)816-5151**

**Subject:** **Tyco Electronics – Part 21 Transfer of Information = CII-012**

The intent of this letter is to inform the NRC of an issue noted with a Tyco Electronics relay.

Florida Power and Light reported that during normal operation, one nuclear relay, E7024PB004, S/N 08130081 failed to actuate. FPL then conducted a 100 hour bench test of the unit and confirmed an intermittent condition in the timing of this off-delay relay. The relay was returned to Tyco Electronics for a failure analysis. On 9/29/08, it was determined that an incorrect recycle spring was placed into this relay. A fresh built unit with this incorrect spring did indicate erratic performance similar to that shown on the subject relay. The issue of the use of an incorrect spring appears to be limited to one batch of springs.

The incorrect spring is identical to the correct spring with the exception of the free length. The correct spring, 1471161-1 has a nominal free length of 1.353 inches. The incorrect spring, 1471160-1, has a nominal free length of 1.115 inches. Further investigation internally and at the spring supplier indicated no further mixing of the 2 spring types in the stock locations.

This report serves to document our evaluation and the corrective action taken on this issue:

1. The spring in question is used solely on the E7024 style 4 pole off-delay relays. This issue cannot affect any other E7000 style relays.

2. No other customer returns of E7024-style 4 pole off-delay relays have been found to contain the incorrect recycle spring.

3. For the corrective action, a go/no-go gauge has been developed for use in the production line to verify the free length of the recycle spring prior to installation. The gauge will be used on each spring until we can develop a method to color code the two springs.

Based on our evaluation we believe this to be a one time manufacturing anomaly. Although as a precaution, we will notify the customers to return possibly affected relays. Therefore customers having received the recall notification should return affected relays for evaluation and possible rework. Based on the corrective action taken, no further action is required. Tyco considers this matter resolved.

If you have any questions on this condition of the evaluation and corrective action, please contact me at the number listed above.

Sincerely,

Scott Daubert

Scott Daubert
Quality Assurance Manager



IE19
NRR

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**Attachment 1**
**Customers Notified by Tyco Electronics regarding this condition.**

| Customer | Location | | Quantity |
|---|---|---|---|
| Alabama Power Co. | Farley Nuclear | | 2 |
| Amergen Energy | Oyster Creek | | 3 |
| Amergen Energy | Oyster Creek | | 2 |
| DTE Energy/Detroit Ed | Enrico Fermi | | 2 |
| Entergy | Waterford 3 | | 7 |
| Exelon Business | Limerick | | 2 |
| Exelon/Peach Bottom | Peach Bottom | | 3 |
| FPL | Turkey Point | | 4 |
| FPL | Turkey Point | | 4 |
| FPL | Turkey Point | | 1 |
| Progress Energy (Harris) | New Hill | | 1 |
| TVA | Brown's Ferry | | 1 |
| TVA | Brown's Ferry | | 2 |
| Tyco Elec. HK LTD | Lowloon Bay | | 4 |
| Tyco Elec. HK LTD | Lowloon Bay | | 2 |
| | | **Total** | **40** |



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**Attachment 2**
**Transfer of Information per Part 21.21 (b)**

(i) Name and address of the individual providing the information:

Scott Daubert, Quality Assurance Manager, Tyco Electronics – CII of the Global Aerospace Defense and Marine Division, 1396 Charlotte Highway, Fairview, NC USA 28730.

(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity that contains a deviation or failure to comply;

Item supplied are E7024 relays with serial numbers beginning with 0808 through 0835. Certificates of Conformance stating exact relay description and serial numbers will be sent to affected customers with notification by December 16, 2008.

Tyco sold this safety-related item for specified and unspecified applications. The customers for which Tyco had insufficient information to complete the Part 21 evaluation are listed in Attachment 1.

(iii) Identification of the firm constructing the facility or supplying the basic component that contains a deviation or a failure to comply:

Tyco Electronics, 1396 Charlotte Highway, Fairview NC, USA 28730

(iv) Nature of the defect or safety hazard that could be created by such a deviation or failure to comply:

If an incorrect recycle spring is place into the relay, the off-delay timing could ber longer than desired.

(v) The date on which the information of such a deviation or failure to comply was obtained"

Tyco Electronics made the determination of the existence of this condition in September 2008. Notice of Limited E7000 Relay Recall will be issued to the customers by 16 December 2008.

(vi) In case of a basic component, which contains a deviation or failure to comply, the locations of all such components in use or being supplied?

Customers that purchased affected safety-related items from Tyco Electronics for unspecified applications are identified in Attachment 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 (note, these are actions specifically associated with the identified deviation or failure to comply:

The lot of springs in question have been used. No further defects have been found within current stock. A go/no-go gauge has been developed for use in the production line to verify the free length of the recycle spring prior to installation. This will be completed on each spring until we can develop a method to color code the two springs.

(vii) Any advice related to the deviation or failure to comply about the facility, activity, or basic component that has been, is being given to purchasers or licensees:

Based on our evaluation this issue is expected to have a low potential to produce a significant safety concern. However, Tyco Electronics does not have sufficient information to perform an evaluation for unspecified applications. Therefore customers receiving the recall notification should return affected relays for inspection and rework.



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