

General Information or Other (PAR)

Event # 42021

Rep Org: WYLE LABORATORIES Supplier: BUSSMANN	Notification Date / Time: 09/27/2005 17:39 (EDT) Event Date / Time: 09/23/2005 (CDT) Last Modification: 09/27/2005
Region: 1 City: HUNTSVILLE County: State: AL	Docket #: Agreement State: Yes License #:
NRC Notified by: BRUCE BATEMAN HQ Ops Officer: BILL GOTT Emergency Class: NON EMERGENCY 10 CFR Section: 21.21            UNSPECIFIED PARAGRAPH	Notifications: CHRISTOPHER CAHILL R1 CHARLIE PAYNE R2 DAVID HILLS R3 BLAIR SPITZBERG R4 TABATABAI (faxed) NRR

## MATERIAL DEFECT REPORT

The licensee provided the following information via facsimile:

"Pursuant to 10 CFR Part 21, this letter notifies the NRC of the existence of a possible defect in Bussmann KWN-R fuses.

"The defect is a poor solder connection of the fuse link assembly to the rejection ferrule. The defect applies potentially to all KWN-R fuses.

"An evaluation was performed and determined that this defect can create a substantial safety hazard or contribute to circumstances that would exceed safety limits as defined in the technical specifications of a license issued pursuant to 10CFR50. Safety-related circuits that include fuses with this defect may not be able to perform their safety-related function as required during a design basis event. Therefore, this potential defect is reportable per 10 CFR Part 21.

## "DESCRIPTION OF ANOMALY:

The customer reports that the fuse lost electrical continuity while in service. The customer cut the fuse open and found the fuse element intact and a lack of electrical continuity across the soldered connection of the element to the rejection ferrule of the fuse. According to the customer, the fuse had been in service since 3/31/05 carrying 2 - 3 amperes, and there were no overcurrent events which caused the fuse to open.

## "DISPOSITION - COMMENTS - RECOMMENDATIONS:

The customer returned the fuse to Wyle for failure analysis. Wyle forwarded the fuse to the manufacturer for evaluation. The manufacturer found a poor solder connection on the rejection cap. Apparently the cap did not get hot enough to reflow solder during the manufacturing process. The manufacturer stated the issue could be isolated to this particular fuse due to placing it in an incorrect bin, but the issue may extend to other fuses due to a process problem. Based on the evaluation, a potential defect exists in other KWN-R fuses.

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General Information or Other (PAR)

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"As a screening test to ensure a good soldered connection, the manufacturer recommends performing a Current Carrying Capacity Test for 30 minutes at 110% of rated current after warm up at 100% of rated current.

"This anomaly impacts qualification of KWN-R fuses. Only KWN-R fuses that pass the 110% Current Carrying Capacity Test are qualified."

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September 27, 2005

**Document Control Desk**  
U.S. Nuclear Regulatory Commission (NRC)  
Washington, DC 20555

**Subject: Potential Part 21 on Bussmann KWN-R**

Pursuant to 10 CFR Part 21, this letter notifies the NRC of the existence of a possible defect in Bussmann KWN-R fuses.

The defect is a poor solder connection of the fuse link assembly to the rejection ferrule. Details of the defect are provided in the attached Notice of Anomaly No. 1 Rev. A under Wyle Job No. 50976. The defect applies potentially to all KWN-R fuses.

An evaluation was performed and determined that this defect can create a substantial safety hazard or contribute to circumstances that would exceed safety limits as defined in the technical specifications of a license issued pursuant to 10CFR50. Safety-related circuits that include fuses with this defect may not be able to perform their safety-related function as required during a design basis event. Therefore, this potential defect is reportable per 10 CFR Part 21.

Should you have any questions, feel free to contact me (256) 837-4411, Ext. 271, by facsimile at (256) 837-5216, or email to [bruce.bateman@wylelabs.com](mailto:bruce.bateman@wylelabs.com).

Respectfully,

**WYLE LABORATORIES, INC.**  
Eastern Test, Engineering, & Research

A handwritten signature in black ink that reads "R. Bruce Bateman". The signature is written in a cursive style with a large, prominent "R" and "B".

R. Bruce Bateman  
Director, Contracts and Purchasing

Attachment: as stated



(Eastern Operations)

**ORIGINAL**

**NOTICE OF ANOMALY**

DATE: September 23, 2005

NOTICE NO: 1 Rev. A P.O. NUMBER: PS04-10320 CONTRACT NO: N/A  
 CUSTOMER: Entergy Pilgrim WYLE JOB NO: 50976  
 NOTIFICATION MADE TO: Reilly Schum NOTIFICATION DATE: August 8, 2005  
 NOTIFICATION MADE BY: Mahesh Dave/Ed Almeida VIA: telephone

CATEGORY:  SPECIMEN  PROCEDURE  TEST EQUIPMENT DATE OF ANOMALY: August 4, 2005  
 PART NAME: Bussmann KWN-R-10 Fuse PART NO.: KWN-R-10  
 I.D. NO.: 50976KWNR10FUSxxx (date code L05) TEST: n/a  
 SPECIFICATION: Customer P.O. PS04-10320 PARA. NO.: Note to vendor No. 2

**REQUIREMENTS:**

No cold solder joint is to exist inside the fuse at either end.

**DESCRIPTION OF ANOMALY:**

The customer reports that the fuse lost electrical continuity while in service. The customer cut the fuse open and found the fuse element intact and a lack of electrical continuity across the soldered connection of the element to the rejection ferrule of the fuse. According to the customer, the fuse had been in service since 3/31/05 carrying 2-3 amperes, and there were no overcurrent events which caused the fuse to open.

**DISPOSITION • COMMENTS • RECOMMENDATIONS:**

The customer returned the fuse to Wyle for failure analysis. Wyle forwarded the fuse to the manufacturer for evaluation. The manufacturer found a poor solder connection on the rejection cap. Apparently the cap did not get hot enough to reflow solder during the manufacturing process. The manufacturer stated the issue could be isolated to this particular fuse due to placing it in an incorrect bin, but the issue may extend to other fuses due to a process problem. Based on the evaluation, a potential defect exists in other KWN-R fuses.

As a screening test to ensure a good soldered connection, the manufacturer recommends performing a Current-Carrying Capacity Test for 30 minutes at 110% of rated current after warm up at 100% of rated current.

This anomaly impacts qualification of KWN-R fuses. Only KWN-R fuses that pass the 110% Current Carrying Capacity Test are qualified.

Note: This revision changes the disposition, comments, and recommendations in its entirety to include the evaluation results.

RESPONSIBILITY TO ANALYZE ANOMALIES AND COMPLY WITH 10 CFR PART 21:  CUSTOMER  WYLE

VERIFICATION: PROJECT ENGINEER: Fred E Rowe 9/23/05

TEST WITNESS: N/A PROJECT MANAGER: E. Reilly Schum 9/23/05

REPRESENTING: N/A INTERDEPARTMENTAL COORDINATION: \_\_\_\_\_

QUALITY ASSURANCE: Paul Almeida 9/23/05 N/A