General Information or Other (PAR) Event # 45723

Rep Org:	UNITED CONTROLS INTERNATIONAL	**Notification Date / Time:**	02/24/2010 16:42 (EST)
Supplier:	THOMAS & BETTS	**Event Date / Time:**	04/23/2009 (EST)
		Last Modification:	02/24/2010
Region:	1	**Docket #:**	
City:	TUCKER	**Agreement State:**	Yes
County:		**License #:**	
State:	GA		
NRC Notified by:	ROBERT HALE	**Notifications:**	WAYNE SCHMIDT R1DO
HQ Ops Officer:	JOE O'HARA		PART 21 GRP EMAIL
Emergency Class:	NON EMERGENCY		
10 CFR Section:			
21.21	UNSPECIFIED PARAGRAPH		

FAULTY LOGIC BOARD FOR CYBEREX 20 KVA INVERTER MODEL AC

The following notification was received via fax:

"On or around April 23rd, 2009, PSEG Nuclear LLC at Hope Creek Nuclear Station notified United Controls International (UCI), that they had encountered a problem with a Logic Power Supply circuit board (p/n: 90-41-974313) after installing it in their safety related inverter. This circuit board was a Logic Power Supply printed circuit board used in a Cyberex 20 KVA Inverter model AC.

"Upon inspection, PSEG determined that a jumper was missing from the circuit board by comparison to the originally removed board.

"The cause of this issue was due to an incorrect bill of materials (BOM) for the circuit board at the manufacturing location.

The affected facility is the Hope Creek Nuclear Power Station. Nine boards were all shipped to PSEG at Hope Creek Nuclear Power Station.

"Corrective Actions:
"The manufacturer, Thomas & Betts, has corrected the Bill of Materials (BOM) to show the jumper installed on this circuit board. Additionally, UCI has enhanced its inspection schedule for these boards by performing a component level inspection of each board against the BOM.

"Corrective Actions to be taken:
"There are four suspect circuit boards that have been shipped to PSEG (Hope Creek Nuclear Station) that need to

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be inspected for the correct jumper. If found to be missing the jumper, then these boards need to be returned to UCI for jumper installation and retesting."

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United Controls International
5139 S. Royal Atlanta Drive
Tucker, Georgia 30084
(770) 496 1406 tel
(770) 496 1422 fax

February 24, 2010

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington D.C. 20555-0001

Subject: 10CFR21 Reporting of Defects and Non-Compliance
Thomas & Betts Printed Circuit Board P/N 90-41-974313

The enclosed report addresses a reportable notification for a Thomas & Betts Printed Circuit Board P/N 90-41-974313.

A copy of the report has been mailed to our affected nuclear customers.

Please sign below, acknowledging receipt of this report, and return a copy to at the address above or via fax to (770) 496 1422 within 10 working days after receipt.

Sincerely,

Robert B. Hale

Robert B. Hale
President

Enclosure
Report 20100224_Notification_90-41-974313, 4 pages

Received by _____ Date _____

United Controls International
5139 S. Royal Atlanta Drive
Tucker, Georgia 30084
(770) 496 1405 tel
(770) 496 1422 fax

10CFR21 REPORTING OF DEFECTS AND NON-COMPLIANCE

COMPONENT: Thomas & Betts Printed Circuit Board P/N 90-41-974313

SYSTEM: Inverter– Logic Power Supply Board

CONCLUSION: Defect reportable in accordance with 10CFR21

REPORT ID: 20100224_Notification_90-41-974313
File: 20100224_Notification_90-41-974313.doc

Reviewed By: Maina Habeeb Date: 2/24/10
Engineering

Reviewed By: Divya Pandy Date: 2/24/10
Engineering

Approved By: [signature] Date: 2/24/10
Quality Assurance

COMPONENT:

Thomas & Betts Printed Circuit Board
Thomas & Betts P/N: 90-41-974313

PURPOSE:

This report documents the installation of a faulty logic power supply board for Cyberex 20 KVA Inverter model AC.

SUMMARY:

On or around April 23rd, 2009, PSEG Nuclear LLC at Hope Creek Nuclear Station notified United Controls International (UCI), that they had encountered a problem with a Logic Power Supply circuit board (p/n: 90-41-974313) after installing it in their safety related inverter. The circuit board had been supplied by UCI under previous purchase order 4500304127. This circuit board was a Logic Power Supply printed circuit board used in a Cyberex 20 KVA Inverter model AC, which is now owned and supplied by Thomas & Betts (TNB) and manufactured by their sub-contractor, RBB Systems.

Upon inspection, PSEG determined that a jumper was missing from the circuit board by comparison to the originally removed board. Additionally a second logic power supply circuit board (not installed in the plant) was also determined to be missing the same jumper. This issue was initially evaluated by UCI in June of 2009 and determined not to be a reportable defect and an isolated event. However, after a similar issue was identified with the same manufacturer (TNB), UCI has determined that this issue should be documented as a 10CFR21 reportable defect.

The circuit board, with the missing jumper was installed in Hope Creek's safety related inverter and resulted in incorrect voltages, which prevented the inverter from being placed into service. It is therefore not likely that this board could be installed and left in the parent component, and subsequently placed into service due to post installation maintenance testing. However, if the board were to be installed, while missing the jumper, the inverter would not operate properly and would be considered inoperable.

The cause of this issue was due to an incorrect bill of materials (BOM) for the circuit board at the manufacturing location.

AFFECTED USERS:

PSEG Nuclear LLC – Hope Creek Nuclear Power Station

According to UCI records, a total of 10 Logic Power Supply circuit boards (TNB p/n 90-41-974313) were supplied by TNB to UCI. One of these boards was a sample board and remains at UCI. The other nine boards were all shipped to PSEG at Hope Creek Nuclear Power Station. The current status of these nine circuit boards is shown in table 1 below.

Table 1

Part number	UCI S/N	Comments
90-41-974313	1808-1-1	Identified by PSEG to be missing jumper. Returned to UCI in June of 2009. Jumper was installed and board was retested and returned to PSEG.
90-41-974313	2496-6-1	Identified by PSEG to be missing jumper. Returned to UCI in June of 2009. Jumper was installed and board was retested and returned to PSEG.
90-41-974313	2710-2-1	Shipped to PSEG on 3/18/08. Indeterminate as to whether jumper is installed or not at this time.
90-41-974313	3047-15-1	Shipped to PSEG on 9/30/08. Indeterminate as to whether jumper is installed or not at this time.
90-41-974313	003451-07-0001	Shipped to PSEG on 9/25/09. Verified by UCI that jumper was correctly installed on board.
90-41-974313	003451-07-0002	Shipped to PSEG on 9/25/09. Verified by UCI that jumper was correctly installed on board.
90-41-974313	003451-07-0003	Shipped to PSEG on 9/25/09. Verified by UCI that jumper was correctly installed on board.
90-41-974313	003255-02-0001	Shipped to PSEG on 5/19/09. Verified by UCI that jumper was missing on board.
90-41-974313	003255-02-0002	Shipped to PSEG on 5/19/09. Verified by UCI that jumper was missing on board.

CORRECTIVE ACTIONS

Preventive Actions Taken:
The manufacturer, Thomas & Betts, has corrected the Bill of Materials (BOM) to show the jumper installed on this circuit board. Additionally, UCI has enhanced its inspection procedure for these boards by performing a component level inspection of each board against the BOM.

Corrective Actions Taken:
Of the nine potentially affected circuit boards shown in the table above:

1. Two circuit boards have been returned to UCI by PSEG and have had the jumpers added and retested. These two were returned to PSEG.
2. Three circuit boards have been verified to have the jumper correctly installed.

Corrective Actions to be taken:

1. There are four suspect circuit boards that have been shipped to PSEG (Hope Creek Nuclear Station) that need to be inspected for the correct jumper per attachment 1. If found to be missing the jumper, then the boards need to be returned to UCI for jumper installation and retesting.

ATTACHMENTS

1. Jumper inspection procedure for Cyberex logic power supply board p/n: 90-41-974313

Attachment 1 Page 1 of 2

JUMPER INSPECTION PROCEDURE FOR
CYBEREX LOGIC POWER SUPPLY BOARD P/N: 90-41-974313

1. See figure 1 below for a picture of the Cyberex logic power supply board, p/n: 90-41-974313.
2. Inspect the board for a jumper at location "WJ". See figure 2 below.
3. If jumper at location "WJ" is missing, as shown in figure 3, then notify UCI and an RMA will be issued for the repair.

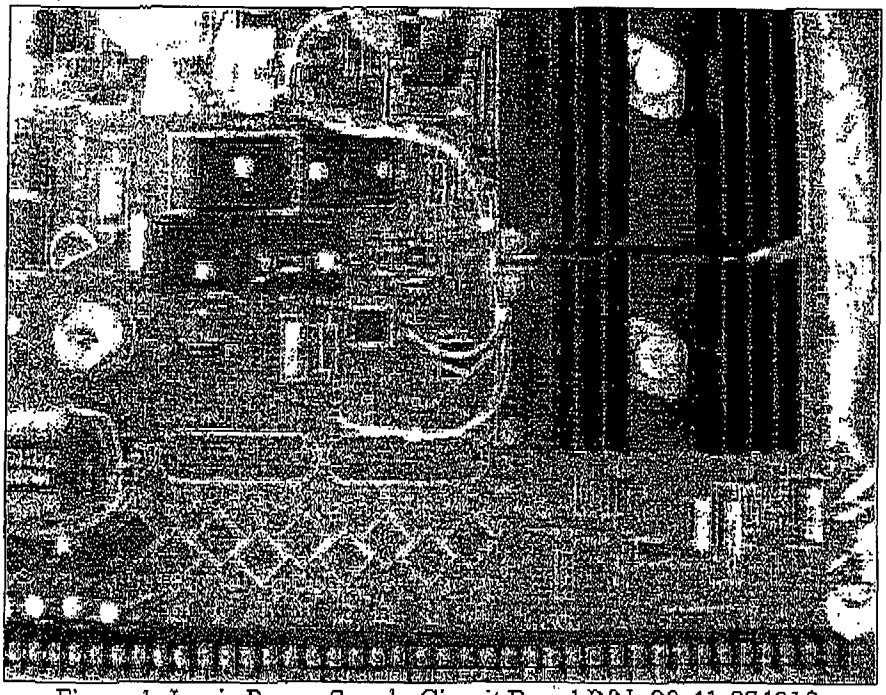

Figure 1, Logic Power Supply Circuit Board P/N: 90-41-974313

Attachment 1 Page 2 of 2
JUMPER INSPECTION PROCEDURE FOR
CYBEREX LOGIC POWER SUPPLY BOARD P/N: 90-41-974313

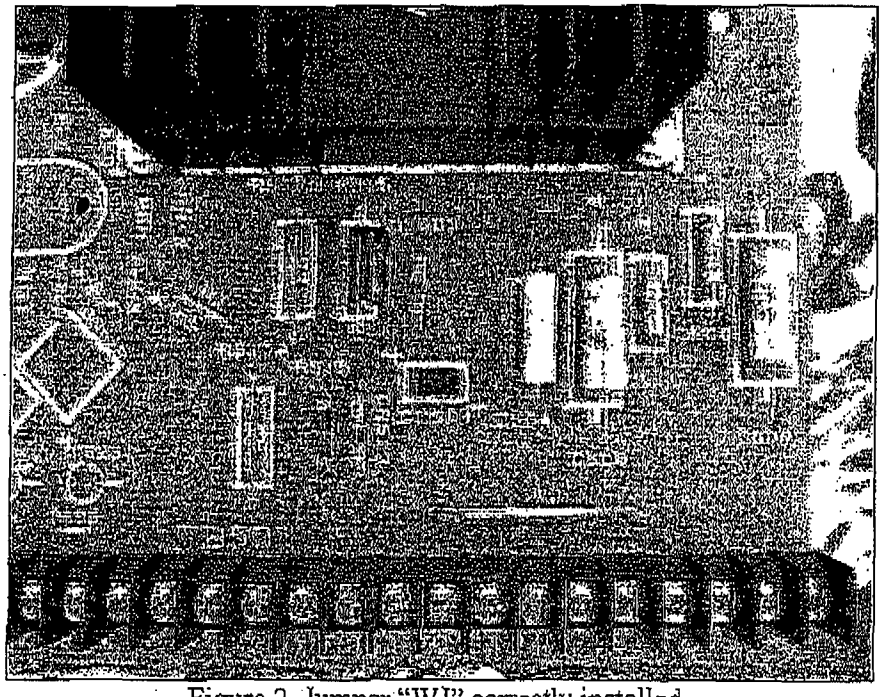

Figure 2, Jumper "WJ" correctly installed

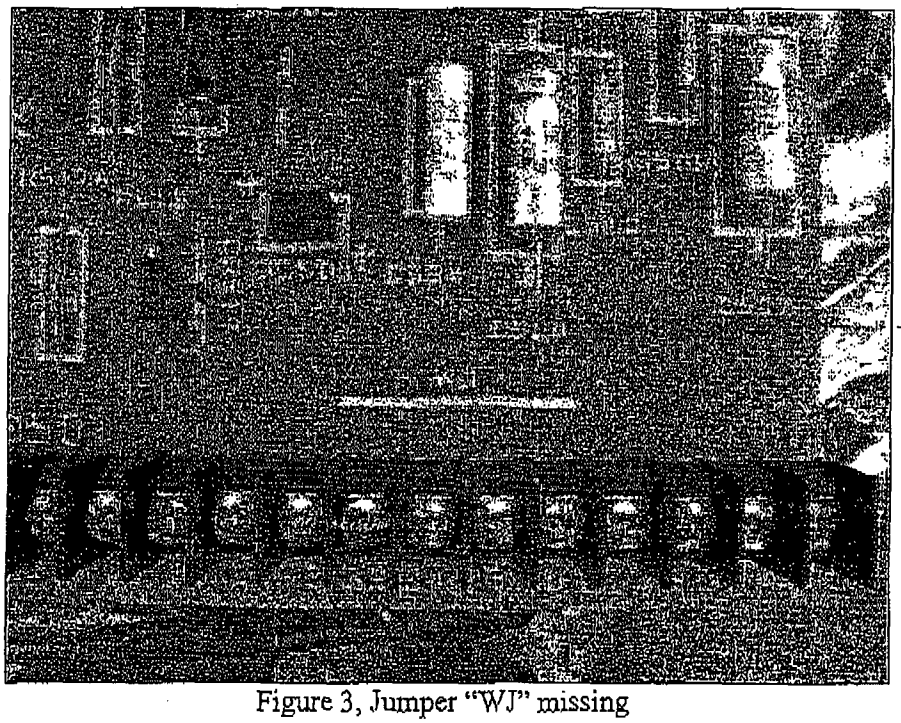

Figure 3, Jumper "WJ" missing