

General Information or Other (PAR)

Event # 40609

Rep Org: THERMO ELECTRON CORPORATION	Notification Date / Time: 03/24/2004 19:45 (EST)
Supplier: ERMO ELECTRON CORPORATION	Event Date / Time: 03/24/2004 (CST)
	Last Modification: 03/24/2004
Region: 4	Docket #:
City: HOUSTON	Agreement State: Yes
County:	License #:
State: TX	
NRC Notified by: BARRY NICHOLSON	Notifications: DAVID GRAVES R4
HQ Ops Officer: CHAUNCEY GOULD	RONALD BELLAMY R1
Emergency Class: NON EMERGENCY	JOHN MADERA R3
10 CFR Section:	VERN HODGE NRR
21.21 UNSPECIFIED PARAGRAPH	JACK FOSTER NRR

THERMO WESTRONICS MODEL 3000C AND 3200C SERIES CHART RECORDER FAILURES

It has been determined that Thermo Electron Corporation's Thermo Westronics model 3000C and 3200C chart recorders have had problems with overheating and possible fire hazard. These units have been supplied to Fermi and Indian Point.

The manufacturer has made arrangements with the customers to provide replacements for the faulty circuit board assemblies upon customer request.

IE19

THIS IS A 10CFR PART 21 NOTIFICATION

Contacts: Barry Nicholson
Director of Quality Assurance

Barry Hutchison
Manager – Services America

March 24, 2004

US Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: Thermo Westronics Model 3000C and 3200C Series Recorders

This letter is notification of an event related to a Thermo Westronics Commercial Grade Series 3000 Recorder which was reported to Thermo Electron Corporation – Houston by Detroit Edison Fermi 2 Nuclear Power Plant on February 06, 2004. The Series 3000 is a multipoint programmable chart recorder utilized in both Commercial and Nuclear Safety Related applications both domestically and internationally.

The report indicated that, on January 28, 2004, a fire occurred within the Series 3000 Recorder used for training in the simulator at the Fermi 2 site. During the event, the CB100295-01 Printhead Transition Printed Circuit Board Assembly (PCBA) overheated and failed. Three other components within the immediate proximity were also damaged including the printhead flex cable, carriage transition PCBA, and printhead carriage drive belt.

On February 13, 2004, the damaged components were returned to Thermo so that a thorough failure analysis could be performed. A visual inspection determined that the CB100295-01 PCBA had sustained significant heat damage in and around the printhead driver circuit. The three other components including the PA100113-01 Printhead, CB100303-01 Carriage Transition PCBA and the RM100232-C1 Printhead Carriage Drive Belt also appeared to have varying levels of heat damage. Based on the report from Detroit Edison and the components returned for evaluation, it is believed that the damage was isolated to these components only.

Thermo hardware engineering personnel performed a failure analysis on the components and determined that the root cause of the failure occurred on the CB100295-01 PCBA when an internal clamp diode failed and shorted. This "failed short" condition is considered an abnormal failure but, in fact, could occur when several unfavorable conditions occur simultaneously. Further evaluation determined that the possibility for this type of failure only exists on the CB100295-01 PCBA design produced in 1990 through 1991, Revision A and Revision B configurations.

A review of records for Safety Related products from 1990 through 2004 was conducted to evaluate the potential impact. The CB100295C01 Safety Related version of this PCBA was used on both the Series 3000C and Series 3200C Recorders. There are no records indicating the reported failure of a Safety Related CB100295C01 in either a Series 3000C or Series 3200C from 1990 through 2004.

Although there have been no reported failures in Safety Related applications, Thermo has elected to recommend replacement of the Revision A and Revision B design of the CB100295C01 PCBA. This action is being taken to ensure that the potential for an event such as reported by Detroit Edison Fermi 2 should be eliminated. Therefore, Thermo shall offer a replacement printhead transition PCBA to nuclear utilities that have a CB100295C01 Revision A or Revision B installed or stocked as a spare part. The replacement PCBA shall be part number CB100460C01, Printhead Transition PCBA, which replaced the CB100295C01 in 1996.

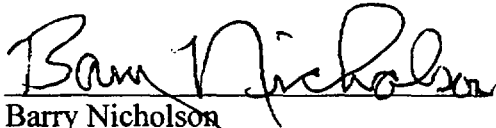
The scope of this notification includes seven (7) CB100295C01 Printed Circuit Board Assemblies (Revision A and Revision B) installed in Safety Related recorders or sold as a Safety Related spare part from 1990 through 1991. The following is a list of the Safety Related recorders and spare parts that were sold in 1990 through 1991, including Serial Number, Ship Date, Customer, Location Shipped To, and Purchase Order.

<u>Serial Number / Part Number</u>	<u>Ship Date</u>	<u>Customer</u>	<u>Shipped To</u>	<u>Purchase Order</u>
3000C1001	03/20/1991	Detroit Edison, EF2 -Site	6400 Dixie Hwy Newport, MI	NR-240614
3000C1002	03/20/1991	Detroit Edison, EF2 -Site	6400 Dixie Hwy Newport, MI	NR-240614
CB100295C01 Lot# BL90	03/20/1991	Detroit Edison, EF2 -Site	6400 Dixie Hwy Newport, MI	NR-240614
3000C1003	09/25/1992	Consolidated Edison	534 Furnace Dock Rd. Peekskill, NY	290071-001
CB100295C01 Lot# 13600	06/11/1993	Detroit Edison, EF2 -Site	6400 Dixie Hwy Newport, MI	NM277906
3200C1001	07/03/1993	Comisión Federal de Electricidad	Mexico	92-2-12660
3200C1002	07/03/1993	Comisión Federal de Electricidad	Mexico	92-2-12660

Thermo shall notify the above listed customers and make arrangements to provide replacement CB100460C01 Printhead Transition Printed Circuit Board Assemblies upon customer request. It is estimated that replacement should be completed within sixty (60) days, or as soon as Thermo has been contacted by the identified customers.

Should you have any questions regarding the above, please contact the undersigned.

Sincerely,

A handwritten signature in black ink that reads "Barry Nicholson". The signature is written in a cursive style with a large, prominent "B" and "N".

Barry Nicholson
Director of Quality Assurance

cc: Larry Quick