

# Thermo

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## THIS IS A 10CFR PART 21 NOTIFICATION

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US Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Subject: Thermo Westronics Model 2100C Series Recorders

This letter is notification of a possible defect associated with Thermo Westronics Series 2100C recorders. The Series 2100C is a DIN size programmable chart recorder utilized in control room applications of Nuclear Power Plants. The recorders in question were manufactured under the Thermo Westronics 10CFR50 Appendix B Quality Program between August 2002 and January 2003.

On or about May 30, 2003, Thermo Electron determined that a random reset anomaly could possibly occur on the Series 2100C recorder. This anomaly surfaced during the manufacture of three (3) commercial grade Series 2100 recorders. When the reset occurs, the recorder must be re-initialized to resume normal function.

The root cause of the anomaly has been traced to a timing issue between the CPU Printed Circuit Board Assembly (PCBA) and the Memory Module. A 27C256 EPROM, used as a decoder on the Memory Module, has changed manufacturers several times during the life of this product. The EPROM as produced by the original manufacturer is no longer available.

Newer versions of this 27C256 EPROM typically function at faster speeds. The faster chip speed can cause a delay in the transition from "send" to "receive" on the CPU Module and thereby result in the reset. This reset event is random and does not occur on every recorder.

After engineering evaluation, Thermo Electron has incorporated a modification to the CPU PCBA to ensure compatibility with the faster EPROM on the Memory Module. This modification eliminates the timing delay and subsequent possibility of the reset. Future shipments of this CPU Module shall incorporate this modification.

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To ensure compatibility on previously installed recorders, the Memory Module shall only be offered as part of a kit that includes the newer version CPU PCBA.

The scope of this notification includes ten (10) Series 2100C safety related recorders, all of which were thoroughly tested and did not exhibit this reset at the time of shipment. However, since it is not possible to determine the exact manufacture date of the 27C256 EPROM used on these recorders, this notification is being issued.

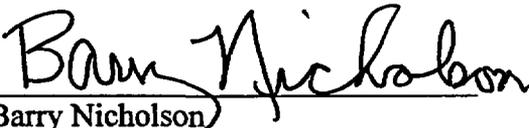
The following is a list of the safety related recorders included in the scope of this notification including Serial Number, Ship Date, Customer, Location Shipped To, and Purchase Order.

<u>Serial Number</u>	<u>Ship Date</u>	<u>Customer</u>	<u>Shipped To</u>	<u>Purchase Order</u>
2100C1824	12/04/02	Com Fed De Electricidad	Laguna Verde, Mex.	01-2-23014-CNP
2100C1827	01/08/03	Dominion Nuclear	Millstone Site	45138755 Rev. 4
2100C1828	02/19/03	Dominion Nuclear	Millstone Site	45138755 Rev. 4
2100C1829	08/16/02	Duke Power Co.	Catawba Site	NE 5462 001
2100C1830	08/16/02	Duke Power Co.	Catawba Site	NE 5462 001
2100C1831	01/25/03	Duke Power Co.	Catawba Site	NE 5462 001
2100C1832	01/25/03	Duke Power Co.	Catawba Site	NE 5462 001
2100C1833	01/28/03	Duke Power Co.	McGuire Site	NE 5703 001
2100C1834	01/28/03	Duke Power Co.	McGuire Site	NE 5703 001
2100C1835	01/28/03	Duke Power Co.	McGuire Site	NE 5703 001

Thermo Electron shall notify the above listed customers and make arrangements to implement the design modification, either by rework at the Thermo Electron – Houston facility, or by providing replacement kits to the customer site. It is estimated that rework associated with the design modification should be completed within sixty (60) days, or as soon as Thermo Electron has been contacted by the identified customers.

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

Sincerely,

  
Barry Nicholson  
Director of Quality Assurance

cc: Larry Quick