

General Information or Other (PAR)

Event # 44592

Rep Org: SCIENTECH	Notification Date / Time: 10/22/2008 14:50 (EDT)
Supplier: ENSIGN POWER SYSTEMS	Event Date / Time: 10/15/2008 (MDT)
	Last Modification: 10/22/2008
Region: 4	Docket #:
City: IDAHO FALLS	Agreement State: No
County:	License #:
State: ID	
NRC Notified by: TONY GILL	Notifications: ALAN BLAMEY R2
HQ Ops Officer: JOE O'HARA	VERN HODGE NRR
Emergency Class: NON EMERGENCY	OMID TABATABAI NRO
10 CFR Section:	JOHN THORP NRR
21.21 UNSPECIFIED PARAGRAPH	

POWER SUPPLIES MANUFACTURED WITH UNAUTHORIZED CAPACITOR DELIVERED TO H.B. ROBINSON

"On October 15, 2008, Ensign Power Systems, Inc. of Loveland, Colorado informed Scientech of a defect. An internal audit had revealed that some Model 9061-01 power supplies provided to Scientech for use in their safety related line of NUSI modules had been inadvertently manufactured with an unauthorized part.

The design required the use of two capacitors in the power line filter. When Ensign attempted to purchase the required parts, their supplier made an unauthorized substitution of capacitors. These capacitors are virtually identical, and the packaging was labeled with the correct Ensign Power Systems part number.

"Scientech immediately put a HOLD on all shipments of modules with Ensign power supplies until it could be verified that they were built using the correct parts. (Complete 10/15/08)

"Scientech located all Ensign power supplies in house and isolated them. (Complete 10/16/08)

"Scientech notified H. B. Robinson that some of the twelve modules contain power supplies with unauthorized parts. (Complete 10/16/08)

"Scientech is working with H. B. Robinson to replace the eight Ensign power supplies with [authorized] parts. (in progress)

"Scientech will return all affected power supplies to Ensign for installation of the approved components.

"Scientech will review the revised Ensign receipt inspection procedures to assure that they are robust enough to prevent reoccurrence.

IEIG
NRR

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SCIENTECH
200 S. Woodruff Ave.
Idaho Falls, ID 83401
(208) 529-1000

**10 CFR PART 21 REPORTING FORM
FOR REPORTING OF DEFECTS AND NONCOMPLIANCE**

OCTOBER 21, 2008

NAME AND ADDRESS OF REPORTING INDIVIDUAL(S) OR ORGANIZATIONS.

Scott Robuck, President
Sciencetech, a Curtiss Wright Flow Control company
200 S. Woodruff Avenue
Idaho Falls, ID 83401
Phone: 208-524-9250
Fax: 208-524-9289
Email: SRobuck@curtisswright.com

FACILITY, COMPONENT AND/OR PRODUCT THAT IS NONCOMPLIANT.

Sciencetech's MTH800 modules containing Ensign Power Systems, Inc. power supply Model 9061-01, serial numbers 15511 through 15614, 16110 through 16128, and 16135 through 16215

SUPPLYING FIRM IDENTIFICATION (NAME, ADDRESS).

Sciencetech, a Curtiss Wright Flow Control company
200 S. Woodruff Avenue
Idaho Falls, ID 83401
Phone: 208-524-9250
Fax: 208-524-9289

NATURE OF THE DEFECT, ASSOCIATED SAFETY HAZARD, AND THE DATE THIS INFORMATION WAS OBTAINED.

On October 15, 2008, Ensign Power Systems, Inc. of Loveland, Colorado informed Sciencetech of a defect. An internal audit had revealed that some Model 9061-01 power supplies provided to Sciencetech for use in their safety related line of NUSI modules had been inadvertently manufactured with an unauthorized part. The design controlled drawings invoked on the purchase orders required the use of two Murata capacitors, p/n GRM43DR72E334KW01L in locations C2 and C5, part of the power line filter. When Ensign attempted to purchase the required parts, their supplier made an unauthorized substitution of AVX 1812PC334KAT1A capacitors. These surface mount capacitors are virtually identical, and the packaging was labeled with the correct Ensign Power Systems part number. Ensign receipt inspection failed to detect the error, and Ensign proceeded to build 204 power supplies with the AVX capacitor in locations C2 and C5.

The AVX capacitor has the same nominal specifications as the Murata capacitor, which apparently led the distributor to make the unauthorized substitution. However, discussions with AVX Technical Representative Mr. Kenny Yi revealed that using AVX's capacitor in a power supply filter circuit is a misapplication of the device, which was designed for use in telephone circuits. Mr. Yi stated that use of this capacitor in power supply filter circuits will cause overheating and failure due to a piezo effect - electrostatic movement with the AC signal. Therefore, the AVX 1812PC334KAT1A is not an acceptable substitute for the Murata capacitor.



The Ensign Model 9061-01 power supply is sold solely to Sciencetech for its NUS Instruments product line. The power supply is used in many NUSI safety related electronic process control modules. These modules are used as safety related replacements for modules originally supplied for nuclear plants by Foxboro, Westinghouse, Bailey, General Electric and others. The AVX capacitors could fail open or shorted; the first would have little effect on the module, while the second would cause the module power fuse to open, removing power from the module. In analog modules such as buffers, isolators, converters, summers, dividers, and multipliers, this would result in a zero output signal. In trip modules, this would result in the output relays going to a de-energized state.

THE NUMBER AND LOCATION OF ALL SUCH COMONENTS IN USE AT, SUPPLIED FOR, OR BEING SUPPLIED TO ONE OR MORE FACILITIES SUBJECT TO 10 CFR 21.

Ensign Power Systems can trace every parts from purchase order to final assembly it was used in. This allowed them to identify by serial number which Model 9061-01 power supplies were built using the AVX capacitor. The serial numbers were and their locations are:

15511 through 15614 = 104 power supplies	At Sciencetech =	180 power supplies
16110 through 16128 = 19 power supplies	At Ensign =	16 power supplies
16135 through 16215 = <u>81 power supplies</u>	Shipped to Clients =	<u>8 power supplies</u>
204 power supplies		204 power supplies

The serial numbers of the eight shipped power supplies with AVX capacitors are:

15515, 15518, 15521, 15524, 15525, 15528, 15605, and 15608.

Sciencetech can trace every parts from purchase order to job it was used on. These power supplies were all bought under Sciencetech/NUSI Purchase Order 08-114. Some were used on Job 26667, which built six new MTH800 modules for H.B. Robinson. The others were used in three different jobs to refurbish modules returned from H.B. Robinson. The jobs, quantity of modules built, module serial numbers, and client purchase order numbers are shown below.

Job	Qty	Model Number	Serial Numbers	Client	Client PO
26667	6	MTH800-05/05/05/05-07-08	0801197 to 0801202	Robinson	00372684
26697	3	MTH800-05/05/05/05-07-08 (Refurbish)	9500306, 9500310, 9500335	Robinson	00382853
26702	1	MTH800-05/05/05/05-07-08 (Refurbish)	9500322	Robinson	00384994
	1	SAM800 (Refurbish)	9500822		
26716	1	MTH800-05/05/05/05-07-08 (Refurbish)	9400121	Robinson	00391438

Examination of the twelve modules revealed that the power supplies with the AVX capacitors were used in 8 MTH800 modules, s/n 9400121, 9500306, 9500322, 9500335, 0801198, 0801199, 0801200, and 0801201. Robinson has returned the modules to Sciencetech, and the power supplies have all been replaced with supplies containing the correct capacitor.



CORRECTIVE ACTION, WHICH HAS BEEN, IS BEING, OR SHOULD BE TAKEN, INCLUDING RESPONSIBLE PARTIES AND AN ESTIMATE OF THE TIME INVOLVED.

- Scientech immediately put a HOLD on all shipments of modules with Ensign power supplies until it could be verified that they were built using the correct parts (Complete 10/15/08).
- Scientech located all Ensign power supplies in house and isolated them (Complete 10/16/08).
- Scientech notified H. B. Robinson that some of the twelve modules contain power supplies with unauthorized parts (Complete 10/16/08).
- Scientech is working with H. B. Robinson to replace the eight Ensign power supplies with unauthorized parts (in progress).
- Scientech will return all affected power supplies to Ensign for installation of the approved components.
- Scientech will review the revised Ensign receipt inspection procedures to assure that they are robust enough to prevent reoccurrence.

COMMENTS OR ADVICE THAT SHOULD BE GIVEN TO OTHER PURCHASERS OR LICENSEES.

None.

Submitted by:

K. Mikesell

VP UTILITY SERVICES for Scott Robuck

Scott Robuck, General Manager
Scientech, a Curtiss Wright Flow Control company