

# Automatic Switch Co.

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ASCO

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April 29, 1991

United States Nuclear Regulatory Commission  
Washington DC 20555

ATTENTION: Mr. Thomas E. Murley, Director  
Office of Nuclear Reactor Regulation

SUBJECT: Possible Manufacturing Problem With Certain Coils Used On  
ASCO Nuclear Qualified Valves

Dear Mr. Murley:

We enclose information relating to certain coils used in valves manufactured by Automatic Switch Co. (ASCO). As you will see from the enclosed materials, there is the possibility of a manufacturing deficiency with one lot of 99 coils manufactured for ASCO in 1982. ASCO was alerted to this potential problem upon examination of coils, returned to ASCO on April 21, 1991, which had reportedly failed in service at Arkansas Nuclear One, Unit II (ANO II).

This condition may result in the failure of the coil and the resultant failure of the solenoid valve on which it is installed. A complete list of any potentially affected valves, along with their purchasers, is being assembled, and will be forwarded to you when complete.

ASCO does not have adequate knowledge of the actual installation and operating conditions of the valves on which these coils are installed to determine whether their malfunction would create a "substantial safety hazard" as defined in 10CFR21.3 so that formal notification would be required by 10CFR21.21. We are likewise unable to conduct the evaluation necessary to make such a determination. Although ASCO is not obliged to submit formal notification pursuant to 10CFR21, we are reporting this information to you consistent with the provisions set forth at 10CFR21.21.

Our investigation of this potential problem is continuing. However, we are taking immediate action to identify purchasers of coils, or of product manufactured with coils, from the suspect lot. We will notify them of this potential problem as soon as possible, and will offer to replace suspect product with new product at no charge.

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ASCO will certainly cooperate with any further investigation of this problem that may be required. Should you wish to discuss this further, or obtain any additional information, please let us know.

Very truly yours,  
AUTOMATIC SWITCH CO.

A handwritten signature in cursive script, appearing to read "James P. Weaver", written in dark ink.

James P. Weaver  
Vice President & General Manager  
Valve

JPW/br

enclosure

1. NAME AND ADDRESS OF INDIVIDUAL INFORMING THE COMMISSION:

Mr. James P. Weaver  
Vice President & General Manager, Valve  
Automatic Switch Co.  
50-60 Hanover Road  
Florham Park, NJ 07932

2. IDENTIFICATION OF THE ITEMS SUPPLIED:

Certain ASCO 3 and 4 way nuclear qualified, 125 vdc valves having 36' long coil lead wires. A complete list will be provided at a later date.

3. NATURE OF THE FAILURE AND POTENTIAL SAFETY HAZARD:

Arkansas Nuclear One, Unit II (ANO II) Power Plant reported failures of ASCO coils, Part No. 220339-1G, manufactured in the second quarter of 1982 (Date Code B82). Based on the investigation we have conducted to this point, it appears that these coil failures occurred because of corrosion of the magnet wire in the area where it connects to the lead wire. The exact mechanism of these failures is not known at this time.

In 1985, Carolina Power & Light's Brunswick Unit II Nuclear Plant experienced similar failures of 220339-1G coils. Our investigation into that incident concluded that the failures were also related to corrosion of the magnet wire. This situation was discussed in IE Information Notice 86-57 dated July 11, 1986.

Our records show that the Brunswick II failures and the recent ANO II failures were from the same 99 piece lot of 220339-1G coils manufactured in 1982.

Failures such as these would result in either the movement to the de-energized position of an energized solenoid, or the inability of a solenoid to move from the de-energized to the energized position upon application of electrical signal.

Although our investigation is not complete, we feel that the number of failures that have occurred at these two plants indicate the possibility of a manufacturing problem in this 99 piece lot.

4. THE CORRECTIVE ACTION WHICH IS BEING TAKEN:

ASCO will notify all purchasers of affected product of the potential problem. If the affected product is still in service, ASCO will offer replacement product, either in the form of a new solenoid coil, or a complete solenoid valve, whichever the user prefers.

ASCO will work closely with our coil vendor in an attempt to determine the exact mechanism of the failures.