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IE Bulletin No. 80-20

FAILURES OF WESTINGHOUSE TYPE W-2 SPRING RETURN TO NEUTRAL CONTROL SWITCHES

By letter dated June 18, 1980, Commonwealth Edison Company submitted Licensee Event Report No. LER 50-295/80-24 to the NRC describing a malfunction of a Westinghouse Type W-2 control switch at the Zion Generating Station, Unit 1. The malfunctioning switch is a three position spring return to neutral switch. Although the switch was in its proper neutral position when it malfunctioned, its neutral contacts failed to close properly thereby preventing the automatic start of 1A Service Water Pump.

Subsequent tests conducted on the malfunctioning switch revealed that contact closure was intermittent with the switch in the neutral (or "Auto Start") position. Other tests conducted on identical switches from spares and from Unit 2 equipment disclosed two additional switches with a tendency for intermittent contact closure.

A review of this matter by Westinghouse led to the issuance of NSD Technical Bulletin No. NSD-TB-80-9 to the utility owners of all Westinghouse operating plants. The recommendations contained in the Westinghouse technical bulletin include: (i) testing the neutral position contacts of the subject W-2 switches for continuity, and (ii) rewiring of the indicating light circuit to permit the early detection of a neutral contact failure as shown in Figure 1.

Depending on how the indicating light circuit is wired, loss of continuity thru the neutral position contact of a W-2 switch could remain undetected until the equipment associated with the switch were called upon to operate. Since such a failure would be equivalent to by-passing the system associated with the switch, consideration should be given to rewiring the switches used in safety-related applications as shown in Figure 1. Such rewiring would provide an acceptable means for detecting contact failure, provided the indicating light is in the control room and readily visible by the operator. If the indicating light is not so located, consideration should be given to annunciating the neutral position contact failures at the control room to alert the operator of the inoperable status of a safety-related system. In addition, consideration should be given to adding redundant contacts to the W-2 switches or to replacing the W-2 switches with others having a more positive contact wiping action.

ACTIONS TO BE TAKEN BY LICENSEES AND HOLDERS OF CONSTRUCTION PERMITS:

1. Determine whether Westinghouse Type W-2 control switches with spring return to neutral position are used in safety-related applications at your facility. If so, identify the safety-related systems using these

switches and the total number of switches so used. If no such switches are used in your facility, you should indicate that this is the case and ignore the remaining questions.

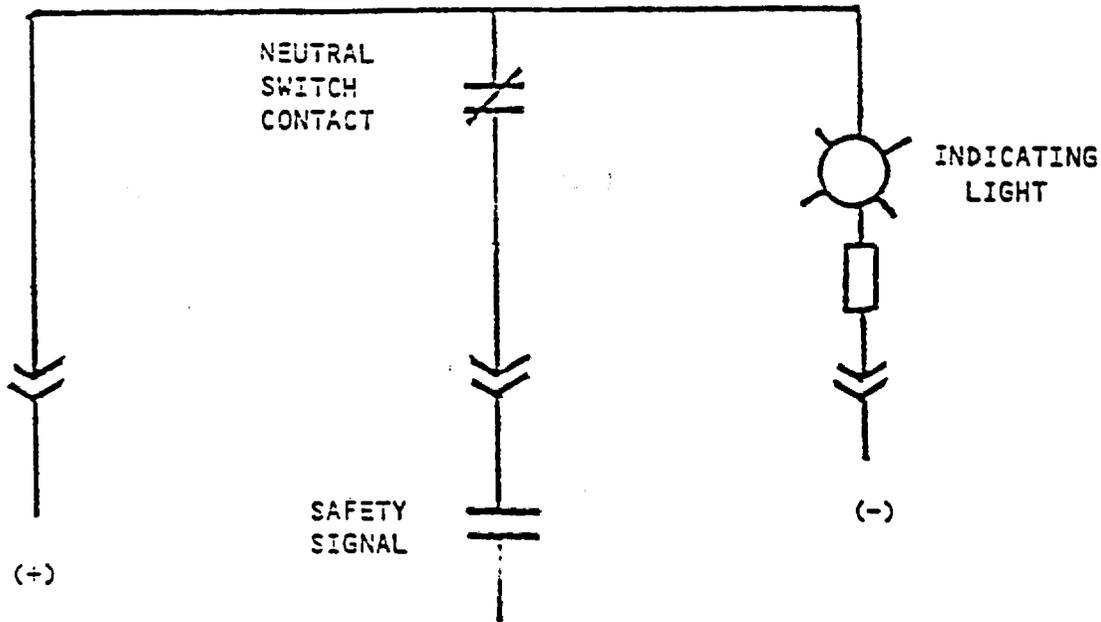
2. Licensees of operating plants using Type W-2 spring return to neutral control switches in safety-related applications shall perform continuity tests on all such switches. These tests shall be performed with the switch operator in the neutral position and completed within ten (10) days of the date of this bulletin. In addition, this continuity test shall be repeated at least every thirty-one (31) days after the initial test and after each manipulation of the switch from its neutral position. These continuity tests may be discontinued subsequent to implementing the longer term corrective measures described below.
3. Licensees of operating plants and holders of construction permits shall describe the longer term corrective measures planned and the date by which such measures will be implemented by actual installation or by design change, as appropriate. As a minimum, the longer term corrective measures should include rewiring the indicating light as shown in Figure 1 provided the light is readily visible to the control room operator. If not, failures of the neutral position contacts should be annunciated in the control room.

A report addressing the above matters, including the number of failures detected during the first series of tests and the safety-related systems involved, shall be submitted to the director of the appropriate NRC regional office within forty-five (45) days of the date of this bulletin. A copy of the report shall be forwarded to the Director, Division of Reactor Operations Inspection, Office of Inspection and Enforcement, Nuclear Regulatory Commission, Washington, D. C. 20555.

Approved by GAO, B180225 (R0072); clearance expires 7/31/80. Approval was given under a blanket clearance specifically for identified generic problems.

Enclosure:
Figure 1

EXISTING INDICATING LIGHT CIRCUIT (TYPICAL)



PROPOSED REWIRING OF INDICATING LIGHT CIRCUIT (TYPICAL)

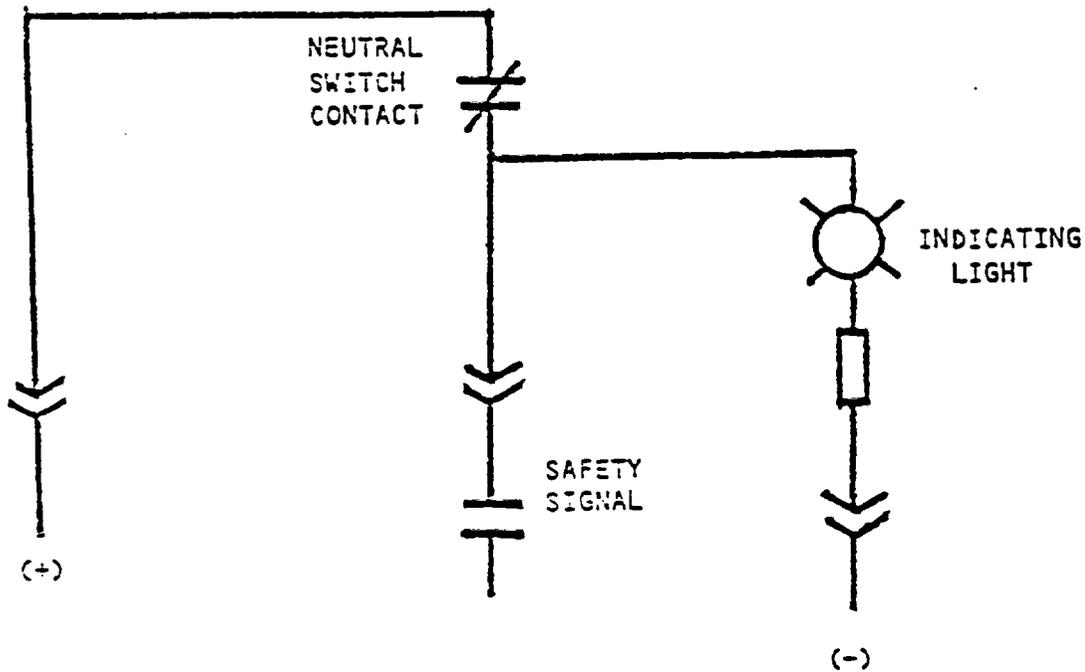


FIGURE 1

REWIRING OF INDICATING LIGHT CIRCUIT OF W-2 SWITCHES
AS RECOMMENDED BY WESTINGHOUSE TECHNICAL BULLETIN NSD-TB-80-9

RECENTLY ISSUED
IE BULLETINS

Bulletin No.	Subject	Date Issued	Issued To
80-19	Failures of Mercury-Wetted Matrix Relays in Reactor Protective Systems of Operating Nuclear Power Plants Designed by Combustion Engineering	7/31/80	All nuclear power facilities having either an OL or a CP
80-18	Maintenance of Adequate Minimum Flow Thru Centrifugal Charging Pumps Following Secondary Side High Energy Line Rupture	7/24/80	All PWR power reactor facilities holding OLs and to those PWRs nearing licensing
Supplement 2 to 80-17	Failures Revealed by Testing Subsequent to Failure of Control Rods to Insert During a Scram at a BWR	7/22/80	All BWR power reactor facilities holding OLs
Supplement 1 to 80-17	Failure of Control Rods to Insert During a Scram at a BWR	7/18/80	All BWR power reactor facilities holding OLs
80-17	Failure of Control Rods to Insert During a Scram at a BWR	7/3/80	All BWR power reactor facilities holding OLs
80-16	Potential Misapplication of Rosemount Inc., Models 1151 and 1152 Pressure Transmitters with Either "A" or "D" Output Codes	6/27/80	All Power Reactor Facilities with an OL or a CP
80-15	Possible Loss Of Hotline With Loss Of Off-Site Power	6/18/80	All nuclear facilities holding OLs
80-14	Degradation of Scram Discharge Volume Capability	6/12/80	All BWR's with an OL
80-13	Cracking In Core Spray Spargers	5/12/80	All BWR's with an OL
80-12	Decay Heat Removal System Operability	5/9/80	Each PWR with an OL