

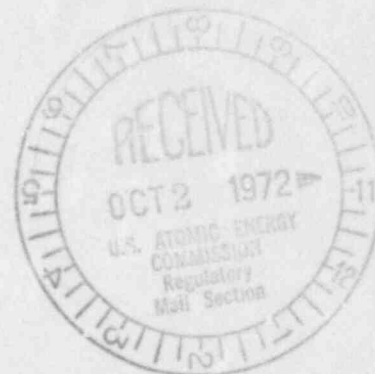
# Jersey Central Power & Light Company



MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N. J. 07960 • 539-6111

September 28, 1972

Mr. A. Giambusso  
Deputy Director for Reactor Projects  
Directorate of Licensing  
United States Atomic Energy Commission  
Washington, D. C. 20545



Dear Mr. Giambusso:

Subject: Oyster Creek Station  
Docket No. 50-219  
De-energizing of a Backup Scram Solenoid

The purpose of this letter is to report to you, as a matter of interest, the de-energizing of a backup scram solenoid with subsequent loss of air pressure in the scram valve pilot header. Individual rod insertions resulted causing void collapse and subsequent low water level scram.

The cause of the loss of air pressure was the de-energizing of a backup scram solenoid valve caused by a loose wire connection on an auxiliary contact of relay 2K52 in the reactor protection system (see attached drawing). Until this event occurred, it was assumed that the failure of one solenoid would not cause a loss of scram pilot header air pressure. Two conditions contributed to the loss of air in the scram valve pilot header:

1. When NC16B is de-energized, the air supply to the scram valve pilot header flows through NC16A from the supply port out the cylinder port into the exhaust port of NC16B and out the cylinder port to the scram valve pilot header (indicated by arrows on the attached drawing). When in this configuration, there is a restriction of air flow through the exhaust port due to the pilot-type construction of the valve. This condition has existed unknowingly since the plant was placed in operation.
2. A large number of the scram pilot solenoids (on each control rod drive) have minor air leaks through the "O" ring seal and the cap nuts. This leakage is not a problem during normal operation because the small leakage is made up from the control air supply through NC16B.

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Mr. A. Giambusso  
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Only during an abnormal situation, when the backup scram solenoid NC16B is de-energized and the channel 2 scram pilot solenoids are energized (as happened here), can the combination of leakage in the scram pilot solenoids and restricted flow through the backup scram solenoid result in decreasing pressure in the scram valve pilot air header.

The loose wire was reconnected and a test was performed to duplicate the event. In the case where a half scram was applied to channel 2, NC16B and channel 2 scram valve pilot solenoids are de-energized, the header pressure remained steady. This air pressure was being supplied at the time from NC16A through the restricted exhaust port of NC16B, but there is no leakage path to atmosphere when the 137 scram valves are in their de-energized position. The solenoids were then energized and the wire disconnected on relay 2K52. The header pressure immediately started to decrease. When the header pressure reached 40 psi, the wire was reconnected and the pressure returned to normal. Cap nuts were tightened on many of the scram pilot solenoids to minimize the air leakage. The vendor has been contacted for recommendations to correct the flow restriction through the backup scram solenoid exhaust port. New "O" rings are on hand and will be installed at the next convenient shutdown.

Forty copies of this report are enclosed for your review.

Very truly yours,

*Ivan R. Finfrock, Jr.*  
Ivan R. Finfrock, Jr.  
Vice President

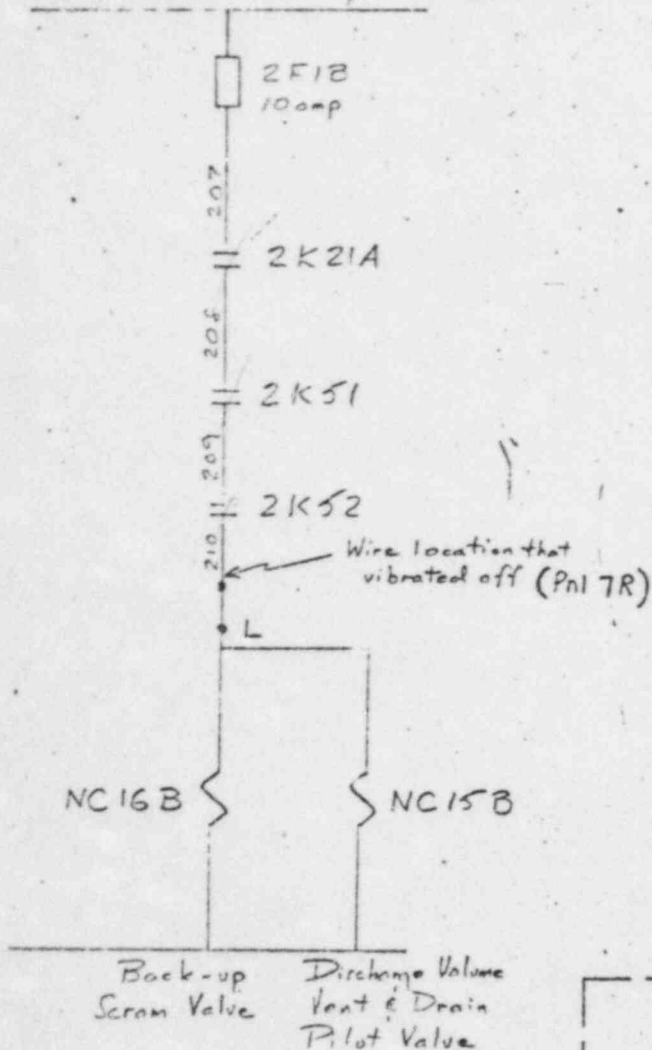
*W. H. Heston*  
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Enclosures

cc: Mr. J. P. O'Reilly, Director  
Directorate of Regulatory Operations, Region 1

# Reactor Protection System II



Key

L Local  
 S Supply  
 E Exhaust  
 C Cylinder  
 // Air line

# Control Rod Drive (CRD) System

