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This revision is submitted to revise the commitment date to September 15, 1986, for the completion of testing and analysis of the subject solenoid. The evaluation has been delayed as the required test equipment is not expected to be delivered until July 15, 1986.

### Conditions Prior to Event

Unit 1 and Unit 2 in Mode 5 (Cold Shutdown).

## Description of Event

On September 17, 1985, at 1100 hours it was discovered that a modified electric trip solenoid (EIIS/JK) was installed on the Turbine Driven Auxiliary Feedwater Pump (TDAFP) trip and throttle valve (EIIS/BA). This LER concerns the installation of a modified version of General Electric Model 950320BAG2 solenoid in lieu of Model 9503206BAF2 as should have been used per the original design requirements for the Turbine Driven Auxiliary Feedwater Pump trip and throttle valve. The solenoids were incorrect in that (1) the plunger was modified without appropriate review, and (2) the solenoids were not certified to the appropriate requirements.

### Cause of Event

The root cause was inadequate program controls in 1976 which allowed the initial installation of the incorrect solenoid. Once the incorrect solenoid was used it was replaced in kind.

# Analysis of Event

The 9503206BAF2 solenoid was a "pull-type". The replacement 9503206BAG2 solenoid was a "push-type", and thus required removing, from the plunger, the guides that would otherwise protrude through the top of the coil and hit the arc shield and mounting bracket (which were originally installed for 9503206BAF2 solenoid). Both solenoids are normally energized for this application. The qualified solenoid 9503206BAF2 has subsequently been reinstalled on the trip and throttle valve for both units.

The purpose of the subject solenoid is to control the latching position of the TDAFP trip and throttle valve. Normally, the solenoid is energized which allows the trip and throttle valve to be latched. This allows steam to be supplied through the valve to allow pump operation when required. Under adverse conditions where the TDAFP may fail, such as electrical or mechanical overspeed, the solenoid deenergizes, unlatching the trip and throttle valve.

NRC Form 366A (9-83)	LICENSEE EVENT REPORT (LER) TEXT CONTINUA	U.S. NUCLEAR ATION APPROVE EXPIRES	REGULATORY COMMISSION D OMB NO. 3150-0104 8/31/88
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)	PAGE (3)

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This action shuts off the pump and thus protects it from the adverse condition.

The TDAFP supplies feedwater to the Steam Generators during times when normal feedwater is unavailable. This includes normal as well as emergency conditions. The pump is backed up by two Motor Driven Auxiliary Feedwater Pumps. In the event of an accidental loss of feedwater during power operation, either of the Motor Driven Pumps is sufficient for decay heat removal purposes.

The operability of the TDAFP, including the trip and throttle valve, is verified by surveillance testing at least once every 31 days per Technical Specification 4.7.1.2. Additionally, the position of the latching mechanism is checked once per shift as part of the operations tour of the area. The normally energized solenoid failed a total of only 9 times in 17 and one half unit years of operation.

While it appeared that solenoid 9503206BAG2 could be modified to make it interchangeable with solenoid 9503206BAF2, a Licensee Event Report was initiated when it was determined that solenoid 9503206BAG2 did not have the qualification documentation of solenoid 9503206BAF2. The original changeover occurred in 1976. Normal procedure subsequent to this has been to replace the solenoid coils, and use the old plunger. Since we cannot make a determination at this time of the consequences of applying the modified solenoid, we have elected to evaluate the modified solenoid by analysis and/or testing. Once this evaluation is completed, we will advise the NRC of the results. It is anticipated to have this evaluation completed by September 15, 1986.

#### Corrective Actions

To prevent recurrence of this specific case, the following has been performed, 1) the modified solenoid number 9503206BAG2 has been replaced with the correct solenoid number 9503206BAF2 which meets certification requirements, 2) all of the non-certified solenoids have been removed from the Plants spare parts inventory, and 3) permanent identification tags have been mounted a jacent to the installed solenoids specifying the correct solenoid to be used if replacement is necessary. In addition to the above, the following references have been stressed in recent training to be used to identify equipment and parts as safety grade, 1) the Plants "N" List, 2) elementary drawings, 3) flow diagrams, 4) D.C. Cook Nuclear Plant Specifications, 5) vendors manuals, and 6) if doubt still exists, the appropriate engineering guidance will be sought. If a timely determination cannot be made, the equipment will be treated as safety grade.

(9-83) LICENSEE EVENT REPORT (LER) TEXT CONTINUATION								U.S. NUCLEAR REGULATORY COMMIS APPROVED OMB NO. 3150-0104 EXPIRES: 8/31/88													
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Failed Component Identification

General Electric Solenoid Model 9503206BAG2.

# Previous Similar Events

Three previous LERs have been submitted on the Turbine Driven Auxiliary Feed Pump trip solenoid. They are LER number, 316/80-017, 315/78-077, and 315/76-035.



July 1, 1986

United States Nuclear Regulatory Commission Document Control Desk Washington, D.C. 20555

> Operating License DPR-58 Docket No. 50-315

Document Control Manager

In accordance with the criteria established by 10CFR50.73 entitled Licensee Event Reporting System, the following report/s are being submitted:

85-048-02

Sincerely,

W.G. Smith, Jr. Plant Manager

/cbm

Attachment

CC:	John E. Dolan
	J.G. Keppler, RO:III
	M.P. Alexich
	R.F. Kroeger
	H.B. Brugger
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	Dottie Sherman, ANI Library
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