

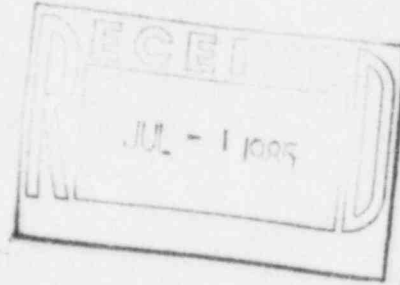


KANSAS GAS AND ELECTRIC COMPANY

GLENN L. KOESTER  
VICE PRESIDENT - NUCLEAR

June 28, 1985

Mr. R.D. Martin, Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011



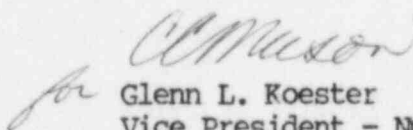
KMLNRC 85-165  
Re: Docket No. STN 50-482  
Subj: Special Report 85-006

Dear Mr. Martin:

The enclosed Special Report is submitted pursuant to Technical Specifications 6.9.2 and 4.8.1.1.3.

If you have any questions concerning this matter, please contact me or Mr. Otto Maynard of my staff.

Yours very truly,

  
Glenn L. Koester  
Vice President - Nuclear

GLK:dab

Enclosure

xc: PO'Connor (2), w/a  
JCummins, w/a

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## Special Report 85-006

### Diesel Generator Invalid Failure

On June 1, 1985, at approximately 0407 CDT, the periodic surveillance testing required by Technical Specifications was commenced on diesel generator (D/G) "A" utilizing the surveillance procedure STS KJ-005A, "Manual/Auto Start, Synchronization and Loading of Emergency Diesel Generator NE01." D/G "A" was started, and subsequently secured prematurely at approximately 0413 CDT due to an erratic low jacket water pressure indication and alarm.

It has been determined that the low jacket water pressure indication and alarm was due to the valve lineup being utilized to test the starting air system of the diesel generator.

The diesel has two redundant 100 percent capacity starting air systems. During each monthly surveillance test of the diesel, one starting air system is isolated and the other is tested to ensure its operability on a staggered basis. After the diesel has been started, the other starting air system is returned to service, and left in that configuration for normal diesel lineup. Previous experience has revealed that opening the second starting air isolation valve allows air to enter the header very rapidly, which causes the excessive flow check valves in the sensor lines to shut, resulting in flow oscillations in the lines and giving rise to erroneous alarms and fluctuating pressure indications from the indicators fed by these sensing lines. A Temporary Modification had been developed to allow for the existing bypass valves around the excessive flow check valves to be opened one-quarter turn during engine testing, thus preventing these oscillating flow conditions and erroneous alarms. In this particular instance, the Temporary Modification was ineffective in dampening these flow oscillations, and reverse flow through the check valves lowered the instrument air pressure which caused the erroneous indication and alarm. The reverse flow was due to the pressure differentials in the lines created by the testing lineup. The Temporary Modification did not contribute to the existence of the reverse flow conditions.

Once this was determined to be the cause of the problem, D/G "A" was restarted at approximately 0450 CDT, loaded successfully, and secured at approximately 0603 CDT. D/G "A" was subsequently realigned for automatic operation, thus completing a valid successful test of D/G "A".

D/G "B" was operable throughout this time period. D/G "A" was unavailable for service for 30 minutes while an investigation into the cause of the low pressure indication was being performed.

In order to prevent flow oscillations when the second air starting system is valved in, an alternate method for determining the operability of each starting air system is being developed, and will be incorporated into the surveillance procedures STS KJ-005A and STS KJ-005B (for D/G "B"). Instead of isolating one starting air system prior to engine start and then valving it back in after the engine has started, the operability of both starting air systems will be verified simultaneously by observing the pressure decrease in the air tanks when the solenoid valves for the starting air system open on an engine start signal.

This event has been classified as an invalid failure per the criteria provided in Regulatory Position C.2.e(2) of Regulatory Guide 1.108. The start of D/G "A" at 0407 CDT on June 1, 1985, was terminated prematurely due to erroneous indications from instruments that perform no control or protection function in the operation of the diesel generator unit.

There have been nine (9) valid successful tests of D/G "A" since the completion of preoperational testing on D/G "A", including the successful test mentioned in this report. During this same time period, including the invalid failure discussed in this report, seven (7) invalid failures and no valid failures have occurred on D/G "A". There have been eight (8) valid successful tests on D/G "B" since the completion of preoperational testing on D/G "B". During the same time period, four (4) invalid failures and no valid failures have occurred on D/G "B".

This event had no impact on the diesel generator surveillance testing frequency of at least once per 31 days. This is in conformance with the specifications of Regulatory Position C.2.d(1) of Regulatory Guide 1.108 and Technical Specification Table 4.8-1 which require the test interval to be not more than 31 days if the number of valid failures in the last 100 tests is one or zero.