

PRIORITY ATTENTION REQUIRED MORNING REPORT - REGION V DECEMBER 7, 1993

Licensee/Facility:

Southern California Edison & San Diego Gas & Electric Co.
San Onofre 2 3

Notification:

MR Number: 5-93-0093
Date: 12/06/93
TELEPHONE CALL FROM RI

Camp Pendleton, California
Dockets: 50-361,50-362
PWR/CE, PWR/CE

Subject: DIESEL GENERATOR ROTO SWITCH BOLT FAILURE - UPDATE

Reportable Event Number: N/A

Discussion:

While performing Unit 3 integrated Engineered Safety Features testing on November 28, 1993, the output breaker for diesel generator (DG) 3G003 tripped while the DG was attempting to pick up load. The trip was caused by a protective differential current relay.

The differential current relay "sensed" a differential current condition when a roto test switch failed and caused an open circuit on one of the phases into the differential current relay. The roto test switch was manufactured by Meter Devices Company and is used to isolate the differential current relay from the DG protection circuitry during periodic testing. The failure of the roto test switch was attributed to a bolt head that had broken off of one of the switch connections.

Following a 1988 Unit 3 outage, the licensee observed a similar bolt failure in the same roto switch while inspecting the DG switchgear pri

or
to plant startup. There are 14 roto switches per DG and two DGs per Unit. The licensee replaced the roto switch and tested the remaining switches on the Unit 3 DGs. There were no additional bolt failures noted. The licensee's preliminary root cause assessment indicated that the bolt failure was caused by a pre-existing crack due to a manufacturing defect. The licensee examined additional bolts from the failed roto switch and noted the existence of cracks in the threaded portions on 21 of the 24 bolts. The licensee believes that the defects were introduced during the process of forming the threads on the bolts (i.e., the bolts were not properly annealed to relieve residual stresses). The licensee pull tested two of the cracked bolts and found that the bolt's ultimate strength was 80 KSI; however, there was no material specification for this bolt.

The licensee plans to contact the roto switch vendor and to begin inspection of the Unit 2 roto switches this week.

San Onofre Unit 2 is operating at 98 percent power. San Onofre Unit 3 is currently in Mode 4 during a refueling outage.

Regional Action:

The resident inspectors will continue to follow the licensee's corrective actions.

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