

CATEGORY 1

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 EBNETER,S.D. Region 2 (Post 820201)

SUBJECT: RO:on 951221 & 29 3B EDG failed due to loose fitting on fuel oil priming pump suction line & loose fitting on discharge line. Leaking fittings tightened & all fittings on fuel oil suction lines verified tight.

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10 CFR §50.36

Stewart D. Ebner
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta St., N.W., Suite 2900
Atlanta, GA 30323

Mr. Stewart D. Ebner:

Re: Turkey Point Unit 3
Docket No. 50-250
Special Report - 3B Emergency Diesel Generator Failure

In accordance with Technical Specifications 4.8.1.1.3, the attached Special Report details the 3B Emergency Diesel Generator failures of December 21 and 29, 1995.

Should there be any questions on this information please contact us.

Very truly yours,

for
Robert J. Hovey
Vice President
Turkey Point Plant

CLM

Attachment

cc: USNRC, Document Control Desk, Washington D.C.
Thomas P. Johnson, Senior Resident Inspector, USNRC,
Turkey Point Plant

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SPECIAL REPORT

3B EMERGENCY DIESEL GENERATOR FAILURE

PURPOSE:

Technical Specification 4.8.1.1.3, requires the submittal of a special report to the NRC in the event of a diesel generator failure. The Technical Specification requires the report to include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August, 1977.

BACKGROUND:

Florida Power and Light's (FPL) Turkey Point Nuclear Units 3 and 4 have two Emergency Diesel Generators (EDGs) for each unit. The Unit 3 EDGs were overhauled, and the Unit 4 EDGs installed, during the dual unit outage in 1990/1991.

EVENT:

On 12/21/95, the 3B EDG was out of service for an upgrade to its electrical circuit. In preparation for the post-modification test, Operations personnel attempted to run the electric fuel priming pump, to ensure fuel supply to the EDG prior to starting it. Although the pump appeared to run, it did not develop satisfactory discharge pressure. The pump was replaced, and operated satisfactorily. The post-modification test was then completed satisfactorily, and the EDG was restored to service. Although the EDG was out of service when the condition was discovered, the condition was considered an EDG failure in accordance with Regulatory Position C.2.a(9) of Regulatory Guide 1.108, Revision 1, August, 1977. Since this was the second failure in 20 starts, the EDG surveillance frequency was increased to weekly in accordance with Technical Specification 4.8.1.1.2.

In preparation for running the 3B EDG on 12/28/95, the electric fuel priming pump again did not develop satisfactory pressure. The pump sounded as if it were dry. The 3B pump took longer to coast down than the (properly operating) 3A EDG electric fuel priming pump. There was no abnormal noise associated with the operation of the 3B fuel priming pump, other than sounding dry. The pump was inspected for proper rotation, with satisfactory results. Two fittings were found wetted with fuel. The suction line was removed and found to be dry, when it should have been filled with fuel. The fuel oil suction strainer was partially filled with fuel in the bowl. The fuel level was consistent with the level of the suction pipe in the strainer bowl. The suction strainer was clean. The suction piping was then placed in a container of fuel oil; the priming pump operated correctly, indicating that the pump was not the cause of the failure. The suction lines were then filled with fuel, and all pipe connections between the engine-driven fuel pump, the electric priming pump, and the skid tank were verified tight. The electric fuel priming pump then performed satisfactorily.

The two leaking fittings were located (1) between the fuel suction strainer and the electric priming pump, and (2) between the electric priming pump and its associated check valve. Should either of these fittings leak, the fuel would drain from the pump, back into the skid tank.

The following discussion addresses each of the areas listed in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August, 1977.

(1) DIESEL GENERATOR UNIT INVOLVED:

The 3B EDG may not have started due to lack of fuel in its suction line.

(2) IDENTIFY THE FAILURE AS BEING THE N-TH FAILURE IN THE LAST 100 VALID TESTS:

The failure count for the Unit 3 EDGs was transvalued to zero at the end of the dual unit outage, concurrent with the implementation of Turkey Point's Revised Technical Specifications and the dual unit outage overhaul. These failures were the fourth and fifth failures of the 3B EDG since the count was rezeroed, but one of these five was a non-valid failure.

(3) CAUSE OF FAILURE:

The cause of the 3B EDG failure was one loose fitting on the fuel oil priming pump suction line and one loose fitting on the discharge line, allowing fuel oil to drain back into the skid tank. The electric fuel priming pump would not prime with both fittings loose, and therefore would not develop pressure.

(4) CORRECTIVE MEASURES TAKEN:

1. The leaking fittings were tightened, and all fittings on the fuel oil suction lines were verified tight.
2. The EDG was tested satisfactorily after the electric fuel priming pump and suction lines were returned to service.
3. Operations personnel verified that the electric fuel priming pump will develop adequate pressure, on an increased frequency. Initially the verification was performed every two hours. The frequency was then gradually relaxed, based on continued satisfactory results. Presently the verification is being performed daily.

(5) LENGTH OF TIME THE DIESEL GENERATOR WAS UNAVAILABLE:

The 3B EDG was unavailable for 30 hours, 15 minutes, from 0615 on 12/21/95 to 1350 on 12/22/95, but this unavailability was started as a planned outage to perform a modification. The first failure of the fuel priming pump was discovered at 1945 on 12/21/95, so 18 hours, 5 minutes of the unavailability may be attributed to the failure. The EDG was unavailable for 13 hours, 50 minutes, on 12/29/95, as a direct result of the air-bound fuel oil suction line.

(6) DEFINITION OF CURRENT SURVEILLANCE TEST INTERVAL:

Unless a trigger value is exceeded (2 failures in the last 20 valid tests, or 5 failures in the last 100 valid tests), the normal surveillance frequency is every 31 days. These are the second and third failures in the last 20 valid tests, and the fourth failure in the last 100 valid test. Therefore, the surveillance interval for the 3B EDG is weekly.

(7) VERIFICATION OF TEST INTERVAL IN CONFORMANCE WITH REGULATORY POSITION C.2.d:

The test interval is in conformance with the requirements of Turkey Point Technical Specifications Table 4.8-1.