

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9606260218 DOC.DATE: 96/06/18 NOTARIZED: NO DOCKET #
 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
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 HOVEY, R.J. Florida Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 96-008-00: on 960521, surveillance method for testing
 Emergency Diesel Generators (EDG) determined inadequate.
 Caused by personnel error. All four EDG rapid start tested &
 EDG surveillance procedures modified. W/960618 ltr.

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10 CFR 50.73

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Gentlemen:

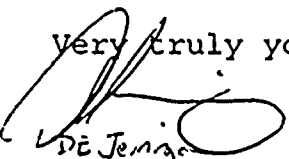
Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Reportable Event: 96-008-00

Inadequate Surveillance Testing for Emergency Diesel Generators

The attached Licensee Event Report, 250/96-008-00, is being provided in accordance with 10 CFR 50.73(a)(2)(i)(B).

Should there be any questions, please contact us.

Very truly yours,


R. J. Hovey
Vice President
Turkey Point Plant

JAH

Attachment

cc: S. D. Ebnetter, Regional Administrator, Region II, USNRC
T. P. Johnson, Senior Resident Inspector, USNRC,
Turkey Point Plant

250049

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PDR ADOCK 05000250
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

TURKEY POINT UNIT 3

DOCKET NUMBER (2)

05000250

PAGE (3)

1 OF 4

TITLE (4) **INADEQUATE SURVEILLANCE TESTING FOR EMERGENCY DIESEL GENERATORS**

EVENT DATE (5)			LER NUMBER(6)			RPT DATE (7)			OTHER FACILITIES INV. (8)		
MON	DAY	YR	YR	SEQ #	R#	MON	DAY	YR	FACILITY NAMES		DOCKET # (S)
05	21	96	96	008	00	06	18	96			
OPERATING MODE (9)			1			10 CFR 50.73(a)(2)(i)(B)					
POWER LEVEL (10)			100								

LICENSEE CONTACT FOR THIS LER (12)

James A. Hickey, Licensing Engineer

Telephone Number

(305) 246-6668

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?

SUPPLEMENTAL REPORT EXPECTED (14) NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>					EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
(if yes, complete EXPECTED SUBMISSION DATE)								

ABSTRACT (16)

At 1030 on May 21, 1996, based on an inquiry from a visiting inspector Florida Power & Light Company determined the surveillance method used for testing the Emergency Diesel Generators was inadequate. All four Emergency Diesel Generators were declared inoperable and Technical Specification 4.0.3 was entered. All four Emergency Diesel Generators were required to be tested within the next 24 hours to verify operability.

Technical Specifications require the rapid start test to be conducted from "normal conditions". Contrary to the "normal conditions" start requirement, the initial system line-up verification required the Diesel Fuel Priming Pump to be started and fuel supply parameters verified. This action was determined to constitute inadvertent pre-conditioning and did not meet the intent of verifying the rapid start capability of the Emergency Diesel Generators.

At 0050 on May 22, 1996, Technical Specification 4.0.3 was exited following the successful rapid start testing of all four Emergency Diesel Generators.

The Emergency Diesel Generator rapid start surveillance procedures have been modified to eliminate the requirement to start the Diesel Fuel Priming Pump and verify fuel supply parameters prior to the start of an Emergency Diesel Generator for surveillance testing.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME
TURKEY POINT UNIT 3DOCKET NUMBER
05000250LER NUMBER
96-008-00PAGE NO.
2 OF 4

I. DESCRIPTION OF THE EVENT

On May 20, 1996, Condition Report 96-711 was initiated as a result of an inquiry by a visiting inspector. The inspector's concern involved the practice of depressing the Diesel Fuel Priming Pump Push-button [EK:HS] and verifying adequate fuel system parameters during the pre-start alignment verification for Emergency Diesel Generator (EDG) [EK:DG] surveillance testing. In accordance with plant procedures a three day due date was assigned to the Condition Report to provide an operability assessment.

At 1030 on May 21, 1996, Florida Power & Light Company determined the surveillance method used for testing the Emergency Diesel Generators was inadequate. The practice of verifying diesel fuel system parameters constituted inadvertent pre-conditioning and had the potential to mask an unlikely set of simultaneous failures. If such a combination of problems existed, the EDG surveillance might not reveal the failure. All four Emergency Diesel Generators were declared inoperable and Technical Specification 4.0.3 was entered. All four Emergency Diesel Generators were required to be tested within the next 24 hours to verify operability.

An On The Spot Change to the EDG rapid start surveillance procedure was approved. The requirement to depress the Diesel Fuel Priming Pump Push-button and verify adequate fuel system parameters during the pre-start alignment verification was deleted.

Approximately 14.5 hours later, at 0050 on May 22, 1996, rapid start surveillances on all four EDGs were completed satisfactorily and Technical Specification 4.0.3 was exited.

II. CAUSE OF THE EVENT

Root Cause

The root cause of the event was cognitive personnel error. The Vendor technical manual for the EDGs recommends depressing the Diesel Fuel Prime Push-button prior to starting the EDG. This recommendation was not properly evaluated against the requirements for surveillance testing of the EDGs in accordance with plant Technical Specifications.

III. ANALYSIS OF THE EVENT

Several other potential failures of the Unit 3 EDG fuel oil system have been reviewed to determine their potential impact on the function of the EDG and to determine if the pre-test prime could have "masked" a potential failure. Each of the potential failures are discussed below:

- ▶ A large failure in the suction lines [EK:TBG] to the priming and engine driven pump [EK:P] would result in a loss of prime to both pumps. This failure would be detectable by both the pre-test prime and on a diesel start attempt. No failure is masked.
- ▶ A small leak in the suction line would delay full pressurization of the fuel oil system. However, it would not impact fuel inventory in the supply headers. From discussions with MKW,

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME TURKEY POINT UNIT 3	DOCKET NUMBER 05000250	LER NUMBER 96-008-00	PAGE NO. 3 OF 4
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performance of the injectors would not be affected by the reduced fuel supply pressure. Therefore, there would be no discernable impact on EDG performance and no failure mechanism for the diesel.

- ▶ An internal leak through either the fuel pump discharge check valve [EK:V] or the over pressure protection 65 psig check valve in the metering valve could result in a small change in header inventory. A vacuum would form in the supply headers preventing any substantial loss in fuel oil inventory. The minor loss of fuel oil would be masked on a diesel start. However, there is no failure mechanism for the EDG and overall EDG performance would be unaffected.

- ▶ An external leak in the fuel oil supply piping outside of the engine covers would be visually detectable and would be identified as part of the pre-start visual inspection of the engine or by regular operator rounds. This failure would not be masked by the priming of the system and could be more easily detected following system pressurization.

- ▶ A leak on a single supply header inside of the engine covers could potentially drain the affected header. This failure would leave the other header filled. On start of the diesel, the drained header could have the potential impact of starting the diesel on half of the cylinders [EK:ENG]. While the loss of up to half of the cylinders would slow the engine ramp rate, it is expected that the supply header would fill and the EDGs would continue to meet the required 15 second acceptance criteria for speed and voltage. This failure could be masked by the manual priming operation, but would not substantially impact EDG function.

- ▶ Leaks on both supply headers or a single leak coupled with leak-through of a check valve could potentially drain the majority of the fuel supply header and impact the successful function of the EDG. Pre-priming the fuel supply header would mask this condition during normal functional testing. Note that with the priming pump functioning, a completely drained supply header could be filled and EDG startup completed within the acceptance criteria. In order to impact EDG function, three failures are required, a supply header leak or leaks, a check valve failure and a priming pump failure.

The Unit 4 EDGs are essentially identical to those for Unit 3 with the following exceptions:

- ▶ The higher relative elevation of the Skid Tank on Unit 4 eliminates any potential for loss of prime by ensuring that the suction piping is always filled and at positive pressure due to static head. This eliminates the first two potential failures discussed for Unit 3 above.

- ▶ The remainder of the potential failures discussed for Unit 3 are essentially unchanged for Unit 4. The same impacts and conclusions discussed above are applicable to Unit 4.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 3	05000250	96-008-00	4 OF 4

All four EDGs were successfully tested utilizing Technical Specification 4.0.3 within the time frame allowed. No problems associated with pre-conditioning the EDGs were discovered. Therefore, the health and safety of plant personnel and the public was not affected by the inadequate surveillance practice.

This event is reportable under the requirements of 10 CFR 50.73(a)(i)(B).

IV. CORRECTIVE ACTIONS

1. All four EDGs were successfully rapid start tested. Testing was completed on May 22, 1996.
2. The EDG surveillance procedures have been modified to eliminate the need to depress the Diesel Fuel Priming Pump Push-button and verifying adequate fuel system parameters during the pre-start alignment verification. Completed June 14, 1996.
3. The EDG surveillance procedures have been modified to verify proper Diesel Fuel Priming Pump shaft rotation when the EDG is started. Completed June 14, 1996.
4. A comprehensive surveillance procedure review was performed to identify other instances of pre-conditioning. No practices which constitute pre-conditioning were identified. Completed June 14, 1996.

V. ADDITIONAL INFORMATION

In 1988, both EDGs were declared inoperable simultaneously due to one being out of service for scheduled maintenance and the other exhibiting fuel pressure higher than the acceptance criteria of 40 psi. The cause of the high fuel pressure was a dirty fuel filter. Reference LER 250-88-22.

In 1992, FPL identified a surveillance procedure deficiency which resulted in not adequately testing the primary PORV setpoints prior to placing the PORVs in service. Reference LER 250-92-008.