

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)  
Turkey Point Unit 3DOCKET NUMBER (2)  
0 5 0 0 0 2 5 0 1 OF 0 3TITLE (4)  
Emergency Diesel Generator Loading

EVENT DATE (6)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (9)													
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER (5)												
1	2	1	4	8	5	8	5	-	0	4	2	-	0	0	0	1	2	8	8	5	Turkey Point Unit 4	0 5 0 0 0 2 5 1

OPERATING MODE (3)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)			
1	1	20.402(a)	20.405(a)	00.736(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	11010	20.405(a)(1)(i)	00.384(a)(1)	00.736(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	00.384(a)(2)	00.736(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 300A)
		20.405(a)(1)(iii)	00.736(a)(3)(i)	00.736(a)(2)(vii)(A)	
		20.405(a)(1)(iv)	00.736(a)(3)(ii)	00.736(a)(2)(vii)(B)	
		20.405(a)(1)(v)	00.736(a)(3)(iii)	00.736(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)  
NAME  
R. L. Teuteberg, Regulation and Compliance EngineerTELEPHONE NUMBER  
AREA CODE  
3 0 5 2 4 5 - 2 9 1 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)				
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)  
YES (If yes, complete EXPECTED SUBMISSION DATE) ☒ NO ☐  
EXPECTED SUBMISSION DATE (15)  
MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

**Event:** On December 14, 1985, FPL identified that the potential existed for over-loading of the emergency diesel generators (EDG) under the conditions of a dual unit loss of off-site power coincident with a safety injection signal on one unit. In response to an INPO Significant Operating Experience Report, an engineering evaluation of the emergency power supply control logic for Units 3 and 4 had been previously initiated. On December 14, 1985, FPL's Engineering Department confirmed that a potential did exist for exceeding the FSAR and EOP loading limits, because certain non-safety related loads could be automatically loaded onto vital busses served by the EDGs without operator knowledge. Upon confirmation that the above loads had the potential for overloading the EDGs, the plant staff was promptly notified on December 14, 1985, and administrative controls were developed and implemented to ensure that operators maintained control of the EDG loading to comply with the maximum load specified in plant EOPs. Under the guidance of an engineering safety evaluation, On-The-Spot-Changes were made to EOPs to ensure operator control of the above EDG loads until more permanent procedure or design changes could be implemented. In addition, operator training in the administrative controls added to EOPs was immediately conducted as each subsequent shift came on duty.

**Cause of Event:** The discovery of the potential over-loading of the EDGs was the result of an engineering loading study performed to investigate concerns identified in an INPO Significant Operating Experience Report.

**Corrective Actions:** In addition to the interim administrative controls discussed above, the following corrective actions will be taken:

- 1) In order to establish what permanent corrective measures will be taken to enhance the administrative controls applied to the EDG loading, a load management study will be initiated to develop a complete EDG time history loading profile. Based on this load management study, additional procedural guidance or design changes may be proposed to provide greater assurance that the EDG loading commitments identified in the FSAR are met.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Turkey Point Unit 3	0 5 0 0 0 2 5 0 8 5	—	0 4 2	— 0 0	0 2	OF 0 3

TEXT (If more space is required, use additional NRC Form 388A's) (17)

**Event:** On December 14, 1985, FPL identified that the potential existed for over-loading of the emergency diesel generators (EDG) under the conditions of a dual unit loss of off-site power coincident with a safety injection signal on one unit. In response to an INPO Significant Operating Experience Report, an engineering evaluation of the emergency power supply control logic for Units 3 and 4 had been previously initiated. During a review of a contractor's draft report which was received during the first week in December, FPL's Engineering Department identified that certain diesel generator non-safety related auto-connected loads had the potential for loading an emergency diesel generator in excess of the design limits identified in the FSAR and plant emergency operating procedures (EOP). On December 13, 1985, FPL's Engineering Department and its contractor met to discuss this finding and to jointly examine the various assumptions underlying the EDG loading study. On December 14, 1985, FPL's Engineering Department confirmed that a potential did exist for exceeding the FSAR and EOP loading limits, because these loads could be automatically loaded onto vital busses served by the EDGs without operator knowledge.

The basis for the EDG loading study was consistent with FSAR Section 8.1, in which an accident is assumed to occur on one unit concurrent with a loss of off-site power on both units. The accident postulated is a large break loss of coolant accident. The diesel generator loading combination which was evaluated is based on two units operating with only one emergency diesel generator available as the result of a single failure. The non-accident unit is assumed to be brought to a hot standby condition in accordance with FSAR Section 8.2.3.

During this engineering review, certain non-safety related loads were confirmed to automatically start after the EDG breaker sequenced onto a 4160 VAC bus. Equipment identified in this category were the turbine generator bearing and turning gear oil pumps, and the automatic turning gear motors for both units. This equipment would automatically load onto the EDGs after a turbine trip when the turbine's speed had decreased sufficiently to associated setpoints. The time for the auto-start of these turbine loads near the completion of coast-down is typically in excess of 30 minutes, which would allow for operator actions. Additional equipment could be enabled when the operator resets the safety injection signal, for example, in preparation for the conversion to the containment sump recirculation mode. Equipment identified in this category were two of the four instrument air compressors. A third instrument air compressor will start and load onto the EDG upon loss of off-site power, but this load was considered in the evaluation. The fourth instrument air compressor trips upon loss of power and remains off.

Upon confirmation that the above loads had the potential for overloading the EDGs, the plant staff was promptly notified on December 14, 1985, and administrative controls were developed and implemented to ensure that operators maintained control of the EDG loading to comply with the maximum load specified in plant EOPs. Under the guidance of an engineering safety evaluation, On-The-Spot-Changes were made to EOPs to ensure operator control of the above EDG loads until more permanent procedure or design changes could be implemented. In addition, operator training in the administrative controls added to EOPs was immediately conducted as each subsequent shift came on duty.

**Cause of Event:** The discovery of the potential for over-loading of the EDGs was the result of an engineering loading study performed to investigate concerns identified in an INPO Significant Operating Experience Report.

**Analysis of Event:** Prior to the administrative controls implemented on December 14, 1985, the potential for over-loading the EDGs existed as discussed above. With the EDGs over-loaded, the potential existed that safety-related equipment might not start or would not operate at design ratings. Under these conditions, additional damage to the generator and/or engine could also occur.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Turkey Point Unit 3

0 5 0 0 0 2 5 0

YEAR

SEQUENTIAL  
NUMBERREVISION  
NUMBER

8 5

0 4 2

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0 3 OF 0 3

TEXT (If more space is required, use additional NRC Form 288A-1/ (17)

Analysis of Events (continued)

The implementation of administrative controls for the non-safety related equipment identified above will enhance the operator control over these loads placed on the diesel. This operating approach of manually adding or deleting loads during the course of an accident to prevent exceeding the EDG load limit is consistent with the load management strategy reflected in current plant EOPs. Further, this provides proceduralized assurance that the EDG load limit will not be exceeded, since they identify the potential for auto-loading of specific non-safety loads which might otherwise not have been a central post-LOCA operator concern.

Corrective Actions: The following interim and permanent corrective measures have been taken or are planned:

- 1) As an interim measure, administrative controls for the equipment identified herein were put in place on December 14, 1985.
- 2) Immediate operator training was begun, the administrative controls added to EOPs, as each subsequent shift came on duty.
- 3) In order to establish what permanent corrective actions will be taken to enhance the administrative controls applied to the EDG loading, a load management study will be initiated to develop a complete EDG time history loading profile over the entire course of a loss of coolant accident coincident with a loss of offsite power. Based on this load management study, additional procedural guidance or design changes may be proposed to provide greater assurance that the EDG loading commitments identified in the FSAR will be met. This effort is expected to take at least six months to complete. Should additional information result from this EDG load management study, which substantially changes the conclusions reached or corrective actions already identified, an updated LER will be submitted.

Additional Information: No equipment failures were associated with this event. Similar occurrences: None.



FLORIDA POWER & LIGHT COMPANY

JAN 28 1986

L-86-35

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Gentlemen:

Re: Reportable Event 85-42  
Turkey Point Unit 3  
Date of Event: December 14, 1985  
Emergency Diesel Generator Loading

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR to provide notification of the subject event.

Very truly yours,

C. O. Woody  
Group Vice President  
Nuclear Energy

COW/SAV:dh

Attachment

cc: Dr. J. Nelson Grace, Region II, USNRC  
Harold F. Reis, Esquire  
File 933.1  
PNS-LI-86-26

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