FEB 7 2002

L-2002-030
10 CFR 50.90

FPL

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

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Proposed License Amendments
Surveillance Testing 4.1.1.2.g.7 Change for Performing
The 24-Hour Emergency Diesel Generator Functional Testing
During POWER OPERATION
Response to Request for Additional Information

By letter L-2002-009, dated January 16, 2002, Florida Power and Light Company (FPL) requested an amendment to Turkey Point Units 3 and 4 Technical Specification (TS). Specifically, FPL requested to amend Surveillance Requirement 4.8.1.1.2.g.7 to permit the 24 hour functional testing of the Emergency Diesel Generators to be performed during POWER OPERATION. By letter dated February 1, 2002, the U.S. Nuclear Regulatory Commission Staff requested additional information regarding the above referenced FPL submittal. The response to the request for additional information is provided in the Attachment.

FPL has determined that the additional information provided herein does not change the conclusions reached in the original no significant hazards consideration provided in FPL letter L-2002-009.

In accordance with 10 CFR 50.91 (b) (1), a copy of this letter is being forwarded to the State Designee for the State of Florida. If you have any questions on this request, please contact Olga Hanek at (305) 246-6007.

Sincerely,

John P. McElwain
Vice President
Turkey Point Plant

SM
Attachment
cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point
Florida Department of Health

A001

STATE OF FLORIDA)
) ss.
COUNTY OF MIAMI-DADE)

John P. McElwain being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

J. P. McElwain

STATE OF FLORIDA

COUNTY OF MIAMI-DADE

Subscribed and sworn to before me this

7th day of February, 2002,

by John P. McElwain is personally known to me.

Olga Hanek
Name of Notary Public - State of Florida

OLGA HANEK
MY COMMISSION # CC 926970
EXPIRES: June 18, 2004
Bonded Thru Notary Public Underwriters

(Print, type or stamp Commissioned Name of Notary Public)

NRC Question #1: Please describe the various events that can cause loss-of-offsite power (LOOP) while the emergency diesel generator (EDG) is being tested and paralleled to offsite power. In addition, please provide a sequence of events, including timing, assuming that the EDG protective features actuates in response to a LOOP.

FPL Response #1: A simplified one-line diagram of the safety related 4 kV buses is provided below as Figure 1. In order for the bus to experience a LOOP, both the auxiliary and startup transformer breakers must be open. During unit operation, power to the safety-related buses is supplied by the auxiliary transformer. Therefore, the plant response while the EDG is being tested and paralleled to offsite power will be addressed based on the auxiliary transformer breaker being closed initially. Opening of the auxiliary transformer breaker would be the result of one the following:

1. Safety injection
2. Main generator/main transformer lockout
3. Overcurrent/bus fault
4. Spurious/inadvertent operation

The opening of the auxiliary transformer breaker in response to a safety injection signal will generate a fast bus transfer to the startup transformer. The safety injection signal also opens the breaker for the EDG being tested. Should the fast bus transfer fail, the bus would experience a LOOP. The LOOP would be sensed by loss of voltage relays and all load breakers on the associated bus would then be opened by the emergency bus load sequencer. This would be followed by reclosing of the EDG breaker and loading of accident and safe shutdown loads by the emergency bus load sequencer.

The main generator and main transformer lockout relays are actuated by numerous events as listed in the original Proposed License Amendment submittal. A grid-generated LOOP would likely result in actuation of one or both of these lockout relays. Actuation of these lockout relays will generate a fast bus transfer to the startup transformer. The main generator and main transformer lockout relays also open the breaker for the EDG being tested. If the fast bus transfer fails or if offsite power is not available from the switchyard, the bus would experience a LOOP. The LOOP would be sensed by loss of voltage relays and all load breakers on the associated bus would then be opened by the emergency bus load sequencer. This would be followed by reclosing of the EDG breaker and loading of safe shutdown loads by the emergency bus load sequencer.

An overcurrent trip of the auxiliary transformer breaker would be the result of a bus fault based on electrical fault coordination with the bus load breakers. Such an overcurrent trip would result in a bus lockout. The bus lockout trips the breaker for the EDG being tested in order to prevent potential damage to the EDG. No fast bus transfer will take place and the bus will remain de-energized until the cause of the bus fault is identified and corrected.

The spurious or inadvertent opening of the auxiliary transformer breaker would not result in a fast bus transfer or tripping of the EDG breaker. The EDG being tested would attempt to provide power to all connected bus loads and be subject to an overload condition. This would likely result in a relay race between the bus undervoltage protection and the EDG protective trips. Based on the proposed assumption that an EDG protective feature actuates first, the following sequence of events will occur.

- The protective device causes the EDG lockout relay to actuate. This results in a maintained trip signal to the EDG breaker and a shutdown of the EDG engine. The lockout relay also blocks all subsequent start signals until the lockout relay is manually reset.

- As a result of the LOOP and trip of the EDG breaker, the associated bus would experience a loss of power. One second after the loss of voltage relay actuates, the emergency bus load sequencer would initiate bus stripping to open all breakers on the 4 kV bus. A reactor trip would be generated as a result.

- The operators would respond to the reactor trip by entering Procedure EOP-E-0, "Reactor Trip or Safety Injection". Immediate Action Step 3 directs the operator to verify the status of power to the "A" and "B" 4 kV buses. The bus associated with the EDG being tested would be de-energized as a result of the LOOP and EDG lockout. If both buses are de-energized, the operators are directed to transition to Step 3 of Procedure EOP-ECA-0.0, "Loss of All AC Power" (Note: The A & B buses are independent and loss of all AC power would not be expected). If only one 4 kV bus is de-energized, an operator is assigned to restore power using Procedure ONOP-004.2, "Loss of A 4 kV Bus" or Procedure ONOP-004.3, "Loss of B 4 kV Bus" while continuing with EOP-E-0. Step 3 of EOP-E-0 would typically be completed within the first minute following a reactor trip.

Both Buses De-energized	**One Bus De-energized**
• Step 7 of EOP-ECA-0.0 directs the operator to verify both of the EDG lockout relays are reset. Control Room indication of the EDG lockout is available to the operators. The procedure response not obtained instructs the performance of the following substeps: a. Locally reset affected emergency diesel start failure relay by depressing the alarm reset pushbutton. b. Reset affected emergency diesel lockout relay. Step 7 would typically be reached in three to five minutes upon transitioning to EOP-ECA-0.0. If an operator were already present in the EDG room for the surveillance test, performance of the instructed substeps would typically take two minutes. If an operator were not present in the EDG room, an additional two to three minutes would be required.	• Step 4 of ONOP-004.2 and ONOP-004.3 directs the operator to verify that the associated EDG lockout relay is reset. Control Room indication of the EDG lockout is available to the operators. The procedure response not obtained instructs the performance of the following substeps: a. If the opposite 4 kV bus is energized, then try to determine and correct the cause of the lockout relay actuation. b. Locally reset emergency diesel starts failure relay. Step 4 would typically be reached in three to five minutes of entering ONOP-004.2 or ONOP-004.3. With the opposite bus energized, diagnosis of the lockout relay cause is recommended based on good operational practice.

- Upon reset of the lockout relay, the EDG would start as a result of the bus-stripping signal. The EDG breaker would automatically close upon achieving required voltage and frequency. The required safe shutdown loads would then be automatically loaded by the emergency bus load sequencer.

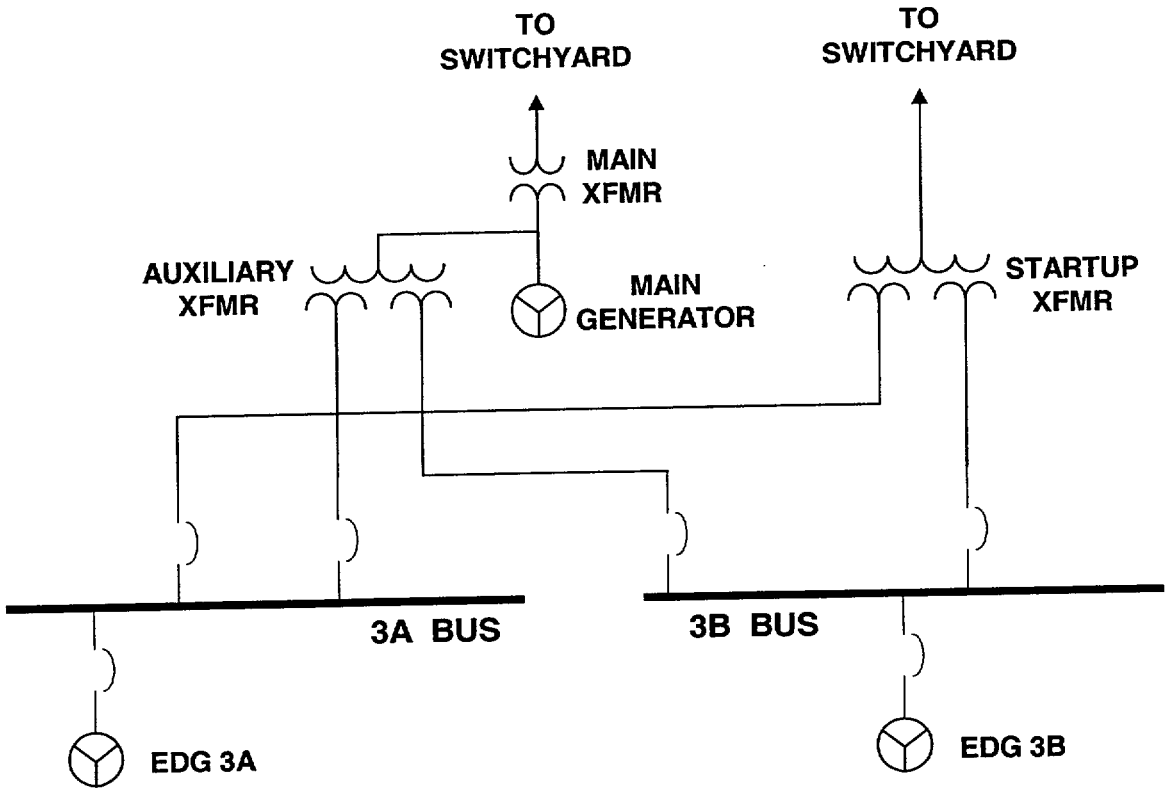

FIGURE 1
TURKEY POINT SIMPLIFIED ONE LINE DIAGRAM

NRC Question #2: Please discuss how many EDGs are needed to perform a safe shutdown during a design basis accident. In addition, please discuss the actions taken when one EDG is declared inoperable for testing to ensure that testing does not affect independent safe shutdown capabilities of the remaining EDGs or the other safety systems.

FPL Response #2: Assuming a LOOP accompanies the accident, two EDGs are required to perform safe shutdown during a design basis accident. This would consist of either two EDGs on the accident unit or one EDG on the accident unit along with one EDG on the opposite unit. Three separate and independent EDGs are required by Technical Specifications to support operation of each unit in Modes 1, 2, 3, and 4. This consists of both EDGs associated with a given unit and one EDG on the opposite unit.

Technical Specification Action Statements 3.8.1.1.b and 3.8.1.1.d require the following actions to be performed when an EDG is removed from service for surveillance testing.

1. Demonstrate operability of required startup transformers and their associated circuits by verifying correct breaker alignments and indicated power availability.
2. Verify that all required systems, subsystems, trains, components, and devices (except safety injection pumps) that depend on the remaining required operable diesel generators as a source of emergency power are also operable.
3. Verify that at least two safety injection pumps are operable and capable of being powered from their associated operable diesel generator.

These requirements are performed by Procedure 0-OSP-023.3, "Equipment Operability Verification with an Emergency Diesel Generator Inoperable" and are performed one hour prior to removing any EDG from service for a surveillance test.