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L-2007-008
10 CFR 50.54(f)

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

Re: Florida Power and Light Company
St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251

**NRC Generic Letter 2006-02
Request for Additional Information
Regarding Resolution of Generic Letter 2006-02, Grid Reliability and the
Impact on Plant Risk and the Operability of Offsite Power
(TAC Nos. MD0947 through MD1050)**

By letter L-2006-073 dated April 3, 2006, Florida Power and Light Company (FPL), the licensee for the St. Lucie Nuclear Plant, Units 1 and 2, and the Turkey Point Nuclear Plant, Units 3 and 4, submitted the 60-day response requested by Generic Letter 2006-02.

By letters dated December 5, and 13, 2006, the Nuclear Regulatory Commission (NRC) staff issued a request for additional information (RAI) to nuclear power plant licensees to support their review of the FPL 60-day response to Generic Letter 2006-02. Specifically, the NRC staff requested St. Lucie Units 1 and 2, and the Turkey Point Units 3 and 4 to respond to RAI question number 5.

The response to the request for additional information is attached.

The attached information is provided pursuant to the requirements of Section 182a of the Atomic Energy Act of 1954, as amended and 10 CFR 50.54(f).

If you should have any questions, please contact Mr. Ching Guey at (561) 694-3137.

A123

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 31, 2007.

Sincerely yours,



J. A. Stall
Senior Vice President, Nuclear and
Chief Nuclear Officer

Attachment

cc: Regional Administrator, Region II
USNRC Project Manager, St. Lucie and Turkey Point
Senior Resident Inspector, USNRC, St. Lucie
Senior Resident Inspector, USNRC, Turkey Point

ATTACHMENT

RESPONSE FOR: ST. LUCIE UNITS 1 AND 2 AND TURKEY POINT UNITS 3 AND 4

By letters dated December 5, and 13, 2006, the Nuclear Regulatory Commission (NRC) staff issued a request for additional information (RAI) to nuclear power plant licensees to support their review of the Florida Power and Light Company (FPL) 60-day response to Generic Letter 2006-02. Specifically, the NRC staff requested a response to RAI question number 5 for St. Lucie Units 1 and 2, and the Turkey Point Units 3 and 4.

NRC REQUESTED INFORMATION

NRC Transmittal Letter

The NRC staff has reviewed the licensee response to GL 2006-02 and has determined that additional information is needed to resolve the issues discussed in the GL.

NRC RAI Question 5: Seasonal Variations in Grid Stress (Reliability and Loss-of-Offsite Power (LOOP) Probability)

Certain regions during certain times of the year (seasonal variations) experience higher grid stress as is indicated in Electric Power Research Institute (EPRI) Report 1011759, Table 4-7, Grid LOOP Adjustment Factor, and NRC NUREG/CR-6890. Do you adjust the base LOOP frequency in your probabilistic risk assessment (PRA) and Maintenance Rule evaluations for various seasons? If you do not consider seasonal variations in base LOOP frequency in your PRA and Maintenance Rule evaluations, explain why it is acceptable not to do so.

FPL RESPONSE

No seasonal adjustment for base Loss of Offsite Power (LOOP) frequency is made for probabilistic risk assessment (PRA) or Maintenance Rule (MR) evaluations at either St. Lucie Nuclear Plant or Turkey Point Nuclear Plant. Rather than simply use a fixed seasonal adjustment, FPL has initiated a more comprehensive program to adjust base LOOP frequency based on actual grid and switchyard conditions as described in greater detail below. This initiative has been implemented by St. Lucie Units 1 and 2 and is in the process of being implemented at Turkey Point Units 3 and 4.

For the St. Lucie Nuclear Plant, administrative procedures control switchyard activities and overall configuration risk management.

Switchyard risk at St. Lucie is evaluated by FPL Station Area Operations supervision based on the type of work activities occurring in that location. Risk is evaluated as High, Medium, Low or None which is communicated to Operations on-shift supervision for entry into the On-Line Risk Monitor (OLRM) for each unit. Once the appropriate switchyard risk entry is made, the OLRM multiplies the baseline initiating event (IE) frequency for plant-centered loss of grid events by a factor of 2, 5 or 10 for LOW, MEDIUM or HIGH switchyard risk, respectively. If switchyard work

is sufficiently minor to present no additional risk, then the switchyard risk level defaults to NONE and the aforementioned baseline IE frequency multiplier is set to a value of 1.

Similarly, grid risk is evaluated by the FPL System Operator for grid conditions based on transmission line status, system loads, available generation capacity, switchyard voltage, fires affecting transmission lines and weather conditions. Again, risk is evaluated as High, Medium, Low or None which is communicated to Operations on-shift supervision for entry into the OLRM for each unit. Once the appropriate grid risk entry is made, the OLRM multiplies the baseline IE frequency for grid-related loss of grid events by a factor of 2, 5 or 10 for LOW, MEDIUM, and HIGH grid risk, respectively. If grid conditions are determined to be normal, then the risk level defaults to NONE and the aforementioned baseline IE frequency multiplier is set to a value of 1.

Grid risk associated with other possible conditions not listed in the controlling administrative procedure that can cause degraded grid conditions will be based on a qualitative assessment by the System Operator in accordance with standard industry guidelines / requirements and FPL operating experience. The grid risk level may be different even with similar conditions depending on the actual grid status and configuration.

If it is determined that there is an increased potential for grid instability with any of the following listed evolutions in progress, the controlling administrative procedure directs that consideration be given to terminating and rescheduling the activity: 1) removing an Emergency Diesel Generator (EDG) from service, 2) removing the Station Blackout (SBO) crosstie from service, 3) performing a load threatening test or surveillance, or 4) removing the "C" (turbine-driven) AFW Pump from service (St. Lucie only). If this maintenance or testing / surveillance activity must be performed under actual or potential degraded grid conditions, risk management actions should include consideration of alternate equipment protection measures or compensatory actions.

The controlling administrative procedure warns that emergent conditions could change the previously performed risk assessment. Worsening grid conditions could impact offsite power availability and change the inputs / assumptions used for the previous risk assessment. According to procedure, a new risk assessment should be performed taking the potential effects of the emergent grid condition into account. Also, according to procedure, risk reassessment should not interfere with or delay measures to place and maintain the plant in a safe condition in response to or preparation for the effects of the emergent grid condition.

The St. Lucie Unit 1 and 2 OLRM models were modified to implement the switchyard and grid risk assessment program described in St. Lucie Plant administrative procedures. Plant specific calculations document the associated changes made to the Unit 1 and 2 OLRMs.

For Turkey Point Nuclear Plant, administrative procedures control switchyard activities and overall configuration risk management. Switchyard and grid risk assessment programs similar to those described in administrative procedures for St. Lucie Nuclear Plant will be implemented through pending changes to Turkey Point administrative procedures during the first quarter of 2007. The only noteworthy differences between switchyard and grid risk assessment at St. Lucie and Turkey Point are as follows:

1. Turkey Point will use a single "dual-unit" OLRM, implemented by a calculation, which evaluates the risk for Units 3 and 4 simultaneously. This is necessitated by the greater

degree of system sharing and cross-connection between units at Turkey Point as compared to St. Lucie. Thus switchyard and grid risk assessments are entered in a single "dual-unit" OLRM for Turkey Point rather than in a separate OLRM for each unit as at St. Lucie.

2. Due to considerable differences between St. Lucie and Turkey Point in the available steam generator feedwater systems, removal of the "C" (turbine-driven) AFW pump from service at Turkey Point does not require giving consideration to terminating and rescheduling this activity if it is determined that there is an increased potential for grid instability.

Major outages at St. Lucie Nuclear Plant and Turkey Point Nuclear Plant are routinely scheduled in the spring and fall respecting the higher system loads typically experienced during the summer and during short-term relatively cold weather during the winter. Plant outages as well as other generation and transmission maintenance are planned to minimize the overall impact on grid stability. Considering the effects of these outages are only part of the process used by FPL to assess grid stability. Both the St. Lucie and Turkey Point OLRMs have required inputs for the existence of high winds (hurricane or tornado warnings) which affect the calculated risk. In addition, the grid risk assessment is a function of the existence of high winds and lightning. All of these factors vary hour-by-hour requiring more flexibility in adjusting base LOOP frequency than that provided by a fixed seasonal adjustment.

In conclusion, FPL does not plan to implement a seasonal adjustment for base LOOP frequency for PRA or MR evaluations at either the St. Lucie or Turkey Point nuclear power plants. For St. Lucie and Turkey Point nuclear power plants, the fixed seasonal adjustment in spring and summer suggested by Table 4-7 (Grid LOOP Adjustment Factor), of Electric Power Research Institute (EPRI) Report 1011759 (Frequency Determination Method for Cascading Grid Events, December 2005) does not adequately cover the potential variations in switchyard and grid conditions caused by a variety of sources including weather. For example, elevating base LOOP frequency only during spring and summer omits over two months of hurricane season which stretches from June 1 to November 30. Additionally, short-term weather events identified by severe thunderstorm, flood, or tornado warnings can occur at any time of year in Florida. Therefore, FPL has initiated a more comprehensive program to adjust base LOOP frequency based on actual grid, switchyard, and weather conditions on a real-time basis. This allows timely consideration of the wide variety of weather conditions typically observed in Florida as well as other factors that could affect offsite power supply.