P. O. BOX 14000, JUNO BEACH, FL 33408

FLORIDA POWER & LIGHT COMPANY

August 5, 1982
L-82-329

Office of Nuclear Reactor Regulation
Attention: Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Clark:

Re: St. Lucie Unit 1
Docket No. 50-335
Degraded Grid Protection

Your letter, dated April 19, 1982, requested additional information on Degraded Grid Protection for St. Lucie Unit 1. Our letter (L-82-217) dated May 24, 1982, responded to several of the questions in your letter. We have now completed our response to question 7 and it is attached.

Our schedule for responding to the remaining questions remains unchanged.

Very truly yours,

Robert E. Uhrig

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/PLP/cab

cc: J. P. O'Reilly, Region II
Harold F. Reis, Esquire

A015

Re: St. Lucie Unit 1
Docket No. 50-335
Degraded Grid Protection

In Response to Question #7 of NRC
letter dated April 19, 1982

Reference: 1, NRC letter to FP&L, dated April 19, 1982

Response to question 7:

Question #7, Reference 1, requested that the licensee submit analysis results which represent worst case overvoltage condition during maximum grid voltage and minimum plant load condition (such as during shutdown rather than minimum operating conditions as previously submitted). Results of the analysis are given in Table A.

The analysis was performed based on the following:

A. Bus loads were measured readings taken during a plant shutdown. Plant condition during this outage period should represent minimum plant loads.

B. The safety related voltages were calculated using these loads while assuming maximum grid voltage expected at St. Lucie Unit #1, 244KV. (Reference Table A, Column 1).

C. Column 2, Table A, is the calculated maximum safety related load terminal voltages.

As can be seen from the table no motor's voltage exceeded the manufacturers recommended +10% tolerance corresponding to a maximum of 4400 volts for 4KV motors and 506 volts for 460V motors. Therefore operation with the present transformer tap settings presents no difficulty during low bus loading conditions and maximum grid voltage.

TABLE A
Voltage Analysis with Unit Shutdown and Grid Voltage 244K

Column 1: Calculated bus voltages.
Column 2: Maximum load terminal voltages for equipment with minimum cable voltage drop, based on full load amperes.

*Switchgear/equipment	column 1 (volts)	column 2 (volts)
*4.16 Swgr. 1A3 (SA)	4376	---
H.P. Saf. Inj. 1A	---	4373.4
L.P. Saf, Inj. 1A	---	4374.3
*4.16Kv Swgr. 1B3 (SB)	4347.7	---
H.P. Saf. Inj. 1B	---	4343.2
L.P. Saf. Inj. 1B	---	4343.8
*480V Swgr. 1A2 (SA)	508.53	---
Cont. Fan Cooler HVS-1A	---	499.1
Cont: Fan Coller HVS-1B	---	497.8
*480 Swgr. 1B2 (SB)	504.2	---
Cont. Fan Cooler HVS - 1C	---	489.9
Cont. Fan Cooler HVS -1D	---	487.1
* Motor Control Center/Equipment	---	---
*480V MCC 1A5 (SA)	504.3	---
High Press. Suction c/o V1v. V3663	---	503.9
Control Rm. M. OAL ISOL. Viv. FCV-25-16	---	503.8

*Switchgear/equipment	column 1 (volts)	column 2 (volts)
*480V MCC 1B5 (SB)	495.2	-----
Air Recirc. Cooler outlet Header B Vlv. MV-14-7	-----	494.8
Control Room North outside air intake Isolation Valve FCV-25-15	-----	494.8
*480V MCC 1A6 (SA)	503.6	-----
Control Rm. Booster Fan HVE-13A	-----	502.5
Reactor Sump Pump Vlv. MV-07-2A	-----	502.7
*480V MCC 1B6 (SB)	495.6	-----
Primary Water Isolation Valve MV-15-1	-----	494.8
Control Room South outside Air intake Isolation Valve FCV-25-15	----	494.4
*480V MCC 1A7 (SA)	501.3	-----
Oil Circ. Pump for 12 Cyl. Engine	-----	501.0
Oil Circ. Pump for 16 Cyl. Engine	-----	501.0
*480 MCC 1B-7 (SB)	495.4	-----
Oil Circ. Pump for 12 Cyl. Engine	-----	495.1
Oil Circ. Pump for 16 Cyl. Engine	-----	495.1