REDACTED

EXHIBIT C

COMPANY: Florida Power & Light Company
TITLE: List of Confidential Workpapers
DOCKET NO.: 030001-EI
DOCKET TITLE: Fuel Cost Recovery Clause
SUBJECT: STAFF'S 1ST SET OF INTERROGATORIES
DATE: February 21, 2003

INTERROG. NO.	DESCRIPTION	NO. OF PAGES	CONF. Y/N	LINE NO./ COL. NO.	FLORIDA STATUTE 366.093(3) Subsection:	AFFIANT
8	Generating Units – Ramp-up time data	Page 2 of 3	Y	6-41	(e)	F. Irizarry
8	Generating Units – Ramp-up time data	Page 3 of 3	Y	6-41	(e)	F. Irizarry
9	Generating Units – Ramp-down time data	Page 2 of 2	Y	6-41	(e)	F. Irizarry
15	Generating Units – Operation data	Page 2 of 2	Y	1-36	(e)	F. Irizarry

DOCUMENT NUMBER-DATE
01863 FEB 24 8
FPSC-COMMISSION CLERK

CONFIDENTIAL

Q. For each generating unit in service that FPL identified in its 2002 Ten Year Site Plan, please respond to the following regarding ramp-up time:

a. Starting at an output of 0 MW, how many hours (if less than one hour, state response in minutes) must each generating unit operate before the unit can deliver its maximum output to the grid?

b. Starting at an output of 0 MW, how many hours (if less than one hour, state response in minutes) must each generating unit operate before the unit can deliver any output to the grid?

A.

a. Nuclear

St. Lucie: Basically there are two types of startup; (1) following refueling and (2) following a shutdown from full power. (1) A startup and power ramp up following refueling is the slowest due to the slow 3%/hr power ramp-up for fuel "pre-conditioning", there are also several power plateaus (each approximately 8 hrs) for testing the new core. From zero to 100% full power will usually take from 2 to 3 days. (2) Startup and power ramp-up following a shutdown from full power will include 1 to 2 hrs of getting the unit from 0% to 11% to 15 % and synchronizing to the grid, then typically power will be increased at 20%/hr with a few 1 hr stops for calibration of instrumentation. Total time from 0% to 100% should be in the range of 8 to 10 hrs.

Turkey Point: Consistent with PSL comments, PTN also has two different types of startups: (1) initial criticality following a refueling and (2) following a mid-cycle shutdown. For case (1) A startup and power ramp up following refueling is the slowest due to the slow 3%/hr power ramp-up for fuel "pre-conditioning" above a base threshold power level of 40%, there are also several power plateaus (each approximately 5 - 8 hrs) for testing the new core. From zero to 100% full power will usually take from 2 to 3 days. 2) Startup and power ramp-up following a shutdown from full power will include 1 hour of getting the unit from 0 MW to 40 MW (approximately 6%) and synchronizing to the grid, then typically power will be increased to 40%, at which the power ascension rate depending on fuel pre-conditioning (length of time at zero power operation) will be typically 10% per hour. Total time from 0% to 100% should be in the range of 8 to 10 hrs.

b. Nuclear

St. Lucie: Output to the grid occurs at 11% to 15% power when the main generator is synchronized to the grid, typically this will take 1 to 2 hours.

Turkey Point: Output to the grid occurs at 40 MW (corresponding to approximately 6% power) when the main generator is synchronized to the grid, typically this will take 1 to 2 hours.

The times given above are estimates only and do not include administrative paperwork processing times, prejob briefs, administrative holds, equipment problems, turnover times, unit stabilization etc. that normally occur.

CONFIDENTIAL

a. Power Generation

For the Power Generating Division (non-nuclear units) the following table shows the approximate times (+/- 30 minutes) before the unit can deliver max power to the grid. This time is a function of the status of the unit at the time it is called to deliver power to the grid. The information in the table reflects a hot standby status for the unit.

[redacted]

Florida Power & Light Company
Docket No. 030001-EI
Staff's First Set of Interrogatories
Question No. 8

CONFIDENTIAL

b. Power Generation

For the Power Generating Division (non-nuclear units) the following table shows the approximate times (+/- 30 minutes) before the unit can deliver any power to the grid. This time is a function of the status of the unit at the time it is called to deliver power to the grid. The information in the table reflects a hot standby status for the unit.

[redacted]

CONFIDENTIAL

Q. **For each generating unit in service that FPL identified in its 2002 Ten Year Site Plan, please respond to the following regarding ramp-down time:**

a. **Starting at a generating unit's maximum output, how many hours (if less than one hour, state response in minutes) must each generating unit operate before the unit can completely shut down?**
b. **Starting at a generating unit's maximum output, how many hours (if less than one hour, state response in minutes) must each generating unit operate before the unit cannot deliver any output to the grid?**

A.

a. Nuclear

St. Lucie: Ramp down time depends on what part of the cycle the down power occurs. Early to midcycle the units can be downpowered at a rate of up to 20%/hr. Late in the cycle the ramp down rates decrease to 2 to 10%/hr due to reactor instability above this rate. Normally the unit will be manually tripped when reaching 25%. Early to midcyle it will take approximately 4 hrs to shutdown (hot standby). Late in the cycle this time will increase to 7.5 hrs to 37 hrs depending on the rate chosen.

Turkey Point: Ramp down time is dependent on several variables which include end of cycle burnup, boron concentration, proposed return to power schedule, reason for the downpower and xenon distribution. Typically a steady-state downpower is modeled for approximately a 20 - 25% downpower ramp, with the general duration of approximately 4 hours.

b. Nuclear

St. Lucie: Since PSL typically trips the Units at 25% to avoid plant instabilities at low power the answer is the same as 9a above.

Turkey Point: Same response as 9 a. We would typically only trip the unit from 25% if we were going into a refueling outage.

The times given above are estimates only and do not include administrative paperwork processing times, prejob briefs, administrative holds, equipment problems, turnover times, unit stabilization etc. that normally occur.

CONFIDENTIAL

a. Power Generation

For the Power Generating Division (non-nuclear units) the following table shows the approximate ramp-down times (+/- 15 minutes) for each unit.

b. Power Generation

Same response as for part a.

[redacted]

CONFIDENTIAL

Q. For each generating unit in service that FPL identified in its 2002 Ten Year Site Plan, what is the minimum number of hours (if less than one hour, state response in minutes) that FPL can operate the unit once the unit has begun delivering real power to the grid?

A. Nuclear –
Nuclear units do not have a minimum number of hours to operate once the unit has begun delivering real power to the grid.

Power Generation -
For the Power Generation Division (non-nuclear units), the following table on page 2 of this response identifies the minimum number of hours that each unit will operate once it begins supplying power to the grid.

Florida Power & Light Company
Docket No. 030001-EI
Staff's First Set of Interrogatories
Question No. 15

CONFIDENTIAL

[redacted]