

State of Florida



ED-FPSC


PM 3:32

MISSION
CLERK

Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: June 16, 2008
TO: Ann Cole, Commission Clerk - PSC, Office of Commission Clerk
FROM: Elisabeth J. Draper, Economic Analyst, Division of Economic Regulation 
RE: Docket No. 080186-EI - Petition for approval of revised underground residential distribution tariffs, by Progress Energy Florida, Inc.

Please place the attached response to Staff's data request of May 1, 2008, received from Progress Energy Florida, Inc., in the above docket. Thank you.

ED:kb

DOCUMENT NO. DATE

05098-08 06/16/08
FPSC - COMMISSION CLERK



May 21, 2008

Ms. Elisabeth Draper
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

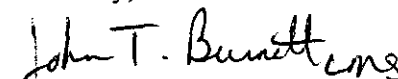
Re: *Petition for approval of revised underground residential distribution tariffs, by
Progress Energy Florida, Inc.; Docket No. 080186-EI*

Dear Ms. Draper:

Please find enclosed Progress Energy Florida Inc.'s responses to Staff's data request dated May 1, 2008 in the above referenced docket.

Thank you for your assistance in this matter. Should you have any questions, please call Nancy Holdstein at (727) 820-5481.

Sincerely,


John T. Burnett

PROGRESS ENERGY FLORIDA, INC.'S RESPONSES TO STAFF'S FIRST DATA REQUEST
Petition for approval of revised underground residential distribution tariffs
Docket No. 080186-EI

- 1. Please provide Schedule No. 7 (176 Lot Underground Material and Labor Cost). This schedule appears to be missing from the petition.**

Answer: Please see Attachment A – Schedule No. 7.

- 2. Please provide Schedule No. 9 (Ganged Meters Overhead Material and Labor Cost). This schedule appears to be missing from the petition.**

Answer: Please see Attachment B – Schedule No. 9.

- 3. Please provide prints of all overhead and underground subdivision layouts.**

Answer: Please see Attachment C – subdivision maps/layouts.

- 4. Please explain in detail for each subdivision how the NPV of operational costs between underground and overhead systems was developed. Please provide workpapers to support the calculation. List all assumptions that go into the calculation.**

Answer: The Company's methodology for determining the Net Present Value of the differential for operational costs, including average historical storm restoration costs over the life of the facilities "NPV of the life cycle costs" is as follows:

For the 5-year period of 2002 through 2006, actual data for overhead and underground distribution O&M and capital costs from the Company's management accounting system were categorized into 4 main categories: (1) operations expense, (2) maintenance expense, (3) replacement capital, and (4) indirect costs. Costs associated with new construction, work done at the request of customers, relocations and major storm damage were excluded. In the instances where it was difficult to distinguish overhead vs. underground work, PEF relied on the materials component of the costs and allocated labor proportionately. Indirect costs were allocated based on direct cost components. The annual average differentials were then calculated. From this, PEF subtracted the expected storm restoration cost differentials calculated using the expected annual storm damage cost of \$21.4 million per the rebuttal testimony of Company witness Steve Harris in Docket No. 050078-EI and applying the actual experience for the 2004/2005 storm seasons for the amount allocable to distribution (80%) and the amounts allocable to overhead (83%) and underground

FLORIDA POWER CORPORATION
OVERHEAD/UNDERGROUND RESIDENTIAL COST DATA

COST PER SERVICE LATERAL UNDERGROUND MATERIAL AND LABOR

SCHEDULE NO. 7

HIGH DENSITY 176 LOT SUBDIVISION
COMPANY OWNED SERVICE LATERALS

ITEM	MATERIAL	LABOR	TOTAL
Service (2)	82.61	118.45	201.06
Primary	36.92	13.47	50.39
Secondary	85.53	29.94	115.47
Transformers	142.72	30.72	173.44
TRENCHING:			
Prim. & Secondary	0.00	87.95	87.95
Service	0.00	90.85	90.85
Sub-Total	347.78	371.38	719.16
Stores Handling(3)	43.34	0.00	43.34
Sub-Total	391.12	371.38	762.50
Engineering(5)	0.00	152.50	152.50
TOTAL	391.12	523.88	915.00

1-Includes Sales Tax.

2-Includes Meter and Meter Socket.

3-8.7% of all material:

118.38

and meters with a cost of:

32.00

4-Includes Administration, General and Transportation.

5-20% of all matl. and labor:

122.92

and meters with a cost of:

41.45

**FLORIDA POWER CORPORATION
 OVERHEAD/UNDERGROUND RESIDENTIAL COST DATA**

COST PER SERVICE OVERHEAD MATERIAL AND LABOR

SCHEDULE NO. 9

**HIGH DENSITY 176 LOT SUBDIVISION
 GANGED METERS**

ITEM	MATERIAL	LABOR	TOTAL
Service(2)	72.16	43.18	115.34
Primary	31.69	29.46	61.15
Secondary	7.47	2.25	9.72
Initial Tree Trim	0.00	0.00	0.00
Poles	30.79	12.88	43.67
Transformers	95.33	9.38	104.71
Sub-Total(1)	237.44	97.15	334.59
Stores Handling(3)	29.63	0.00	29.63
Sub-Total	267.07	97.15	364.22
Engineering(5)	0.00	72.84	72.84
TOTAL	267.07	169.99	437.06

1-Includes Sales Tax.

2-Includes Meter and Meter Socket.

3-8.7% of all material:

71.12

and meters with a cost of:

32.00

4-Includes Administration, General and Transportation.

5-20% of all matl. and labor:

75.49

and meters with a cost of:

41.45

“Attachment C”
URD Data Request
Dkt# 080186-EI

MAPS

Progress Energy Florida
Actuals for 5 Year Period of 2002-2006
Summary of NPV Life Cycle Costs per mile for Overhead and Underground Distribution

	Including Storm
5 year average OH Unit Costs in 2007 Dollars - Annual	\$ 4,433
5 year average UG Unit Costs in 2007 Dollars - Annual	\$ 5,488
Differential in 2007 Dollars - OH more (less) than UG	<u>\$ (1,055)</u>

NPV of 38 Year Life Cycle

Overhead	\$ 69,576
Underground	\$ 86,142
Differential - OH more (less) than UG	\$ (16,566)
Check	0

“Attachment D”
 URD Data Request
 Dkt# 080186-EI

PSC FILING PROJECT
 TYPICAL
 UG RESIDENTIAL 5/0



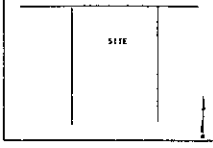
NOTES:
 17,989' PRIMARY CABLE 1/8 AL
 3.8944' SECONDARY CABLE TO FP PEDESTALS 3/8 AL
 6,508' SECONDARY CABLE TO FP PEDESTALS 4/8 AL
 3,169' SECONDARY CABLE TO FP PEDESTALS 2/8 AL
 62' SECONDARY PEDESTALS UPRIGHT (10" X 14")
 38' SECONDARY PEDESTALS FLUSHMOUNT (9" X 14" X 12")
 12' SECONDARY PEDESTALS FLUSHMOUNT (12" X 20" X 17")
 17,928' PRIMARY AND SECONDARY TRENCHING

TRANSFORMER SUMMARY	
19-58 KVA =	958 KVA
3-25 KVA =	75 KVA
TOTAL =	1025 KVA

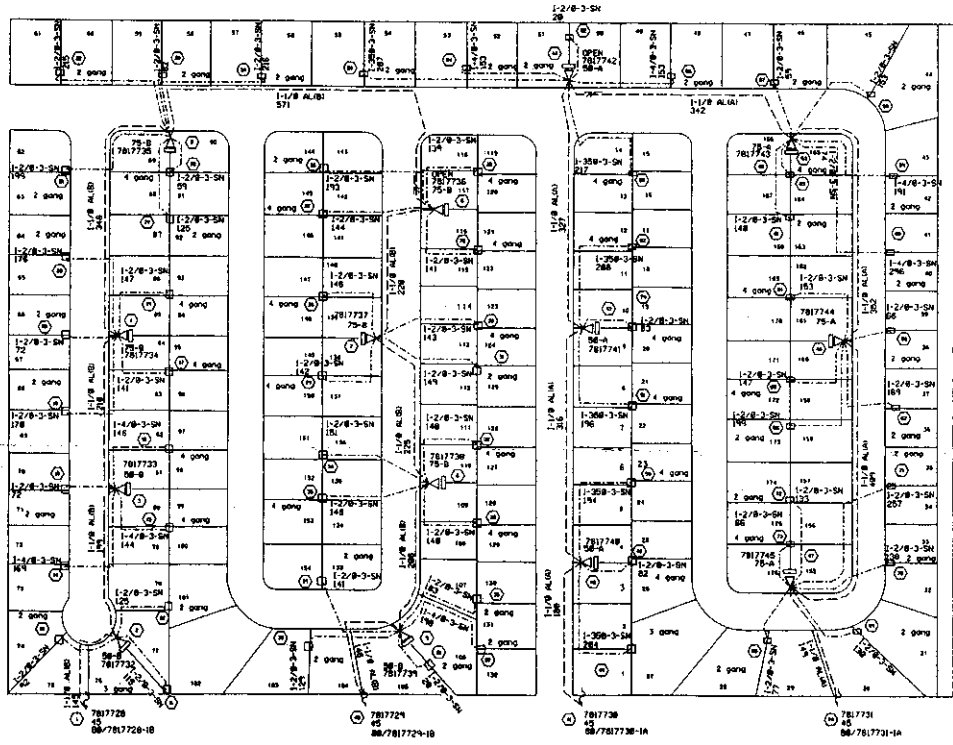
CONSTRUCTION NOTES:
 01. JOB SAFETY BRIEFING TO BE HELD BEFORE JOB BEGINS.
 02. THIS WORK UNDER NEIL THORP FOR 120-240V-1PH UNDERGROUND SERVICE TO
 BE INSTALLED PER LOT SUBDIVISION.
 03. UTILITIES SHALL BE INSTALLED TO UG RESIDENTIAL 5/0 ACRES TOTAL NET ACRES = 26.3
 04. UTILITIES SHALL BE DESIGNED FOR CLASS E HOMES WITH 3.5 TON A/C UNITS
 05. ALL UTILITIES SHALL BE INSTALLED PER LOCAL CODES AND STANDARDS.
 06. ALL UTILITIES SHALL BE INSTALLED PER LOCAL CODES AND STANDARDS.
 07. ALL UTILITIES SHALL BE INSTALLED PER LOCAL CODES AND STANDARDS.
 08. ALL UTILITIES SHALL BE INSTALLED PER LOCAL CODES AND STANDARDS.
 09. ALL UTILITIES SHALL BE INSTALLED PER LOCAL CODES AND STANDARDS.
 10. ERECTION ALONG RIGHT-OF-WAY.

PSC FILING PROJECT
TYPICAL MHP W/
GANGED METERS

LOCATION SKETCH
NOT TO SCALE



PROPOSED
PRIMARY SCHEMATIC
UPSTREAM DEVICE
1645686
UG TRANSFORMER



PSC FILING PROJECT
TYPICAL MHP W/
GANGED METERS
HIGH DENSITY

NOTES

- CLASS 3 MOBILE HOMES WITH 3.5 TON A/C
- 7.9 KVA PER LOT
- CUSTOMER OWNED METER PEDESTALS
- 8 # 75 KVA TRANSFORMERS
- 6 # 50 KVA TRANSFORMERS
- 14 - 900 KVA TOTAL
- 4732 FT PRIMARY CABLE 4/0
- 1371 FT 350-350-4/0 AL DIRECT BURIED SECONDARY CABLE TO CUSTOMER OWNED METER PEDESTALS
- 1522 FT 4/0-4/0-2/0 AL DIRECT BURIED SECONDARY CABLE TO CUSTOMER OWNED METER PEDESTALS
- 6728 FT 2/0-2/0-2 AL DIRECT BURIED SECONDARY CABLE TO CUSTOMER OWNED METER PEDESTALS
- WIRE LENGTHS INCLUDE 10% MAKEUP
- 8857 FT PRIMARY & SECONDARY TRENCH

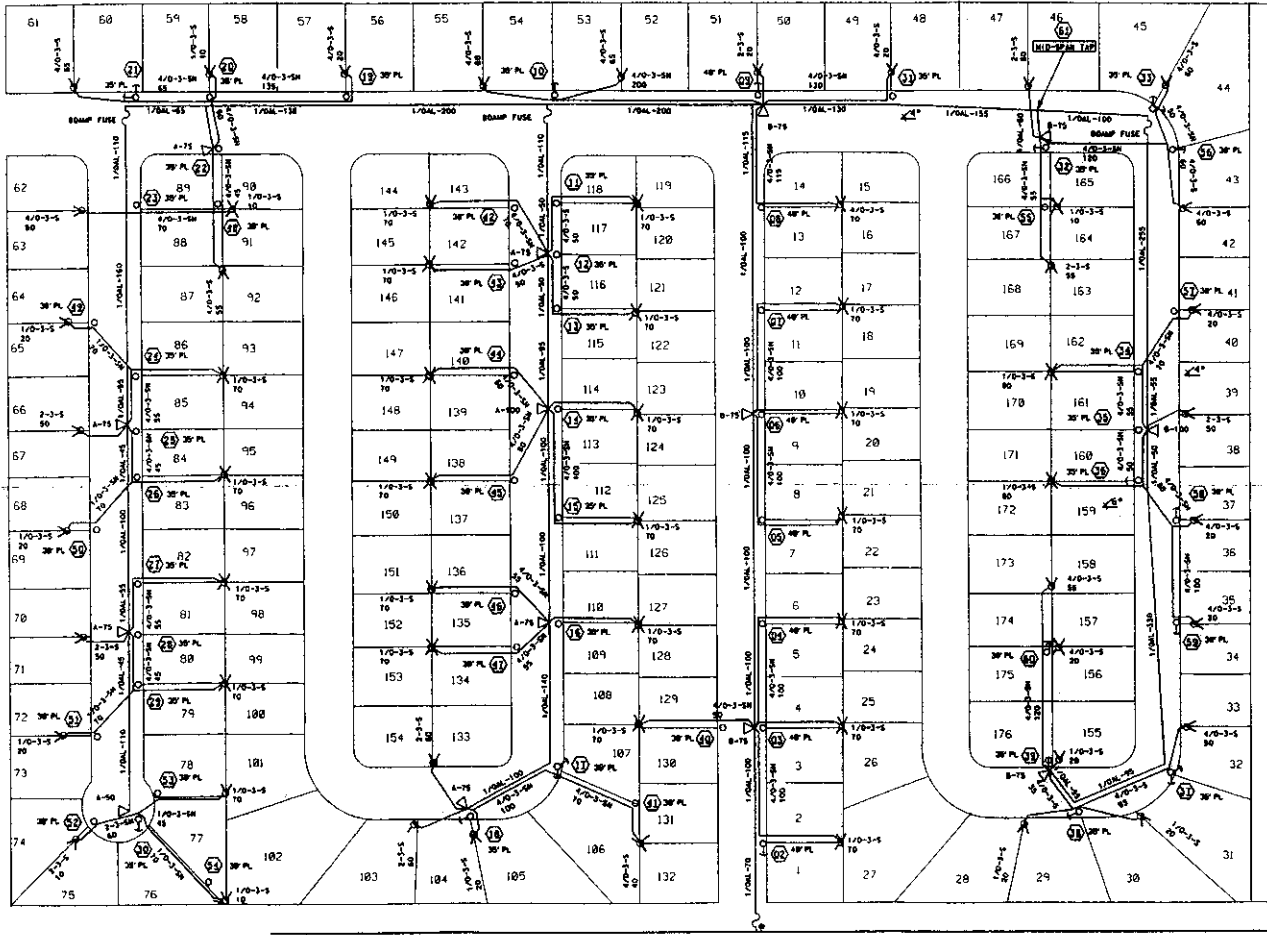
LEGEND

- TERMINAL POLE
- ~ FUSED OUTLET
- ⚡ PAD MOUNT TRANSFORMER
- CUSTOMER OWNED TWO, THREE, OR FOUR GANGED METER PEDESTAL AS NOTED
- PRIMARY CABLE
- - - SECONDARY CABLE
- WORK LOCATION NUMBER

PLEASE OBTAIN THE METER FINAL COMMENT AT ALL POINTS OF RELIEF. WORKING WITH LOCAL ISSUES AND PROVIDING THE NEAREST SERVICE POINT TO THE CONSTRUCTION POINT AT THE P.O. DEVELOPER'S SIGNATURE AND COMPLETE RECEIPT OF THIS INFORMATION.

UG: 2308118
RC: TA
SL: TA

ADDRESS: PSC AREA:	DATE: REV:	REVISIONS: REV. NO. DATE	PROJECT FILING PROJECT TYPICAL MHP W/ GANGED METERS	APPROVED: DATE: LARRY POSEY	DATE: 1/2/2008	SHEET: 1 OF 1
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PSC FILING PROJECT
 TYPICAL MHP W/
 GANGED METERS
 (OVERHEAD DESIGN- 176 LOTS)

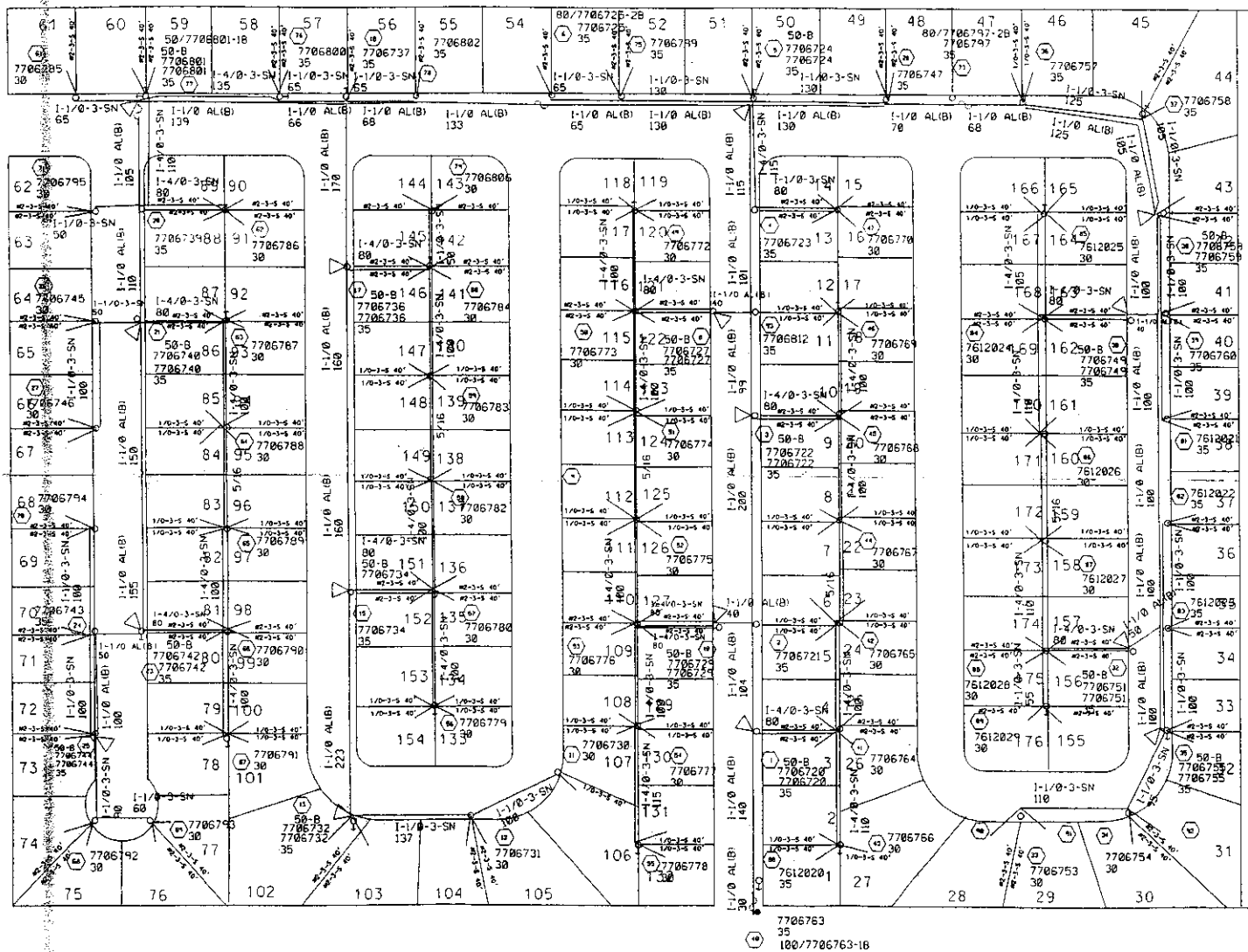
LEGEND

- PROPOSED POLE
- ⊕ FUSED CUTOUT
- ▽ POLE MOUNTED TRANSFORMER
- ↓ DOWN GUY AND ANCHOR
- ⊙ WORK LOCATION NUMBER
- 170AL-XXX OVERHEAD PRIMARY CONDUCTOR
- 170-3-SH / 470-3-S OVERHEAD SECONDARY CONDUCTOR
- ✱ OVERHEAD SERVICE DROP TO CUSTOMER GANGED METER BANK POLE

- THIS DESIGN REQUIRES:**
- 1-50 KVA, 11-75 KVA & 2-100 KVA POLE MOUNTED TRANSFORMERS
 - 8-40 FT, 30-35 FT & 21- 30 FT WOOD POLES
 - 6437 FT 170AL PRIMARY CONDUCTOR
 - 4001 FT 470 TPX SECONDARY / SERVICE CABLE
 - 2378 FT 170 TPX SECONDARY / SERVICE CABLE
 - 436 FT 2 TPX SECONDARY / SERVICE CABLE

100AMP FUSES
 4.5B PH

ADDRESS	SEE WORK AREA	REVISED	PSC FILING PROJECT TYPICAL MHP W/ GANGED METERS	WORK REQUEST	APPROVED	SHEET
	BL. TWP. R1C			2318108	DATE	
CONTACT:	City/Zone		PROGRESS ENERGY - FLORIDA	CHECKED BY: JEFF ZAMARIN	DATE: 02/20/08	OF
				OPERATING CENTER	SCALE	



OVERHEAD DESIGN FOR A MOBILE HOME PARK
 176 LOTS, 176 SINGLE SERVICES (40' AVERAGE)

CRITERIA: DOUBLE WIDE MOBILE HOMES
 WITH A 3.5 TON A/C

INVENTORY FOR THIS JOB:

- 16 - 50 KVA POLE MOUNT TRANSFORMERS
- 42 - 30' WOOD POLES
- 36 - 35' WOOD POLES
- 3901' - 1/0 AAC PRIMARY OVERHEAD WIRE
- (6334' 1/0 AAC TOTAL INCLUDING NEUTRAL)
- 2447' - 1/0 TRIPLEX AERIAL CABLE (SECONDARY)
- 3176' - 4/0 TRIPLEX AERIAL CABLE (SECONDARY)
- 4368' - #2 TRIPLEX SERVICE CABLE
- 3024' - 1/0 TRIPLEX SERVICE CABLE

7706763
 35
 180/7706763-18

ADDRESS:	180 W. WILSON ST. TALLahas, FL 32304	APPROVED:	DATE:
CONTACT:		APPROVED:	DATE:
DESIGNER:	DIANA JABRA	APPROVED:	DATE:
CHECKED:		APPROVED:	DATE:
SCALE:	AS SHOWN	APPROVED:	DATE:

Progress Energy Florida
 Calculation of NPV for Life Cycle
 UG vs. OH based 5 yr Avg Unit Cost of Circuit Miles

Discount Rate	Florida WACC	8.10%															
Tax Rate		0.00%															
Discount Factor		0.961805271	0.889736606	0.823068091	0.761395089	0.704343283	0.651566404	0.60274413	0.557580138	0.515800313	0.477151076	0.44139785	0.408323636	0.377727692	0.349424322	0.323241741	0.299021037
	NPV	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total Cost w/Storm Costs		-1,055.41	-1,081.79	-1,108.84	-1,133.79	-1,159.30	-1,185.38	-1,212.05	-1,239.32	-1,267.21	-1,295.72	-1,324.87	-1,354.68	-1,385.16	-1,416.33	-1,448.20	-1,480.78
NPV	\$ (16,566.33)	-1,055.41	-1,081.79	-1,108.84	-1,133.79	-1,159.30	-1,185.38	-1,212.05	-1,239.32	-1,267.21	-1,295.72	-1,324.87	-1,354.68	-1,385.16	-1,416.33	-1,448.20	-1,480.78
5 year average OH Unit Costs in 2007 Dollars		\$ 4,433															
5 year average UG Unit Costs in 2007 Dollars		\$ 5,488															
Delta in 2007 Dollars		\$ (1,055)															

0.276615206	0.255888257	0.236714391	0.218977235	0.202569135	0.187390504	0.173349218	0.160360053	0.148344175	0.137228654	0.126946026	0.117433882	0.108634488	0.100494439	0.092964328	0.085998453	0.079554536	0.073593465	0.068079061	0.062977855	0.058258885	0.053893511
2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
-1,514.10	-1,548.17	-1,583.00	-1,618.62	-1,655.04	-1,692.27	-1,730.35	-1,769.28	-1,809.09	-1,849.80	-1,891.42	-1,933.97	-1,977.49	-2,021.98	-2,067.48	-2,113.99	-2,161.56	-2,210.19	-2,259.92	-2,310.77	-2,362.76	-2,415.93
-1,514.10	-1,548.17	-1,583.00	-1,618.62	-1,655.04	-1,692.27	-1,730.35	-1,769.28	-1,809.09	-1,849.80	-1,891.42	-1,933.97	-1,977.49	-2,021.98	-2,067.48	-2,113.99	-2,161.56	-2,210.19	-2,259.92	-2,310.77	-2,362.76	-2,415.93

Progress Energy Florida
 Calculation of NPV for Life Cycle
 Overhead based 5 yr Avg Unit Cost of Circuit Miles

Discount Rate	Florida WACC	8.10%															
Tax Rate		0.00%															
Discount Factor		0.961805271	0.889736606	0.823068091	0.761395089	0.704343283	0.651566404	0.60274413	0.557580138	0.515800313	0.477151076	0.44139785	0.408323636	0.377727692	0.349424322	0.323241741	0.299021037
	NPV	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total Cost w/Storm Costs		4,432.51	4,543.33	4,656.91	4,761.69	4,868.83	4,978.38	5,090.39	5,204.93	5,322.04	5,441.78	5,564.22	5,689.42	5,817.43	5,948.32	6,082.16	6,219.01
NPV	\$69,575.54	4,432.51	4,543.33	4,656.91	4,761.69	4,868.83	4,978.38	5,090.39	5,204.93	5,322.04	5,441.78	5,564.22	5,689.42	5,817.43	5,948.32	6,082.16	6,219.01

Circuit Miles fr FRAME

	Overhead				
	2002	2003	2004	2005	2006
Grand Totals with Entire (All Depts) Major Storm Costs	24,377	24,605	24,828	24,930	25,238
Costs in 2007 Dollars	103,973,927	181,252,220	94,092,315	83,329,473	85,772,453
Unit Costs (in Circuit Miles) in 2007 Dollars	\$ 4,265	\$ 7,366	\$ 3,790	\$ 3,343	\$ 3,399
5 year average Costs in 2007 Dollars	\$ 109,684,078				
5 year average Unit Costs in 2007 Dollars	\$ 4,433				

0.276615206	0.255888257	0.236714391	0.218977235	0.202569135	0.187390504	0.173349218	0.160360053	0.148344175	0.137228654	0.126946026	0.117433882	0.108634488	0.100494439	0.092964328	0.085998453	0.079554536	0.073593465	0.068079061	0.062977855	0.058258885	0.053893511
2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
6,358.93	6,502.01	6,648.31	6,797.89	6,950.85	7,107.24	7,267.15	7,430.66	7,597.85	7,768.80	7,943.60	8,122.33	8,305.09	8,491.95	8,683.02	8,878.39	9,078.15	9,282.41	9,491.26	9,704.82	9,923.18	10,146.45
6,358.93	6,502.01	6,648.31	6,797.89	6,950.85	7,107.24	7,267.15	7,430.66	7,597.85	7,768.80	7,943.60	8,122.33	8,305.09	8,491.95	8,683.02	8,878.39	9,078.15	9,282.41	9,491.26	9,704.82	9,923.18	10,146.45

**Progress Energy Florida
Calculation of NPV for Life Cycle
Underground based 5 yr Avg Unit Cost of Circuit Miles**

Discount Rate	Florida WACC	8.10%															
Tax Rate		0.00%															
Discount Factor		0.961805271	0.889736606	0.823068091	0.761395089	0.704343283	0.651566404	0.60274413	0.557580138	0.515800313	0.477151076	0.44139785	0.408323636	0.377727692	0.349424322	0.323241741	0.299021037
	NPV	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total Cost w/Storm Costs		5,487.92	5,625.12	5,765.75	5,895.48	6,028.13	6,163.76	6,302.44	6,444.25	6,589.24	6,737.50	6,889.10	7,044.10	7,202.59	7,364.65	7,530.36	7,699.79
NPV	\$86,141.88	5,487.92	5,625.12	5,765.75	5,895.48	6,028.13	6,163.76	6,302.44	6,444.25	6,589.24	6,737.50	6,889.10	7,044.10	7,202.59	7,364.65	7,530.36	7,699.79

Circuit Miles fr FRAME

Grand Totals with Entire (All Depths) Major Storm Costs

Costs in 2007 Dollars

Unit Costs (in Circuit Miles) in 2007 Dollars

5 year average Costs in 2007 Dollars

5 year average Unit Costs in 2007 Dollars

85,685,207
\$ 5,488

Underground				
2002	2003	2004	2005	2006
14,186	14,949	15,993	17,199	18,488
86,216,063	113,827,274	53,504,600	50,462,246	65,014,442
106,936,898	138,051,813	61,794,045	55,049,723	66,593,557
\$ 7,538	\$ 9,235	\$ 3,864	\$ 3,201	\$ 3,602

0.276615206	0.255888257	0.236714391	0.218977235	0.202569135	0.187390504	0.173349218	0.160360053	0.148344175	0.137228654	0.126946026	0.117433882	0.108634488	0.100494439	0.092964328	0.085998453	0.079554536	0.073593465	0.068079061	0.062977855	0.058258885	0.053893511
2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
7,873.03	8,050.18	8,231.31	8,416.51	8,605.88	8,799.51	8,997.50	9,199.95	9,406.95	9,618.60	9,835.02	10,056.31	10,282.58	10,513.93	10,750.50	10,992.38	11,239.71	11,492.60	11,751.19	12,015.59	12,285.94	12,562.37
7,873.03	8,050.18	8,231.31	8,416.51	8,605.88	8,799.51	8,997.50	9,199.95	9,406.95	9,618.60	9,835.02	10,056.31	10,282.58	10,513.93	10,750.50	10,992.38	11,239.71	11,492.60	11,751.19	12,015.59	12,285.94	12,562.37



Historical Unit Cost Summary
2002 to 2006 Comparison Cost per Circuit Mile (OH vs. UG)

Replacements																	
Activities	%	2002		%	2003		%	2004		%	2005		%	2006			
		Capital	O&M		Capital	O&M		Capital	O&M		Capital	O&M					
D5201 - CONSTRUCT OH SYS IMPROVEMENTS	32%	5,885,998	5,885,998	41%	10,946,427	10,946,427	48%	6,479,293	6,479,293	47%	2,827,031	2,827,031	29%	3,173,142	3,173,142		
D5304 - INSTALL/REMOVE METERS	1%	67,971	67,971	40%	3,915,799	3,915,799	78%	3,877,894	3,877,894	100%	5,296,966	5,296,966	29%	1,714,191	1,714,191		
D7105 - REPLACE POLES ID'D BY INSPECTN	97%	2,781,138	2,781,138	94%	3,461,922	3,461,922	97%	578,154	578,154	100%	565,791	565,791	100%	3,249,741	3,249,741		
D7201 - PROV AL/SL LAMPS/PHOT CTLS-MTL	95%	2,694,447	2,694,447	90%	5,001,268	5,001,268	94%	1,978,839	1,978,839	89%	2,441,265	2,441,265	84%	2,456,571	2,456,571		
D7211 - AREA&SL CABLE REPLACE-CAP (Start 07)																	
D7212 - AREA & STREET LIGHT OH/UG-CAP (Start 07)																	
D7213 - OUTAGE RESTORE - OH REPLACE (Start 05)											83%	1,812,509	1,812,509	105%	2,693,321	2,693,321	
D7214 - OUTAGE RESTORE - U/G REPLACE (Start 05)											1%	17,287	17,287	2%	25,053	25,053	
Operations																	
Activities	%	2002		%	2003		%	2004		%	2005		%	2006			
		Capital	O&M		Capital	O&M		Capital	O&M		Capital	O&M					
B6102 - MODIFY IT	50%	154,381	154,381	50%	46,133	46,133	50%	50,270	50,270	50%	61,830	61,830	50%	478,292	478,292		
D5401 - LOCATE UNDERGROUND LINES	10%	179,668	179,668	10%	391,111	391,111	10%	250,030	250,030	10%	257,419	257,419	10%	274,776	274,776		
D6102 - PERFORM LINE OPERATIONS	0%			44%	1,563,024	1,563,024	72%	2,953,561	2,953,561	0%			100%	1,866,696	1,866,696		
D6103 - PERFORM SUBSTATION OPERATIONS	50%	2,089	2,089	50%	1,492	1,492	50%	1,009	1,009	50%	1,626	1,626	50%	1,905,791	1,905,791		
D6206 - PERF DISTRIBUTION DISPATCHING	50%	2,412,333	2,412,333	50%	4,409,716	4,409,716	50%	2,413,763	2,413,763	50%	2,048,853	2,048,853	50%	1,905,791	1,905,791		
D6208 - SD-99 ORDERS (Start 07)																	
D7108 - PERF ROW MAINT - DISTRIBUTION	90%	11,894,813	11,894,813	90%	24,426,017	24,426,017	90%	14,042,076	14,042,076	90%	12,922,147	12,922,147	90%	15,992,640	15,992,640		
Maintenance																	
Activities	%	2002		%	2003		%	2004		%	2005		%	2006			
		Capital	O&M		Capital	O&M		Capital	O&M		Capital	O&M					
D5202 - CONSTRUCT UG SYS IMPROVEMENTS	2%	297,096	297,096	2%	334,299	334,299	2%	125,233	125,233	28%	3,357,543	3,357,543	31%	5,841,206	5,841,206		
D6101 - PROVIDE OPERATIONS ENGINEERING	31%	6,082,750	6,082,750	39%	8,142,816	8,142,816	7%	94,747	94,747	20%	313,080	313,080	27%	429,818	429,818		
D7101 - MAINTAIN OVERHEAD LINES - PM	69%	279,769	279,769	-2%	(4,482)	(4,482)	0%			1%	1,158	1,158	3%	6,621	6,621		
D7102 - MAINTAIN UG LINES - PM	2%	3,435	3,435	0%			0%			0%			0%				
D7103 - INSPECT DISTRIBUTN FACILITIES	13%	396,162	396,162	21%	688,845	688,845	100%	30,197	30,197	0%			-198%	(1,664,340)	(1,664,340)		
D7104 - REINFORCE POLES	100%	194,864	194,864	100%	431,890	431,890	100%	112,074	112,074	100%	15,224	15,224	100%	6,853	6,853		
D7106 - TREAT POLES - GROUND LINE	100%	549,946	549,946	100%	978,976	978,976	100%	351,085	351,085	100%	155,156	155,156	100%	2,300,531	2,300,531		
D7107 - MAINT METERS/METERING EQPMT - PM	50%	8,526	8,526	50%	224,877	224,877	50%	351,835	351,835	50%	311,648	311,648	50%	326,444	326,444		
D7203 - OUTAGE RESTORE - OH REPAIR	68%	14,239,307	14,239,307	73%	27,200,520	27,200,520	64%	12,619,779	12,619,779	91%	11,616,454	11,616,454	92%	8,849,861	8,849,861		
D7204 - OUTAGE RESTORE - U/G REPAIR	5%	705,453	705,453	8%	2,060,588	2,060,588	4%	480,529	480,529	11%	931,122	931,122	8%	636,799	636,799		
D7205 - REPAIR TRANSFORMERS	50%	16,256	16,256	50%	336,650	336,650	50%	151,320	151,320	50%	41,737	41,737	50%	273,467	273,467		
D7207 - REPAIR STREET LIGHTS	86%	3,807,610	3,807,610	94%	8,169,022	8,169,022	96%	5,581,836	5,581,836	97%	4,488,963	4,488,963	95%	4,079,599	4,079,599		
D7208 - REPAIR METERS & METERING EQPMT	92%	904,742	904,742	82%	1,093,030	1,093,030	96%	246,370	246,370	94%	289,156	289,156	96%	368,055	368,055		
D7209 - CLEAN UP OIL SPILLS	80%	649,222	649,222	93%	1,513,908	1,513,908	99%	978,436	978,436	97%	651,676	651,676	99%	879,496	879,496		
D7210 - CORRECT MAINT - LIGHTING CABLE	0%			0%			2%	8,048	8,048	6%	30,792	30,792	6%	22,072	22,072		
D7215 - CORRECT MAINT - OH REPAIR (Start 05)										5%	1,284,127	1,284,127	53%	1,067,658	1,067,658		
D7216 - CORRECT MAINT - U/G REPAIR (Start 05)										4%	63,247	63,247	3%	84,701	84,701		
D7217 - CORRECT MAINT - OH REPLACE (Start 05)										54%	599,278	599,278	75%	1,436,022	1,436,022		
D7218 - CORRECT MAINT - U/G REPLACE (Start 05)										4%	110,479	110,479	4%	158,950	158,950		



Historical Unit Cost Summary
2002 to 2006 Comparison Cost per Circuit Mile (OH vs. UG)

Activities	Replacements																			
	%	2002	Capital	O&M	%	2003	Capital	O&M	%	2004	Capital	O&M	%	2005	Capital	O&M	%	2006	Capital	O&M
D5201 - CONSTRUCT OH SYS IMPROVEMENTS	68%	12,229,659	12,229,659	-	59%	15,733,545	15,733,545	-	52%	7,019,746	7,019,746	-	53%	3,223,611	3,223,611	-	71%	7,708,141	7,708,141	-
D5304 - INSTALL/REMOVE METERS	99%	5,829,474	-	5,829,474	60%	5,964,216	-	5,964,216	22%	1,106,924	-	1,106,924	0%	-	-	-	71%	4,098,870	-	4,098,870
D7105 - REPLACE POLES ID'D BY INSPECTN	3%	71,678	71,678	-	6%	205,829	205,829	-	3%	15,989	15,989	-	0%	-	-	-	0%	-	-	-
D7201 - PROV AL/SL LAMPS/PHOT CTLS-MTL	5%	130,507	130,507	-	10%	541,672	541,672	-	6%	134,368	134,368	-	11%	298,434	298,434	-	16%	483,764	483,764	-
D7211 - AREA&SL CABLE REPLACE-CAP (Start 07)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D7212 - AREA & STREET LIGHT OH/UG-CAP (Start 07)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D7213 - OUTAGE RESTORE - OH REPLACE (Start 05)	-	-	-	-	-	-	-	-	-	-	-	-	17%	363,015	363,015	-	-5%	(136,569)	(136,569)	-
D7214 - OUTAGE RESTORE - UG REPLACE (Start 05)	-	-	-	-	-	-	-	-	-	-	-	-	99%	1,390,733	1,390,733	-	98%	1,575,494	1,575,494	-
Operations																				
Activities	%	2002	Capital	O&M	%	2003	Capital	O&M	%	2004	Capital	O&M	%	2005	Capital	O&M	%	2006	Capital	O&M
B6102 - MODIFY IT	50%	154,381	-	154,381	50%	46,133	-	46,133	50%	50,270	-	50,270	50%	61,830	-	61,830	50%	478,292	-	478,292
D5401 - LOCATE UNDERGROUND LINES	90%	1,617,008	169,701	1,455,308	90%	3,520,000	352,000	3,168,000	90%	2,250,267	225,027	2,025,241	90%	2,316,772	231,677	2,085,095	90%	2,472,987	247,299	2,225,688
D6102 - PERFORM LINE OPERATIONS	100%	1,625,776	-	1,625,776	56%	2,004,438	-	2,004,438	28%	1,162,084	-	1,162,084	100%	1,833,492	-	1,833,492	0%	-	-	-
D6103 - PERFORM SUBSTATION OPERATIONS	50%	2,089	1,045	1,045	50%	1,492	746	746	50%	1,009	505	505	50%	1,626	813	813	50%	-	-	-
D6206 - PERF DISTRIBUTION DISPATCHING	50%	2,412,333	-	2,412,333	50%	4,409,716	-	4,409,716	50%	2,413,763	-	2,413,763	50%	2,048,853	-	2,048,853	50%	1,905,791	-	1,905,791
D6208 - SD-99 ORDERS (Start 07)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D7108 - PERF ROW MAINT - DISTRIBUTION	10%	1,321,646	-	1,321,646	10%	2,714,002	-	2,714,002	10%	1,560,231	-	1,560,231	10%	1,435,794	-	1,435,794	10%	1,776,960	-	1,776,960
Maintenance																				
Activities	%	2002	Capital	O&M	%	2003	Capital	O&M	%	2004	Capital	O&M	%	2005	Capital	O&M	%	2006	Capital	O&M
D5202 - CONSTRUCT UG SYS IMPROVEMENTS	98%	12,172,407	11,685,510	486,896	98%	16,215,601	15,566,977	648,624	98%	5,161,084	4,954,541	206,543	72%	8,633,577	8,288,234	345,343	69%	13,013,587	12,493,044	520,543
D6101 - PROVIDE OPERATIONS ENGINEERING	69%	13,851,696	-	13,851,696	61%	12,865,191	-	12,865,191	93%	1,275,760	-	1,275,760	80%	1,254,755	-	1,254,755	73%	1,191,429	-	1,191,429
D7101 - MAINTAIN OVERHEAD LINES - PM	31%	126,566	37,970	88,596	102%	281,068	84,321	196,748	100%	(1,908.00)	(572)	(1,336)	99%	180,965	54,290	126,676	97%	235,677	70,703	164,974
D7103 - INSPECT DISTRIBUTN FACILITIES	98%	193,233	-	193,233	100%	181,557	-	181,557	100%	-	-	-	100%	-	-	-	100%	-	-	-
D7104 - REINFORCE POLES	87%	2,714,817	-	2,714,817	79%	2,637,198	-	2,637,198	0%	-	-	-	100%	106,681	-	106,681	298%	2,505,680	-	2,505,680
D7106 - TREAT POLES - GROUND LINE	0%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-
D7107 - MAINT METERS/METERNG EQPMT - PM	50%	8,526	-	8,526	50%	224,877	-	224,877	50%	351,835	-	351,835	50%	311,648	-	311,648	50%	326,444	-	326,444
D7203 - OUTAGE RESTORE - OH REPAIR	32%	6,726,722	-	6,726,722	27%	10,036,848	-	10,036,848	36%	7,180,296	-	7,180,296	9%	1,161,423	-	1,161,423	8%	794,126	-	794,126
D7204 - OUTAGE RESTORE - UG REPAIR	95%	12,808,582	2,945,974	9,862,608	92%	23,481,469	5,400,738	18,080,731	96%	12,467,780	2,867,580	9,600,191	89%	7,227,027	1,662,216	5,564,811	92%	7,380,127	1,697,429	5,682,698
D7205 - REPAIR TRANSFORMERS	50%	16,256	-	16,256	50%	336,650	-	336,650	50%	151,320	-	151,320	50%	41,737	-	41,737	50%	273,467	-	273,467
D7207 - REPAIR STREET LIGHTS	14%	633,316	-	633,316	6%	534,907	-	534,907	4%	251,544	-	251,544	3%	161,863	-	161,863	5%	217,821	-	217,821
D7208 - REPAIR METERS & METERING EQPMT	8%	76,969	-	76,969	18%	232,286	-	232,286	4%	10,644	-	10,644	6%	18,827	-	18,827	4%	14,204	-	14,204
D7209 - CLEAN UP OIL SPILLS	20%	161,653	-	161,653	7%	121,529	-	121,529	1%	6,224	-	6,224	3%	20,468	-	20,468	1%	5,926	-	5,926
D7210 - CORRECT MAINT - LIGHTING CABLE	100%	4,959	-	4,959	100%	368,959	-	368,959	98%	340,700	-	340,700	94%	474,790	-	474,790	94%	342,460	-	342,460
D7215 - CORRECT MAINT - OH REPAIR (Start 05)	-	-	-	-	-	-	-	-	-	-	-	-	44%	1,024,169	-	1,024,169	47%	946,180	-	946,180
D7216 - CORRECT MAINT - UG REPAIR (Start 05)	-	-	-	-	-	-	-	-	-	-	-	-	96%	1,479,099	-	1,479,099	97%	3,188,166	-	3,188,166
D7217 - CORRECT MAINT - OH REPLACE (Start 05)	-	-	-	-	-	-	-	-	-	-	-	-	46%	506,986	506,986	-	25%	480,006	480,006	-
D7218 - CORRECT MAINT - UG REPLACE (Start 05)	-	-	-	-	-	-	-	-	-	-	-	-	96%	2,943,787	2,943,787	-	96%	3,992,596	3,992,596	-



Historical Unit Cost Summary
2002 to 2006 Comparison Cost per Circuit Mile (OH vs. UG)

	% Impact	Indirectly Impacts																			
		UG																			
		%	2002	Capital	O&M	%	2003	Capital	O&M	%	2004	Capital	O&M	%	2005	Capital	O&M	%	2006	Capital	O&M
B1302 - SUPPORT EMPLOYEE SAFETY	30%	61%	305,780		305,780	36%	485,992		485,992	34%	412,759		412,759	13%	137,294		137,294	19%	197,606		197,606
B1404 - ATTEND TRAINING	15%	50%	490,484		490,484	0%				19%	163,218		163,218	0%				19%	130,172		130,172
B1501 - PROVIDE MGMT/PROJECT SUPERVSN	25%	50%	1,544,768	417,087	1,127,681	50%	1,249,313	337,315	911,998	50%	1,719,665	464,310	1,255,356	50%	1,764,251	476,348	1,287,903	50%	2,487,449	671,611	1,815,837
B1504 - PROVIDE OFFICE SVCS SUPPORT	25%	19%	350,973	101,782	249,191	22%	551,661	159,982	391,679	21%	334,203	96,919	237,284	50%	1,616,527	468,793	1,147,734	5%	183,997	53,359	130,638
B7206 - PRE-CHARGE MATERIALS	50%	32%	1,030,735	369,220	721,514	31%	1,889,395	566,818	1,322,576	27%	630,411	189,123	441,287	30%	722,462	216,739	505,723	33%	608,709	182,613	426,096
C0200 - ANALYZE POWER QUALITY	80%	50%	129,413	93,178	36,236	50%	98,144	70,664	27,480	50%	584,403	420,770	163,633	50%	359,724	258,001	100,723	50%	294,477	212,023	82,453
D6205 - PROV GENL DISTRIBUTION SYS SPT	50%	32%	4,763,661	1,965,464	2,858,196	17%	4,160,921	1,664,368	2,496,553	36%	3,839,608	1,535,843	2,303,765	71%	4,258,827	1,703,531	2,555,296	93%	2,558,804	1,023,522	1,535,282

Major Storms																				
UG																				
	%	2002	Capital	O&M	%	2003	Capital	O&M	%	2004	Capital	O&M	%	2005	Capital	O&M	%	2006	Capital	O&M
Major Storm Costs (Per the Rapid Update Study)	17%	2,709,997	379,140	2,330,856	17%	2,732,666	382,312	2,350,354	17%	2,910,400	407,178	2,503,222	17%	3,081,198	431,073	2,650,125	17%	3,281,601	459,110	2,822,491

Underground																
		2002			2003			2004			2005			2006		
		Capital	O&M	Capital	O&M	Capital	O&M	Capital	O&M	Capital	O&M	Capital	O&M			
Totals		30,090,774	53,415,292	40,684,974	70,409,635	17,924,258	32,669,942	22,088,208	25,292,840	30,755,034	30,977,806					
Replacements		18,261,317	5,829,474	16,481,046	5,964,216	8,277,028	1,106,924	5,275,794	5,275,794	13,729,700	4,098,870					
Operations		7,133,235	6,970,489	12,695,781	352,746	7,437,625	7,212,093	7,698,368	232,490	6,634,029	247,299	6,386,731				
Maintenance		49,495,700	34,826,246	67,518,141	46,466,105	27,195,280	19,373,622	25,547,802	13,455,673	34,907,898	18,733,778	16,174,120				
Indirectly Impacts		8,615,814	5,789,082	8,435,425	5,636,278	7,684,267	4,977,302	8,859,084	3,124,411	5,734,673	6,461,214	4,318,086				
Grand Totals		83,506,066	111,094,609	40,684,974	70,409,635	50,594,200	32,669,942	47,381,048	22,088,208	25,292,840	61,732,840	30,977,806				

Underground																
Circuit Miles fr FRAME		2002			2003			2004			2005			2006		
		Capital	O&M	Capital	O&M	Capital	O&M	Capital	O&M	Capital	O&M	Capital	O&M			
Grand Totals with Rapid Study Estimated Major Storm Costs	14,186	86,216,063	113,827,274	41,067,286	72,759,988	53,504,600	18,331,436	35,173,164	50,462,246	22,519,281	27,942,965	65,014,442	31,214,144			
Unit Costs (in Circuit Miles)	14,949	64% \$ 6,078	\$ 2,148	\$ 3,930	56% \$ 7,614	\$ 2,747	\$ 4,867	50% \$ 3,346	\$ 1,146	\$ 2,199	49% \$ 2,934	\$ 1,309	\$ 1,625	51% \$ 3,517	\$ 1,688	\$ 1,828

**Progress Energy Florida
NPV Life Cycle Cost Analysis
Data Inputs and Assumptions**

Storm Costs used from 2005 Rapid Response Study	\$	21,400,000	Expected Annual Storm Costs in 2004 dollars per Steve Harris rebuttal before the FPSC
Percentage of T&D storm costs allocated to Distribution		80%	Based on per 2004 / 2005 Actual Experience
Base Year Storm Costs Rate	\$	17,120,000	Distribution Expected Annual Storm Costs in 2004 dollars
Percentage of storm costs allocated to overhead		83%	Based on per 2004 / 2005 Actual Experience
Underground life used based on Depreciation Study	38 years		
Corporate Std Inflation Rate 2008-2009	1.025		Based on Corporate standard for 2008
Corporate Std Inflation Rate 2010-2044	1.0225		Based on Corporate standard for 2010-2044
2002 TREND Data	1.19	Used to calculate 2002 costs to 2007 dollars	based on JEDOMMS index
2003 TREND Data	1.217	Used to calculate 2003 costs to 2007 dollars	based on JEDOMMS index
2004 TREND Data	1.278	Used to calculate 2004 costs to 2007 dollars	based on JEDOMMS index
2005 TREND Data	1.353	Used to calculate 2005 costs to 2007 dollars	based on JEDOMMS index
2006 TREND Data	1.441	Used to calculate 2006 costs to 2007 dollars	based on JEDOMMS index
2007 TREND Data	1.476		based on JEDOMMS index
2003 TREND Data Inflation Rate	1.023	2003 TREND/2002 TREND	
2004 TREND Data Inflation Rate	1.050	2004 TREND/2003 TREND	
2005 TREND Data Inflation Rate	1.059	2005 TREND/2004 TREND	
2006 TREND Data Inflation Rate	1.065	2006 TREND/2005 TREND	
2007 TREND Data Inflation Rate	1.024	2007 TREND/2006 TREND	