

AUSLEY & McMULLEN

ATTORNEYS AND COUNSELORS AT LAW

123 SOUTH CALHOUN STREET
P.O. BOX 391 (ZIP 32302)
TALLAHASSEE, FLORIDA 32301
(850) 224-9115 FAX (850) 222-7560

February 24, 2010

HAND DELIVERED

RECEIVED-FPSC
10 FEB 24 PM 2:41
COMMISSION
CLERK

Ms. Ann Cole, Director
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Petition for Approval of Revised Lighting Tariff by Tampa Electric Company
FPSC Docket No. 100042-EI

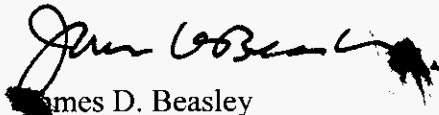
Dear Ms. Cole:

Enclosed for filing are the original and five (5) copies of Tampa Electric Company's response to Staff's First Data Request No. 1.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning same to this writer.

Thank you for your assistance in connection with this matter.

Sincerely,


James D. Beasley

JDB/pp
Enclosure

cc: Martha C. Brown (w/enc.)
Paula K. Brown, Tampa Electric Company (w/enc)

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DOCUMENT NUMBER - DATE

01255 FEB24 0

FPSC-COMMISSION CLERK

**TAMPA ELECTRIC COMPANY
DOCKET NO. 100042-EI
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 1 OF 32
FILED: FEBRUARY 24, 2010**

- 1.** Please provide all cost support for TECO's new lighting fixtures to replace the 175 and 400 watt Metal Halide Fixtures which have been discontinued.

- A.** Please see the attached document (pages 2 through 32) containing the cost support for the lighting fixtures that Tampa Electric Company has proposed as replacements for the 175 and 400 watt Metal Halide fixtures which have been discontinued.

DOCUMENT NUMBER - DATE

01255 FEB 24 09

FPSC-COMMISSION CLERK



DOCKET NO. 100042-EI

**COST SUPPORT
FOR
METAL HALIDE LIGHTING FIXTURES**

FEBRUARY 2010

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SECTION 1

COST SUMMARY – RATE CALCULATIONS

150 WATT SALEM POST TOP - SUMMARY

<u>Line</u>	<u>MATERIAL</u>	<u>Cost</u>
1	Luminaire	\$ 369.95
2	Lamp	\$ 15.82
3	Shorting Cap	\$ 3.00
4	Control Equipment	\$ 32.20
5	Total Materials (Ln 1+ Ln 2 + Ln 3 + Ln 4)	\$ 420.97
6		
7	<u>LABOR/VEHICLE</u>	
8	Installation	\$ 117.30
9	Engineering	\$ 97.15
10	Materials Handling (Line 5 x 25.17%)	\$ 105.96
11	Total Labor/Vehicle (Line 8 + Line 9 + Line 10)	\$ 320.41
12		
13	Total Installed Cost (Line 5 + Line 11)	\$ 741.37
14		
15	19-Year Fixed Charge Rate	0.1363
16		
17	Yearly Facilities Charge (Line 13 x Line 15)	\$ 101.05
18		
19	Monthly Facilities Charge (Line 17 / 12 months)	\$ 8.42
20		
21	Monthly Maintenance Charge	\$3.54

150 WATT GENERAL POST TOP - SUMMARY

<u>Line</u>	<u>MATERIAL</u>	<u>Cost</u>
1	Luminaire	\$ 450.55
2	Lamp	\$ 15.82
3	Shorting Cap	\$ 3.00
4	Control Equipment	\$ 32.20
5	Total Materials (Ln 1+ Ln 2 + Ln 3 + Ln 4)	\$ 501.56
6		
7	<u>LABOR/VEHICLE</u>	
8	Installation	\$ 117.30
9	Engineering	\$ 97.15
10	Materials Handling (Line 5 x 25.17%)	\$ 126.24
11	Total Labor/Vehicle (Line 8 + Line 9 + Line 10)	\$ 340.69
12		
13	Total Installed Cost (Line 5 + Line 11)	\$ 842.25
14		
15	19-Year Fixed Charge Rate	0.1363
16		
17	Yearly Facilities Charge (Line 13 x Line 15)	\$ 114.80
18		
19	Monthly Facilities Charge (Line 17 / 12 months)	\$ 9.57
20		
21	Monthly Maintenance Charge	\$3.54

150 WATT SHOEBOX - SUMMARY

<u>Line</u>	<u>Material</u>	<u>Cost</u>
1	Luminaire	\$ 213.80
2	Lamp	\$ 15.82
3	Luminaire Bracket	\$ 16.58
4	Shorting Cap	\$ 3.00
5	Control Equipment	\$ 22.68
6	Bracket cable	\$ 1.44
7	Misc. Hardware	\$ 2.04
8	Total Materials (Sum of Lines 1 through 7)	<u>\$ 275.36</u>
9		
10	Labor/Vehicle	
11	Installation	\$ 132.46
12	Engineering	\$ 97.15
13	Materials Handling (Line 8 x 25.17%)	\$ 69.31
14	Total Labor/Vehicle (Line 11 + Line 12 + Line 13)	<u>\$ 298.92</u>
15		
16	Total Installed Cost (Line 8+ Line 14)	\$ 574.28
17		
18	19-Year Fixed Charge Rate	0.1363
19		
20	Yearly Facilities Charge (Line 16 x Line 18)	\$ 78.27
21		
22	Monthly Facilities Charge (Line 20 / 12 months)	\$ 6.52
23		
24	Monthly Maintenance Charge	\$3.54

350 WATT COBRA - SUMMARY

<u>Line</u>	<u>MATERIAL</u>	<u>Cost</u>
1	Luminaire	\$ 136.59
2	Lamp	\$ 40.75
3	Luminaire Bracket	\$ 24.05
4	Shorting Cap	\$ 3.00
5	Control Equipment	\$ 64.03
6	Bracket cable	\$ 4.17
7	Misc. Hardware	\$ 4.67
8	Total Materials (Sum of Lines 1 through 7)	\$ 277.26
9		
10	<u>Labor/Vehicle</u>	
11	Installation	\$ 154.30
12	Engineering	\$ 97.15
13	Materials Handling (Line 8 x 25.17%)	\$ 69.79
14	Total Labor/Vehicle (Line 11 + Line 12 + Line 13)	\$ 321.24
15		
16	Total Installed Cost (Line 8+ Line 14)	\$ 598.50
17		
18	19-Year Fixed Charge Rate	0.1363
19		
20	Yearly Facilities Charge (Line 16 x Line 18)	\$ 81.58
21		
22	Monthly Facilities Charge (Line 20 / 12 months)	\$ 6.80
23		
24	Monthly Maintenance Charge	\$4.50

350 WATT FLOODLIGHT - SUMMARY

<u>Line</u>	<u>MATERIAL</u>	<u>Cost</u>
1	Luminaire	\$ 208.67
2	Lamp	\$ 40.75
3	Luminaire Bracket	\$ 19.92
4	Shorting Cap	\$ 3.00
5	Control Equipment	\$ 64.03
6	Bracket cable	\$ 2.17
7	Misc. Hardware	\$ 1.80
8	Total Materials (Sum of Lines 1 through 7)	<u>\$ 340.33</u>
9		
10	Labor/Vehicle	
11	Installation	\$ 156.29
12	Engineering	\$ 97.15
13	Materials Handling (Line 8 x 25.17%)	<u>\$ 85.66</u>
14	Total Labor/Vehicle (Line 11 + Line 12 + Line 13)	<u>\$ 339.10</u>
15		
16	Total Installed Cost (Line 8+ Line 14)	\$ 679.43
17		
18	19-Year Fixed Charge Rate	0.1363
19		
20	Yearly Facilities Charge (Line 16 x Line 18)	\$ 92.61
21		
22	Monthly Facilities Charge (Line 20 / 12 months)	\$ 7.72
23		
24	Monthly Maintenance Charge	\$4.55

350 WATT SHOEBOX - SUMMARY

<u>Line</u>	<u>MATERIAL</u>	<u>Cost</u>
1	Luminaire	\$ 263.53
2	Lamp	\$ 40.75
3	Luminaire Bracket	\$ 41.46
4	Shorting Cap	\$ 3.00
5	Control Equipment	\$ 51.67
6	Bracket cable	\$ 1.57
7	Misc. Hardware	\$ 1.80
8	Total Materials (Sum of Lines 1 through 7)	<u>\$ 403.78</u>
9		
10	Labor/Vehicle	
11	Installation	\$ 156.29
12	Engineering	\$ 97.15
13	Materials Handling (Line 8 x 25.17%)	\$ 101.63
14	Total Labor/Vehicle (Line 11 + Line 12 + Line 13)	<u>\$ 355.07</u>
15		
16	Total Installed Cost (Line 8+ Line 14)	\$ 758.85
17		
18	19-Year Fixed Charge Rate	0.1363
19		
20	Yearly Facilities Charge (Line 16 x Line 18)	\$ 103.43
21		
22	Monthly Facilities Charge (Line 20 / 12 months)	\$ 8.62
23		
24	Monthly Maintenance Charge	\$4.45

**SECTION 2
INSTALLTION COSTS**

**TAMPA ELECTRIC COMPANY
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STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
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150 WATT SALEM POST TOP

<u>MATERIAL</u>	<u>Stock #</u>	<u>Unit Cost</u>	<u># of Units</u>	<u>Cost</u>
LUMINAIRE avg	5582051	\$369.95	1	\$369.95
LAMP	5585611	\$15.82	1	\$15.82
SHORTING CAP	5581500	\$3.00	1	\$3.00
CONTROL EQUIPMENT	Varies	\$32.20	1	\$32.20
TOTAL MATERIAL				\$420.97
<u>LABOR/VEHICLE</u>				
INSTALL LIGHT FIXTURE/BRACKET				\$93.98
INSTALL CONTROL EQUIPMENT				\$23.32
ENGINEERING LIGHT FIXTURE/BRACKET				\$97.15
MATERIAL HANDLING @ 25.17 % of material cost				\$105.96
TOTAL LABOR/VEHICLE				\$320.41
TOTAL COST				\$741.37

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150 WATT GENERAL POST TOP

<u>MATERIAL</u>	<u>Stock #</u>	<u>Unit Cost</u>	<u># of Units</u>	<u>Cost</u>
LUMINAIRE	5583351	\$433.82	57.3%	\$ 248.58
	5584221	\$472.99	42.7%	\$ 201.97
				\$ 450.55
LAMP	5585611	\$15.82	1	\$15.82
SHORTING CAP	5581500	\$3.00	1	\$3.00
CONTROL EQUIPMENT (UG installation)	Varies	\$32.20	100.0%	\$ 32.20
TOTAL MATERIAL				\$501.56
<u>LABOR/VEHICLE</u>				<u>Cost</u>
INSTALL LIGHT FIXTURE/BRACKET				\$93.98
INSTALL CONTROL EQUIPMENT				\$29.32
ENGINEERING LIGHT FIXTURE/BRACKET				\$97.15
MATERIAL HANDLING @ 25.17 % of material cost				\$126.24
TOTAL LABOR/VEHICLE				\$346.69
TOTAL COST				\$848.25

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150 WATT MH SHOEBOX

<u>MATERIAL</u>	<u>Stock #</u>	<u>Unit Cost</u>	<u># of Units or %</u>	<u>Cost</u>
<u>LUMINAIRE</u>	5580271	\$213.80	1	\$213.80
<u>LAMP</u>	5585611	\$15.82	1	\$15.82
<u>BRACKET & ACCESSORY avg</u>				
Bracket, Shoebox, Single Mount, Galv 6" Bracket	5581070	\$16.58	1	\$16.58
<u>SHORTING CAP</u>	5581500	\$3.00	1	\$3.00
<u>CONTROL EQUIPMENT</u>				
OH Installation	Varies	\$17.21	63.5%	\$ 10.93
UG Installation	Varies	\$32.20	36.5%	\$ 11.75
				\$ 22.68
<u>POLE & BRACKET Cable (Cu, Triplex, 600V 2/C, 10AWG)</u>	5322230	\$0.72	2	\$ 1.44
<u>FIXTURE HARDWARE</u>				
Hardware - all overhead-fed fixtures				
Cover, Snap-On Service Entrance Sleeve 5/8 DIE2 IN.	5261930	\$0.44	2	\$0.88
Connector, Compression H-Block ACSR #4 STR AL #4 STR 6	9261730	\$0.34	3	\$1.02
Nut, Eye 1-1/2" GALV for 5/8" Bolt	9237650	\$1.20	2	\$2.40
				\$4.29
Hardware - OH-fed fixtures mounted on wood poles				
Bolt, Machine GALV rolled threads 5/8 X 12	9233550	\$0.87	2	\$1.74
Connector, Compression H-Block AL #6 STR ACSR #10	9281530	\$0.21	2	\$0.43
				\$2.16
Hardware - underground-fed fixtures mounted on wood poles				
Bolt, Machine GALV rolled threads 5/8 X 8	9233450	\$0.78	2	\$1.57
Nut, Eye 1-1/2" GALV for 5/8" Bolt	9237650	\$1.20	2	\$2.40
				\$3.96
Hardware - OH and UG fixtures mounted on wood poles				
Washer, Flat, 2-1/4 X 2-1/4 X 3/16 w/13/16" Hole Dia	9296800	\$0.20	2	\$0.41
	<i>Wood pole-mounted ratio</i>		18.5%	
	<i>OH-fed ratio</i>		31.1%	
	<i>UG-fed ratio</i>		68.9%	
	\$4.29 x 31.1% =			\$ 1.34
	\$2.16 x 18.5% x 31.1% =			\$ 0.12
	\$3.96 x 18.5% x 68.9% =			\$ 0.51
	\$0.41 x 18.5% =			\$ 0.08
				\$ 2.04
TOTAL MATERIAL COST				\$ 275.36
<u>LABOR/VEHICLE</u>				
INSTALL LIGHT FIXTURE				\$115.10
INSTALL CONTROL EQUIPMENT				
Oil Switch				
OH Installation	\$4.14		31%	\$ 1.29
UG Installation	\$23.32		69%	\$ 16.07
				\$ 17.36
ENGINEERING LIGHT FIXTURE				\$97.15
MATERIAL HANDLING @ 25.17 % of material cost				\$69.31
TOTAL LABOR/VEHICLE				\$296.51
TOTAL COST				\$571.87

**TAMPA ELECTRIC COMPANY
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350 WATT MH COBRA

<u>MATERIAL</u>	<u>Stock #</u>	<u>Unit Cost</u>	<u># of Units or %</u>	<u>Cost</u>	
LUMINAIRE	5587001	\$136.59	1	\$136.59	
LAMP	5585641	\$40.75	1	\$40.75	
BRACKET & ACCESSORY - Weighted Avg Cost					
bracket, 20 IN	5580710	\$15.64	29.0%	\$ 4.54	
bracket, 4 FT	5580740	\$20.19	54.0%	\$ 10.90	
bracket, 6 FT	5580750	\$30.69	11.8%	\$ 3.62	
bracket, 8 FT	5580780	\$65.24	2.8%	\$ 1.83	
bracket, 10 FT	5580800	\$78.83	0.1%	\$ 0.08	
bracket, 12 FT	5580820	\$78.95	0.8%	\$ 0.63	
bracket, 12 FT 5 JU	5580850	\$146.74	1.2%	\$ 1.76	
bracket, 12 FT 10 JU	5580830	\$138.37	0.3%	\$ 0.42	
Weighted Average Bracket Cost				\$ 23.77	
Accessories for 12 ft bracket					
anchor	1901543	\$0.10	8	\$ 0.80	
compound	5851980	\$2.41	1	\$ 2.41	
conduit	5521030	\$0.73	8	\$ 5.84	
screw	5290800	\$0.14	8	\$ 1.16	
strap	5511210	\$0.54	4	\$ 2.15	
Weighted Average Bracket Accessories Cost				\$ 12.35	
12-foot bracket percentage				2.3%	
Bracket and Assesory Weighted Average Cost				\$24.05	
SHORTING CAP	5581500	\$3.00	1	\$3.00	
CONTROL EQUIPMENT					
OH Installation	Varies	\$39.21	27%	\$ 10.70	
UG Installation	Varies	\$73.35	73%	\$ 53.32	
Control Equipment Weighted Avg. Cost				\$64.03	
BRACKET Cable (Cu, Triplex, 800V 2/C, 10AWG)					
20 IN	29.0%	5322230	\$0.72	3	\$0.63
4 FT	54.0%	5322230	\$0.72	6	\$2.34
6 FT	11.8%	5322230	\$0.72	8	\$0.86
8 FT	2.8%	5322230	\$0.72	10	\$0.20
10 FT	0.1%	5322230	\$0.72	12	\$0.01
12 FT	0.8%	5322230	\$0.72	14	\$0.08
12 FT 5 JU	1.2%	5322230	\$0.72	21	\$0.18
12 FT 10 JU	0.3%	5322230	\$0.72	24	\$0.05
Bracket Cable Weighted Average Cost				\$4.17	
FIXTURE HARDWARE					
Pole Hardware wood/conc					
Washer, Flat 2-1/4 X 2-1/4 X 3/16 w/ 13/18" Hole Dia	9296750	\$0.15	2	\$0.30	
Nut, Eye 1-1/2" GALV for 5/8" bolt	9237650	\$1.20	2	\$2.40	
				\$2.70	
Overhead Service Hardware					
Bolt, Machine GALV 5/8x12	9233550	\$0.87	2	\$1.74	
Cover, Snap-On Service Entrance Sleeve 5/8 die 2in	5261930	\$0.44	2	\$0.88	
Connector, Compression H-Block AL #6 slr ACSR #10	9261530	\$0.21	2	\$0.43	
ratio OH/UG				27%	
				\$0.83	
Underground Service Hardware					
Bolt, Machine GALV 5/8x8	9233450	\$0.78	2	\$1.57	
ratio OH/UG				73%	
				\$1.14	
Fixture Hardware Weighted Average Cost				\$4.67	
TOTAL MATERIAL COST				\$277.26	
LABOR/VEHICLE					
INSTALL LIGHT FIXTURE	Crew Type LN1	\$ 129.76	0.87	\$113.09	
INSTALL CONTROL EQUIPMENT					
OH Installation	Varies	\$9.44	27%	\$ 2.57	
UG Installation	Varies	\$53.12	73%	\$ 38.64	
Control Equipment Weighted Average Installation Cost				\$ 41.21	
ENGINEERING LABOR		\$ 97.15	1	\$97.15	
MATERIAL HANDLING @ 25.17 % of material cost				\$69.79	
TOTAL LABOR/VEHICLE				\$321.24	
TOTAL COST				\$598.50	

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350 WATT MH FLOOD

<u>MATERIAL</u>	<u>Stock #</u>	<u>Unit Cost</u>	<u># of Units</u>	<u>Cost</u>
LUMINAIRE	5585881	\$208.67	18.1%	\$ 37.77
	5588591	\$208.67	81.9%	\$ 170.90
				\$ 208.67
LAMP	5585641	\$40.75	1	\$40.75
BRACKET & ACCESSORY avg				
Bracket, Streetlight, GALV, 9"Radius	5581060	\$24.51	69.4%	\$ 17.01
Bracket, Dual Cutout Arrester & Pothead Dwg. Q5443	5272070	\$31.34	0.2%	\$ 0.06
Bracket, "L" 5-5/8" in Length for Mount Cutout, Arrester & Pothead	5532220	\$9.38	0.5%	\$ 0.05
Bracket, "L" 11" Projected Length for Mount Cutout	5532230	\$9.36	29.9%	\$ 2.80
				\$ 19.92
SHORTING CAP	5581500	\$3.00	1	\$3.00
CONTROL EQUIPMENT				
OH Installation	Varies	\$39.21	27%	\$ 10.70
UG Installation	Varies	\$73.35	73%	\$ 53.32
				\$ 64.03
CABLE, POLE & BRACKET, UG, Copper, Triplex, 600V 2/C, 10AWG	5322230	\$0.72	3	\$2.17
<u>FIXTURE HARDWARE</u>				
Hardware - all overhead-fed fixtures				
Cover, Snap-On Service Entrance Sleeve 5/8 DIE2 IN	5261930	\$0.44	2	\$0.88
Connector, Compression H-Block ACSR #4 STR AL #4 STR 6	9261730	\$0.34	3	\$1.02
Nut, Eye 1-1/2" GALV for 5/8" Bolt	9237650	\$1.20	2	\$2.40
				\$4.29
Hardware - OH-fed fixtures mounted on wood poles				
Bolt, Machine GALV rolled threads 5/8 X 12	9233550	\$0.87	2	\$1.74
Connector, Compression H-Block AL #6 STR ACSR #10	9261530	\$0.21	2	\$0.43
				\$2.16
Hardware - underground-fed fixtures mounted on wood poles				
Bolt, Machine GALV rolled threads 5/8 X 8	9233450	\$0.78	2	\$1.57
Nut, Eye 1-1/2" GALV for 5/8" Bolt	9237650	\$1.20	2	\$2.40
				\$3.96
Hardware - OH and UG fixtures mounted on wood poles				
Washer, Flat, 2-1/4 X 2-1/4 X 3/16 w/13/16" Hole Dia	9296800	\$0.20	2	\$0.41
			16.2%	
			27.3%	
			72.7%	
				\$ 1.17
				\$ 0.10
				\$ 0.47
				\$ 0.07
				\$ 1.80
TOTAL MATERIAL				\$340.33
<u>LABOR/VEHICLE</u>				
INSTALL LIGHT FIXTURE				\$115.10
INSTALL CONTROL EQUIPMENT				
OH Installation	Varies	\$9.44	27%	\$ 2.58
UG Installation	Varies	\$53.12	73%	\$ 38.62
				\$ 41.19
ENGINEERING LIGHT FIXTURE				\$97.16
MATERIAL HANDLING @ 25.17 % of material cost				\$85.66
TOTAL LABOR/VEHICLE				\$339.10
TOTAL COST				\$879.43

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350 WATT MH SHOEBOX

<u>MATERIAL</u>	<u>Stock #</u>	<u>Unit Cost</u>	<u># of Units</u>	<u>Cost</u>
LUMINAIRE				
	5586535	\$245.32	1.6%	\$ 4.02
	5586451	\$273.25	24.7%	\$ 67.46
	5586456	\$255.88	20.5%	\$ 52.38
	5586461	\$273.25	30.8%	\$ 84.11
	5586539	\$284.31	0.5%	\$ 1.33
	5586533	\$255.88	1.3%	\$ 3.20
	5586535	\$245.32	20.1%	\$ 49.26
	5586541	\$284.31	0.6%	\$ 1.78
				\$ 263.53
LAMP	5585641	\$40.75	1	\$40.75
BRACKET & ACCESSORY avg				
Bracket, Shoebox, Single Mount, Prem Ltg	Various	\$33.78	92.2%	\$ 31.14
Bracket, Shoebox, Dual Mount, 90 Degree, Prem Ltg	Various	\$86.67	0.9%	\$ 0.80
Bracket, Shoebox, Dual Mount, 180 Degree, Prem Ltg	Various	\$93.74	3.1%	\$ 2.91
Bracket, Shoebox, Twin Parallel Mount, Prem Ltg	Various	\$157.13	2.3%	\$ 3.61
Bracket, Shoebox, Triple Mount, Prem Ltg	Various	\$121.34	0.3%	\$ 0.36
Bracket, Shoebox, Quad Mount, Prem Ltg	Various	\$219.57	1.2%	\$ 2.63
				\$ 41.46
SHORTING CAP	5581500	\$3.00	1	\$3.00
CONTROL EQUIPMENT				
OH Installation	Varies	\$39.21	63.5%	\$ 24.90
UG Installation	Varies	\$73.35	36.5%	\$ 26.77
				\$ 51.67
POLE & BRACKET Cable (Cu, Triplex, 600V 2/C, 10AWG)	5322230	\$0.72	2.17	\$1.57
FIXTURE HARDWARE				
Hardware - all overhead-fed fixtures				
Cover, Snap-On Service Entrance Sleeve 5/8 DIE2 IN.	5261930	\$0.44	2	\$0.88
Connector, Compression H-Block ACSR #4 STR AL #4 STR 6	9261730	\$0.34	3	\$1.02
Nut, Eye 1-1/2" GALV for 5/8" Bolt	9237650	\$1.20	2	\$2.40
				\$4.29
Hardware - OH-fed fixtures mounted on wood poles				
Bolt, Machine GALV rolled threads 5/8 X 12	9233550	\$0.87	2	\$1.74
Connector, Compression H-Block AL #6 STR ACSR #10	9261530	\$0.21	2	\$0.43
				\$2.16
Hardware - underground-fed fixtures mounted on wood poles				
Bolt, Machine GALV rolled threads 5/8 X 8	9233450	\$0.78	2	\$1.57
Nut, Eye 1-1/2" GALV for 5/8" Bolt	9237650	\$1.20	2	\$2.40
				\$3.96
Hardware - OH and UG fixtures mounted on wood poles				
Washer, Flat, 2-1/4 X 2-1/4 X 3/16 w/13/16" Hole Dia	9296800	\$0.20	2	\$0.41
	<i>Wood pole-mounted ratio</i>		16.2%	
	<i>OH-fed ratio</i>		27.3%	
	<i>UG-fed ratio</i>		72.7%	
	$\$4.29 \times 27.3\% =$			1.172501744
	$\$2.16 \times 16.2\% \times 27.3\% =$			0.095581231
	$\$3.96 \times 16.2\% \times 72.7\% =$			0.466646498
	$\$0.41 \times 16.2\% =$			0.0659016
				\$ 1.80
TOTAL MATERIAL				\$403.78
LABOR/VEHICLE				
INSTALL LIGHT FIXTURE				Cost \$115.10
INSTALL CONTROL EQUIPMENT				
OH Installation	Varies	\$9.44	27.3%	\$ 2.58
UG Installation	Varies	\$53.12	72.7%	\$ 38.62
				\$ 41.19
ENGINEERING LIGHT FIXTURE				\$97.15
MATERIAL HANDLING @ 25.17 % of material cost				\$101.63
TOTAL LABOR/VEHICLE				\$355.07
TOTAL COST				\$758.85

**SECTION 3
MAINTENANCE COSTS**

Maintenance Cost Summary

Metal Halide Luminaire	Lamp Start Aid Failure	Photo Cell Failure	Relay	Luminaire Parts Failure	Average Annual Cost	Total Monthly Charge
150 W Salem Post Top	\$20.22	\$8.69	\$2.08	\$11.47	\$42.46	\$3.54
150 W Shoebox	\$20.29	\$8.69	\$2.08	\$11.45	\$42.52	\$3.54
150 W General Post Top	\$20.22	\$8.69	\$2.08	\$11.48	\$42.48	\$3.54
350 W Cobra	\$34.22	\$7.39	\$2.10	\$10.31	\$54.01	\$4.50
350 W Flood	\$34.81	\$7.39	\$2.10	\$10.36	\$54.65	\$4.55
350 W Shoebox	\$33.74	\$7.04	\$2.10	\$10.58	\$53.45	\$4.45

Lamp Starting Aid Failure

Luminaire Type	Avg Material Cost	Material Handling	Labor & Vehicle	Total Activity Cost	Frequency	Annual Cost
150 W Salem Post Top	\$15.82	\$3.98	\$62.09	\$81.88	24.69%	\$20.22
150 W Shoebox	\$15.82	\$3.98	\$62.09	\$81.88	24.78%	\$20.29
150 W General Post Top	\$15.82	\$3.98	\$62.09	\$81.88	24.70%	\$20.22
350 W Cobra	\$40.75	\$10.26	\$62.09	\$113.09	30.25%	\$34.22
350 W Flood	\$40.75	\$10.26	\$62.09	\$113.09	30.78%	\$34.81
350 W Shoebox	\$40.75	\$10.26	\$62.09	\$113.09	29.83%	\$33.74

Luminaire Parts Failure

Luminaire Type	Avg Material Cost	Material Handling	Labor & Vehicle	Total Activity Cost	Frequency	Annual Cost
150 W Salem Post Top	\$17.57	\$4.42	\$107.11	\$129.11	8.88%	\$11.47
150 W Shoebox	\$16.47	\$4.14	\$107.11	\$127.72	8.97%	\$11.45
150 W General Post Top	\$17.57	\$4.42	\$107.11	\$129.11	8.89%	\$11.48
350 W Cobra	\$21.32	\$5.37	\$107.11	\$133.80	7.70%	\$10.31
350 W Flood	\$21.32	\$5.37	\$107.11	\$133.80	7.74%	\$10.36
350 W Shoebox	\$21.32	\$5.37	\$107.11	\$133.80	7.91%	\$10.58

Photo Cell Failure

Luminaire Type	Avg Material Cost	Material Handling	Labor & Vehicle	Total Activity Cost	Frequency	Annual Cost
150 W Salem Post Top	\$4.25	\$1.07	\$67.25	\$72.57	11.98%	\$8.69
150 W Shoebox	\$4.25	\$1.07	\$67.25	\$72.57	11.98%	\$8.69
150 W General Post Top	\$4.25	\$1.07	\$67.25	\$72.57	11.98%	\$8.69
350 W Cobra	\$4.25	\$1.07	\$67.25	\$72.57	10.18%	\$7.39
350 W Flood	\$4.25	\$1.07	\$67.25	\$72.57	10.18%	\$7.39
350 W Shoebox	\$4.25	\$1.07	\$67.25	\$72.57	9.70%	\$7.04

Relay

Luminaire Type	Avg Material Cost	Material Handling	Labor & Vehicle	Total Activity Cost	Frequency	Annual Cost
150 W Salem Post Top	\$494.71	\$124.52	\$143.73	\$762.96	0.27%	\$2.08
150 W Shoebox	\$494.71	\$124.52	\$143.73	\$762.96	0.27%	\$2.08
150 W General Post Top	\$494.71	\$124.52	\$143.73	\$762.96	0.27%	\$2.08
350 W Cobra	\$494.71	\$124.52	\$143.73	\$762.96	0.27%	\$2.10
350 W Flood	\$494.71	\$124.52	\$143.73	\$762.96	0.27%	\$2.10
350 W Shoebox	\$494.71	\$124.52	\$143.73	\$762.96	0.27%	\$2.10

**SECTION 4
VEHICLE AND LABOR COSTS**

Installation Labor and Vehicle Costs

Labor Adders Assumptions

	Fringe =	72.00%
	Small Tools % for TEC Field Labor =	2.68%
	% Supv & Admin TEC Lighting Field - TEC Labor (Installation) =	32.08%

Fixture Installation Labor - Crew Cost

	\$/Hr
Apprentice Lineman III	\$ 23.77
Lineman	\$ 32.43
	<u>\$ 56.20</u>

Adjusted for non-productive, A&G, supervisory, and small tools \$ 116.20

Installation Vehicle/ Equipment Costs

Heavy Vehicle (Rsc 05) - Class B (Aerial Truck) \$ 13.56

Total Hourly Rate (crew and vehicle) \$ 129.76

Installation Time

Load Material	6
Travel Time	10.0
Set up Bucket	3.7
Make up Material (fixture & bracket)	8
Wire New Fixture/Bracket & Install on Pole	15
Energize (All)	2
Raise Bucket	1
Test Light	2
Prepare to Travel	4.5
Total Time (minutes)	<u>52.2</u>

Total Time (hrs) 0.87

Total Labor/Vehicle Fixture Installation Cost **\$ 112.89**

Control Equipment Installation Labor - Crew Cost

Lighting Repairman/Service Man \$ 23.19

Adjusted for non-productive, A&G, supervisory, and small tools \$ 47.95

Installation Vehicle/ Equipment Costs

Heavy Vehicle (Rsc 05) - Class C \$ 19.12

Total Hourly Rate (serviceman and vehicle) **\$ 67.07**

Weighted Average "Per Fixture" Cntrl. Equip. Installation time	<u>150 W</u>	<u>350 W</u>
OH installation (hrs)	0.06	0.14
UG installation (hrs)	0.35	0.79

Weighted Average "Per Fixture" Cntrl. Equip. Installation Cost	<u>150 W</u>	<u>350 W</u>
OH installation (\$)	\$ 4.14	\$ 9.44
UG installation (\$)	\$ 23.32	\$ 53.12

Maintenance Labor and Vehicle Costs

Labor Adders Assumptions

Fringe = 72.00%
Small Tools % for TEC Field Labor = 2.68%
% Supv & Admin TEC Lighting Field - TEC Labor (Installation) = 48.92%

Maintenance Labor - Crew Cost

Lighting Repairman/Service Man (Avg)	\$ /HR
	\$23.19
	<u>\$ 23.19</u>

Adjusted for non-productive, A&G, supervisory, and small tools \$ 51.86

Installation Vehicle/ Equipment Costs

Heavy Vehicle (Rsc 05) - Class C - Original Cost (70,000 - 99,999) \$ 19.12

Total Hourly Rate (crew and vehicle) \$ 70.98

SL1 \$70.98

Part	Bucket Maint	Climb Maint	2nd Man FR Climb	Ratio of Group	Memo	Individual Frequency
Lamp/Starting Aid Replacement	22	72	24			
Travel Time (Maint)	6	12	31			
Call in for 2nd Man/Wait Time	0.01	0.01	-			
Set up Bucket	5	8	8			
Extra Access Time	40	55	77			
Light Maintenance	0.67	0.92	1.28			
Prepare to Travel	86%	14%	from FIMS			
subtotal time (min)	1	1		0.93%	14%	0.3%
subtotal time (hr)	5	8		99.07%	14%	27.1%
Bucket/Climb Ratio	Average	5	8			27.4%
Starting Aide Lamp	1	1				
Average	5	8				
Repair Type All Maint	15	0.06%				
Extra Access Time (move surrounding items e.g. cars)						

\$ 62.09

	Bucket Maint	Climb Maint	Memo	2nd Man FR Climb	SL1	\$70.98
Parts Replacement	18	21		Join Job		
Travel Time (Maint)	1					
Set up Bucket	4	4	Bucket or Climb	Join Job		
Inspect/Diagnose Problem/Remove Part	74	90				
Lower Bucket	1.23	1.50				
Call in for 2nd Man/Wait Time	95%	5%				
Pull Material Off Truck			5.2%			
Raise Bucket						
Repair Luminaires						
Prepare to Travel						
subtotal time (min)						
Bucket/Climb Ratio						
FR/Memo Ratio						
						\$ 107.11
Part	Capacitor	15	18	Ratio of Group	Memo	Individual Frequency
	Ballast	30	36		5%	8.3%
	Glass	2	4		10%	0.10%
	Average	15	18		10%	0.3%
						8.6%

(Photo Cell Replacement) SL1 \$70.98

	Bucket Maint	Climb Maint	2nd Man FR Climb
Parts Replacement	10	14	Join Job
Travel Time (Maint)	1	-	Join Job
Set up Bucket	4	4	Join Job
Inspect/Diagnose Problem/ Remove Part	1	-	Join Job
Lower Bucket	1	-	Join Job
Call in for 2nd Man/Wait Time	1	-	Join Job
Pull Material Off Truck	1	-	Join Job
Raise Bucket	1	-	Join Job
Repair Luminaire	1	-	Join Job
Prepare to Travel	1	-	Join Job
subtotal time (min)	52	68	81
subtotal time (hr)	0.87	1.13	1.35
Bucket/Climb Ratio	95%	5%	100%
FR/Memo Ratio			

\$ 67.25

(Relay Replacement)	SL1	Relay	Relay FR	Memo	
Relay Replacement			24	24	
Travel Time (Maint)			6	6	
Set up Bucket			36	36	
Energize Relay/Inspect/ Diagnose Problem/ Remove			-1	-1	
Lower Bucket					
Create Memo					
Program Timer in Office					
Pull Material Off Truck					
Raise Bucket					
Replace Relay/Timer/Reenergize					
Prepare to Travel					
subtotal time (min)			97	35	
subtotal time (hr)			1.62	0.58	
FR/Memo Ratio			100%	78%	

Associated Equipment frequency
90% of 60&100A Relays are PC Controlled
100% of 30A Relays are PC Controlled
10% of 60&100A Relays are Timer Controlled

Relay 20% is a special relay, must memo to order part.

\$ 143.73

**SECTION 5
FIXED CHARGE RATE**

TAMPA ELECTRIC COMPANY
DOCKET NO. 100042-EI
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 28 OF 32
FILED: FEBRUARY 24, 2010

ACCOUNT 373 STREET LIGHTING, SIGNAL SYSTEM		COST RATE RATIO		19 Years		7 Years		Property Tax Escalation Rate		1.03										
COMMON EQUITY	0.1125	0.5394																		
PREFERRED STOCK	0.0000	0.0000																		
DEBT	0.0800	0.4806																		
NET SALVAGE	0.00																			
BOOK DEPR. RATE	0.0526																			
DISCOUNT RATE	0.0833																			
TAX RATE	0.3859																			
ITC RATE	0.0000																			
OTHER TAX RATE	0.0144																			
DEPRECIATION	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
TAX BASIS	1.000																			
TAX DEP RATE %	14.290	24.490	17.480	12.490	8.930	8.930	8.930	4.460	0.0177	0.0182	0.0188	0.0194	0.0199	0.0205	0.0211	0.0218	0.0224	0.0231	0.0238	
TAX DEP	0.143	0.245	0.175	0.125	0.089	0.089	0.089	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
BOOK DEP	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	
RATE BASE ADJUSTMENTS																				
DEFERRED TAXES	0.035	0.074	0.047	0.028	0.014	0.014	0.014	-0.003	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	
ACC DEF TAXES	0.035	0.109	0.156	0.184	0.198	0.212	0.228	0.223	0.203	0.203	0.193	0.162	0.142	0.122	0.102	0.081	0.061	0.041	0.020	
ACC BOOK DEP	0.053	0.105	0.158	0.211	0.263	0.316	0.368	0.421	0.474	0.526	0.579	0.632	0.684	0.737	0.789	0.842	0.895	0.947	1.000	
ITC-AMORTIZATION	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
ACC DEF ITC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
RATE BASE	0.966	0.849	0.736	0.646	0.572	0.505	0.439	0.380	0.336	0.307	0.275	0.242	0.219	0.192	0.178	0.145	0.113	0.081	0.046	
NET PLANT	0.035	0.109	0.156	0.184	0.198	0.212	0.226	0.223	0.203	0.203	0.183	0.162	0.142	0.122	0.102	0.081	0.061	0.041	0.020	
AVG DEF TAXES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
AVG ITC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
AVG COMMON	0.516	0.458	0.397	0.348	0.309	0.273	0.237	0.205	0.183	0.166	0.148	0.131	0.113	0.096	0.078	0.061	0.044	0.026	0.008	
AVG PREF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
AVG DEBT	0.440	0.391	0.338	0.297	0.263	0.233	0.202	0.175	0.156	0.141	0.127	0.112	0.097	0.082	0.067	0.052	0.037	0.022	0.007	
REVENUE REQUIREMENTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
O & M EXPENSES	0.014	0.015	0.015	0.016	0.016	0.017	0.017	0.018	0.018	0.019	0.019	0.019	0.019	0.020	0.021	0.021	0.022	0.022	0.024	
PROPERTY TAXES/ITC	0.035	0.031	0.027	0.024	0.021	0.019	0.016	0.014	0.013	0.011	0.010	0.010	0.009	0.008	0.007	0.005	0.004	0.003	0.001	
RETURN-DEBT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
RETURN-PREF	0.056	0.052	0.045	0.039	0.035	0.031	0.027	0.023	0.021	0.018	0.017	0.015	0.013	0.011	0.009	0.007	0.005	0.003	0.001	
RETURN-COMMON	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
RETURN-ITC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
TOTAL RETURN	0.093	0.083	0.072	0.063	0.056	0.049	0.043	0.037	0.033	0.030	0.027	0.024	0.020	0.017	0.014	0.011	0.008	0.005	0.002	
CURRENT TAXES	0.002	-0.042	-0.028	-0.003	0.008	0.019	0.017	0.014	0.013	0.012	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	
TOTAL TAXES	0.038	0.032	0.028	0.025	0.022	0.019	0.017	0.014	0.013	0.012	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	
CASH DEP	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	
TOTAL REVENUE RE	0.197	0.183	0.168	0.156	0.146	0.138	0.129	0.122	0.117	0.113	0.109	0.105	0.102	0.098	0.094	0.090	0.087	0.083	0.079	
FIXED CHARGE RATIO	0.19674	0.18264	0.16772	0.15595	0.14643	0.13786	0.12931	0.12194	0.11692	0.11308	0.10928	0.10545	0.10167	0.09790	0.09415	0.09041	0.08670	0.08301	0.07934	
PRESENT WORTH REVENUE REQUIREMENTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
NPV	0.197	0.189	0.143	0.123	0.106	0.092	0.080	0.070	0.052	0.055	0.049	0.044	0.039	0.035	0.031	0.027	0.024	0.021	0.016	
FIXED CHARGE RATIO	0.19674	0.18264	0.14291	0.12286	0.10632	0.09240	0.08000	0.06864	0.06164	0.05603	0.04908	0.04373	0.03891	0.03459	0.03071	0.02722	0.02410	0.02130	0.01878	
CUM NPV	0.197	0.365	0.508	0.631	0.737	0.830	0.910	0.979	1.041	1.096	1.145	1.189	1.228	1.262	1.293	1.320	1.344	1.366	1.384	
K-FACTOR	1.3844																			
LEVELIZED FIXED CHARGE RATIO	0.19674																			
DEPRECIATION BOOK LIFE	15																			

**SECTION 6
MATERIAL AND LABOR ADJUSTMENT FACTORS**

Material and Labor Adjustments:

1	A&G, Non-productive, etc.	0.7200
2	Small Tools % for TEC Field Labor	0.0268
3	% Lighting Supv & Admin for Labor - Maintenance	0.4892
4	% Lighting Supv & Admin for Engr Labor - Installation	0.3208
5	% Lighting Supv & Admin for Labor - Installation	0.3208
6	ED Material Handling % including the following:	0.2517
	Stores Clearing	0.1004
	Inventory Carrying Cost	0.0945
	Self Help Allocation	0.0572
7	Fixture Booklife	19
8	ST Hours in Work Year	2,080
9	ST Hours in Work Month	173.33

**SECTION 7
MONTHLY ENERGY CONSUMPTION**

Calculation of Average Monthly Energy Consumption

	<u>150 Watt Lamp</u>	<u>350 Watt Lamp</u>
Average Operating Wattage - Lamp and Ballast	191.2	394.2
Annual Operating Hours	4,200	4,200
Total Annual Energy Consumption (kWh)	803.0	1,655.6
Average Monthly Energy Consumption (kWh)	67	138