

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 110001-EI

IN RE: TAMPA ELECTRIC'S

FUEL & PURCHASED POWER COST RECOVERY

AND CAPACITY COST RECOVERY PROJECTIONS

JANUARY 2012 THROUGH DECEMBER 2012

OF
BRIAN S. BUCKLEY

DOCUMENT NUMBER-DATE

06319 SEP-1=

FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION 1 PREPARED DIRECT TESTIMONY 2 OF 3 BRIAN S. BUCKLEY 4 5 Please state your name, business address, occupation and 6 Q. employer. 7 8 My name is Brian S. Buckley. My business address is 702 9 North Franklin Street, Tampa, Florida 33602. Ι 10 am employed by Tampa Electric Company ("Tampa Electric" or 11 "company") position of 12 in the Manager, Planning. 13 14 provide a brief outline of your educational 15 Q. background and business experience. 16 17 I received a Bachelor of Science degree in Mechanical 18 A. Engineering in 1997 from the Georgia Institute of 19 Technology and a Master of Business Administration from 20 the University of South Florida in 2003. I began my 21 career with Tampa Electric in 1999 as an Engineer in 22 Plant Technical Services. I have held a number 23 different engineering positions at Tampa Electric's 24 generating stations including 25 power operations,

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instrumentation and controls, performance planning and asset management. In October 2008, I was promoted to Manager, Operations Planning, where I am currently responsible for unit commitment and reporting of generation statistics.

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Q. What is the purpose of your testimony?

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A. My testimony describes Tampa Electric's maintenance planning processes and presents Tampa Electric's methodology for determining the various factors required to compute the Generating Performance Incentive Factor ("GPIF") as ordered by the Commission.

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Q. Have you prepared any exhibits to support your testimony?

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(BSB-3), Yes, Exhibit No. consisting documents, was prepared under my direction and supervision. Document No. 1 contains the GPIF Document No. 2 is a summary of the GPIF schedules. targets for the 2012 period.

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Q. Please describe any corrections you made to your testimony and Exhibit (BSB-2), originally filed on

September 1, 2010 in last year's fuel docket.

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My testimony and Exhibit (BSB-2), originally filed on September 1, 2010, was re-filed in revised form on April 11, 2011, to correct certain errors detected in coal bunker quantities that resulted in an understatement of coal consumption in 2010 at Big Bend Station. testimony also corrected an inadvertent revised understatement of the fuel consumption for the coal units. Those corrections necessitate a recalculation of Tampa Electric's GPIF targets and ranges for 2011 that were approved in Commission Order No. PSC-10-0734-FOFissued December 20, 2010 in last year's EI, adjustment docket. Tampa Electric's petition requests the Commission to re-establish the GPIF targets and ranges for 2011 based on the corrected information contained in my revised testimony and exhibit filed on April 11, 2011.

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Q. Which generating units on Tampa Electric's system are included in the determination of the GPIF?

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A. Four of the company's coal-fired units, one integrated gasification combined cycle unit and two natural gas combined cycle units are included. These are Big Bend

Units 1 through 4, Polk Unit 1 and Bayside Units 1 and 2.

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Q. Do the exhibits you prepared comply with Commissionapproved GPIF methodology?

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with the GPIF documents consistent A. Yes, the are Implementation Manual previously approved by the To account for the concerns presented in Commission. the testimony of Commission Staff witness Sidney W. Matlock during the 2005 fuel hearing, Tampa Electric removes outliers from the calculation of the GPIF Section 3.3 of the GPIF Implementation Manual allows for removal of outliers, and the methodology was approved by the Commission in Order No. PSC-06-1057-FOF-EI issued in Docket No. 060001-EI on December 22, 2006.

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Q. Did Tampa Electric identify any outages as outliers?

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A. Yes. One outage from Big Bend Unit 1, one outage from Big Bend Unit 2, one outage from Big Bend Unit 4 and one outage from Polk Unit 1 were identified as outlying outages; therefore, the associated forced outage hours were removed from the study.

- Q. Please describe how Tampa Electric developed the various factors associated with the GPIF.
- A. Targets were established for equivalent availability and heat rate for each unit considered for the 2012 period. A range of potential improvements and degradations were determined for each of these metrics.

On April 11, 2011 Tampa Electric submitted revised and corrected testimony and Exhibit (BSB-2) of Tampa Electric witness Brian Buckley, correcting errors that had been inadvertently included in Mr. Buckley's testimony and exhibit as originally filed September 1, 2010. The correction of those errors necessitates re-establishment of the company's targets and ranges for 2011 from those approved in Commission Order No. PSC-10-0734-FOF-EI, issued December 20, 2010 in last year's fuel adjustment docket. correct 2011 GPIF targets and ranges for Tampa Electric are set forth in Mr. Buckley's revised Exhibit (BSB-2), at page 4, filed April 11, 2011. The company requests that the corrected 2011 targets and ranges be approved in place of the targets and ranges approved in the December 20, 2010 order in Docket No. 100001-EI.

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Q. How were the target values for unit availability determined?

A. The Planned Outage Factor ("POF") and the Equivalent Unplanned Outage Factor ("EUOF") were subtracted from 100 percent to determine the target Equivalent Availability Factor ("EAF"). The factors for each of the seven units included within the GPIF are shown on page 5 of Document No. 1.

To give an example for the 2012 period, the projected EUOF for Big Bend Unit 3 is 13.5 percent, and the POF is 6.6 percent. Therefore, the target EAF for Big Bend Unit 3 equals 79.98 percent or:

16 | 100% - (13.5% + 6.6%) = 79.9%

This is shown on page 4, column 3 of Document No. 1.

Q. How was the potential for unit availability improvement determined?

A. Maximum equivalent availability is derived by using the following formula:

 $EAF_{MAX} = 1 - [0.799 (EUOF_T) + 0.95 (POF_T)]$

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The factors included in the above equations are the same factors that determine the target equivalent availability. To determine the maximum incentive points, a 20 percent reduction in EUOF and Equivalent Maintenance Outage Factor ("EMOF"), plus a five percent reduction in the POF are necessary. Continuing with the Big Bend Unit 3 example:

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EAF $_{MAX}$ = 1 - [0.799 (13.5%) + 0.95 (6.6%)] = 83.0% This is shown on page 4, column 4 of Document No. 1.

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Q. How was the potential for unit availability degradation determined?

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The potential for unit availability degradation Α. significantly greater than the potential for unit availability improvement. This concept was discussed extensively during the development of the incentive. To effect unit. incorporate this biased into the availability tables, Tampa Electric uses a potential degradation range equal to twice the potential Consequently, minimum equivalent improvement. availability is calculated using the following formula:

EAF $_{MIN} = 1 - [1.40 (EUOF_{T}) + 1.10 (POF_{T})]$

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Again, continuing with the Big Bend Unit 3 example,

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EAF $_{MIN} = 1 - [1.40 (13.5\%) + 1.10 (6.6\%)] = 73.84\%$

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The equivalent availability maximum and minimum for the other six units are computed in a similar manner.

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Q. How did Tampa Electric determine the Planned Outage,
Maintenance Outage, and Forced Outage Factors?

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company's planned outages for January A. The December 2012 are shown on page 21 of Document No. 1. Two GPIF units have a major outage of 28 days or greater in 2012; therefore, two Critical Path Method diagrams are provided. Planned Outage Factors are calculated for each unit. For example, Polk Unit 1 is scheduled for a planned outage from April 22, 2012 to May 26, 2012 and November 11, 2012 to November 15, 2012. There are 960 planned outage hours scheduled for the 2012 period, and a total of 8,784 hours during this 12-month period. Consequently, the POF for Polk Unit 1 is 10.9 percent or:

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960 x 100% = 10.9% 8,784

The factor for each unit is shown on pages 5 and 14 through 20 of Document No. 1. Big Bend Unit 1 has a POF of 5.7 percent. Big Bend Unit 2 has a POF of 5.7 percent. Big Bend Unit 3 has a POF of 6.6 percent. Big Bend Unit 4 has a POF of 6.6 percent. Polk Unit 1 has a POF of 10.9 percent. Bayside Unit 1 has a POF of 3.8 percent, and Bayside Unit 2 has a POF of 17.2 percent.

Q. How did you determine the Forced Outage and Maintenance
Outage Factors for each unit?

A. For each unit the most current 12-month ending value,
June 2011, was used as a basis for the projection. All
projected factors are based upon historical unit
performance unless adjusted for outlying forced outages.
These target factors are additive and result in a EUOF
of 13.46 percent for Big Bend Unit 3. The EUOF for Big
Bend Unit 3 is verified by the data shown on page 16,
lines 3, 5, 10 and 11 of Document No. 1 and calculated
using the following formula:

EUOF = (EFOH + EMOH) x 100%

Or

EUOF = (975 + 208) x 100% = 13.47% 8,784

Relative to Big Bend Unit 3, the EUOF of 13.47 percent forms the basis of the equivalent availability target development as shown on pages 4 and 5 of Document No. 1.

Big Bend Unit 1

The projected EUOF for this unit is 12.4 percent. The unit will have a planned outage in 2012, and the POF is 5.7 percent. Therefore, the target equivalent availability for this unit is 81.9 percent.

Big Bend Unit 2

The projected EUOF for this unit is 18.1 percent. The unit will have a planned outage in 2012, and the POF is 5.7 percent. Therefore, the target equivalent availability for this unit is 76.2 percent.

Big Bend Unit 3

The projected EUOF for this unit is 13.5 percent. The unit will have a planned outage in 2012, and the POF is 6.6 percent. Therefore, the target equivalent availability for this unit is 80.0 percent.

Big Bend Unit 4

The projected EUOF for this unit is 16.0 percent. The unit will have a planned outage in 2012, and the POF is 6.6 percent. Therefore, the target equivalent availability for this unit is 77.4 percent.

Polk Unit 1

The projected EUOF for this unit is 3.6 percent. The unit will have a planned outage in 2012, and the POF is 10.9 percent. Therefore, the target equivalent availability for this unit is 85.5 percent.

Bayside Unit 1

The projected EUOF for this unit is 1.4 percent. The unit will have a planned outage in 2012, and the POF is 3.8 percent. Therefore, the target equivalent availability for this unit is 94.8 percent.

Bayside Unit 2

The projected EUOF for this unit is 2.8 percent. The unit will have a planned outage in 2012, and the POF is 17.2 percent. Therefore, the target equivalent availability for this unit is 80.0 percent.

Q. Please summarize your testimony regarding EAF.

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- A. The GPIF system weighted EAF of 75.81 percent is shown on Page 5 of Document No. 1. This target is greater than the 2008, 2009 and 2010 January through December actual performances.
 - Q. Why are Forced and Maintenance Outage Factors adjusted for planned outage hours?
 - The adjustment makes the factors more accurate Α. and comparable. A unit in a planned outage stage or reserve shutdown stage will not incur a forced or maintenance To demonstrate the effects of a planned outage, note the Equivalent Unplanned Outage Rate and Equivalent Unplanned Outage Factor for Big Bend Unit 3 on page 16 of Document No. 1. Except for the months of March and September, the Equivalent Unplanned Outage Rate and the EUOF are equal. This is because no planned outages are scheduled during these months. During the months of March and September, the Equivalent Unplanned Outage Rate exceeds the EUOF due to scheduled planned outages. Therefore, the adjusted factors apply to the period the planned outage hours after hours have been extracted.

- Q. Does this mean that both rate and factor data are used in calculated data?
- A. Yes. Rates provide a proper and accurate method of determining the unit metrics, which are subsequently converted to factors. Therefore,
- EFOF + EMOF + POF + EAF = 100%

- Since factors are additive, they are easier to work with and to understand.
 - Q. Has Tampa Electric prepared the necessary heat rate data required for the determination of the GPIF?
 - A. Yes. Target heat rates and ranges of potential operation have been developed as required and have been adjusted to reflect the aforementioned agreed upon GPIF methodology.
 - Q. How were these targets determined?
 - A. Net heat rate data for the three most recent July through June annual periods formed the basis of the target development. The historical data and the target

values are analyzed to assure applicability to current conditions of operation. This provides assurance that any periods of abnormal operations or equipment modifications having material effect on heat rate can be taken into consideration.

Q. How were the ranges of heat rate improvement and heat rate degradation determined?

A. The ranges were determined through analysis of historical net heat rate and net output factor data. This is the same data from which the net heat rate versus net output factor curves have been developed for each unit. This information is shown on pages 31 through 37 of Document No. 1.

Q. Please elaborate on the analysis used in the determination of the ranges.

A. The net heat rate versus net output factor curves are the result of a first order curve fit to historical data. The standard error of the estimate of this data was determined, and a factor was applied to produce a band of potential improvement and degradation. Both the curve fit and the standard error of the estimate were

performed by computer program for each unit. These curves are also used in post-period adjustments to actual heat rates to account for unanticipated changes in unit dispatch.

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Q. Please summarize your heat rate projection (Btu/Net kWh) and the range about each target to allow for potential improvement or degradation for the 2012 period.

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The heat rate target for Big Bend Unit 1 is 10,468 The range about this value, to allow for Btu/Net kWh. potential improvement or degradation, is ±633 Btu/Net kWh. The heat rate target for Big Bend Unit 2 is 10,272 Btu/Net kWh with a range of ±410 Btu/Net kWh. The heat rate target for Big Bend Unit 3 is 10,614 Btu/Net kWh, with a range of ±404 Btu/Net kWh. The heat rate target for Big Bend Unit 4 is 10,549 Btu/Net kWh with a range of ±392 Btu/Net kWh. The heat rate target for Polk Unit 1 is 10,220 Btu/Net kWh with a range of ±305 Btu/Net The heat rate target for Bayside Unit 1 is 7,248 kWh. Btu/Net kWh with a range of ±129 Btu/Net kWh. rate target for Bayside Unit 2 is 7,316 Btu/Net kWh with a range of ± 127 Btu/Net kWh. A zone of tolerance of ± 75 Btu/Net kWh is included within the range for each This is shown on page 4, and pages 7 through 13 target.

of Document No. 1.

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Q. Do the heat rate targets and ranges in Tampa Electric's projection meet the criteria of the GPIF and the philosophy of the Commission?

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A. Yes.

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Q. After determining the target values and ranges for average net operating heat rate and equivalent availability, what is the next step in the GPIF?

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The next step is to calculate the savings and weighting A. factor to be used for both average net operating heat rate and equivalent availability. This is shown on pages 7 through 13. The baseline production costing analysis was performed to calculate the total system fuel cost if all units operated at target heat rate and target availability for the period. This total system fuel cost of \$842,493,200 is shown on page 6, column 2. Multiple production cost simulations were performed to fuel unit calculate total system cost with each individually operating maximum improvement at in equivalent availability and each station operating at maximum improvement in average net operating heat rate.

The respective savings are shown on page 6, column 4 of Document No. 1.

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After all of the individual savings are calculated, column 4 totals \$29,723,500 which reflects the savings if all of the units operated at maximum improvement. weighting factor for each metric is then calculated by dividing individual savings by the total. For Big Bend Unit 3, the weighting factor for equivalent availability is 9.79 percent as shown in the right-hand column on page 6. Pages 7 through 13 of Document No. 1 show the point table, the Fuel Savings/(Loss) and the equivalent availability or heat rate value. The individual weighting factor is also shown. For example, on Big Bend Unit 3, page 9, if the unit operates at 83.0 percent equivalent availability, fuel savings equal \$3,576,100 and 10 equivalent availability points would be awarded.

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The GPIF Reward/Penalty table on page 2 is a summary of the tables on pages 7 through 13. The left-hand column of this document shows the incentive points for Tampa Electric. The center column shows the total fuel savings and is the same amount as shown on page 6, column 4, or \$30,848,200. The right hand column of page

2 is the estimated reward or penalty based upor performance.

Q. How was the maximum allowed incentive determined?

A. Referring to page 3, line 14, the estimated average common equity for the period January through December 2012 is \$1,955,104,745. This produces the maximum allowed jurisdictional incentive of \$7,982,556 shown on line 21.

Q. Are there any other constraints set forth by the Commission regarding the magnitude of incentive dollars?

A. Yes. Incentive dollars are not to exceed 50 percent of fuel savings. Page 2 of Document No. 1 demonstrates that this constraint is met.

19 Q. Please summarize your testimony.

A. Tampa Electric has complied with the Commission's directions, philosophy, and methodology in its determination of the GPIF. The GPIF is determined by the following formula for calculating Generating Performance Incentive Points (GPIP):

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GPIP: = (0.0030 \text{ EAP}_{BB1} + 0.0509)
1
                 + 0.0920 EAP<sub>BB3</sub>
                                     + 0.0650
                                                EAP_{BB4}
2
                 + 0.0081 EAP_{PK1}
                                     + 0.0135
                                                EAP_{BAY1}
3
                 + 0.0095
                                     + 0.1920
                            EAP_{BAY2}
                                               {\tt HRP_{BB1}}
4
                 + 0.1241
                             HRP_{BB2}
                                     + 0.1203
                                                HRP_{BB3}
5
                 + 0.1177 \text{ HRP}_{BB4}
                                     + 0.0681 \text{ HRP}_{PK1}
6
                                     + 0.0673
                 + 0.0686
                            HRP_{BAY1}
                                                 HRPBAY2)
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          Where:
9
                      Generating Performance Incentive Points.
          GPIP =
10
                      Equivalent
                                     Availability
                                                      Points
                                                                 awarded/
          EAP =
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                      deducted for Big Bend Units 1, 2, 3, and 4,
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                      Polk Unit 1 and Bayside Units 1 and 2.
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          HRP =
                      Average Net Heat Rate Points awarded/deducted
14
                      for Big Bend Units 1, 2, 3, and 4, Polk Unit 1
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                      and Bayside Units 1 and 2.
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     Q.
          Have
                you prepared a document summarizing
                                                               the
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          targets for the January through December 2011 period?
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     A.
          Yes.
                 Document No. 2 entitled "Summary of GPIF Targets"
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          provides the availability and heat rate targets for each
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          unit.
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Does this conclude your testimony?

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Q.

A. Yes.

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DOCKET NO. 110001-EI
GPIF 2012 PROJECTION FILING
EXHIBIT NO. ____ (BSB-3)
DOCUMENT NO. 1

EXHIBIT TO THE TESTIMONY OF BRIAN S. BUCKLEY

DOCUMENT NO. 1

GPIF SCHEDULES

JANUARY 2012 - DECEMBER 2012

TAMPA ELECTRIC COMPANY GENERATING PERFORMANCE INCENTIVE FACTOR JANUARY 2012 - DECEMBER 2012 TARGETS TABLE OF CONTENTS

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TAMPA ELECTRIC COMPANY GENERATING PERFORMANCE INCENTIVE FACTOR REWARD / PENALTY TABLE JANUARY 2012 - DECEMBER 2012

GENERATING PERFORMANCE INCENTIVE POINTS (GPIP)	FUEL SAVINGS / (LOSS) (\$000)	GENERATING PERFORMANCE INCENTIVE FACTOR (\$000)
+10	29,723.5	7,982.6
+9	26,751.2	7,184.3
+8	23,778.8	6,386.0
+7	20,806.5	5,587.8
+6	17,834.1	4,789.5
+5	14,861.8	3,991.3
+4	11,889.4	3,193.0
+3	8,917.1	2,394.8
+2	5,944.7	1,596.5
+1	2,972.4	798.3
0	0.0	0.0
-1	(2,880.4)	(798.3)
-2	(5,760.8)	(1,596.5)
-3	(8,641.1)	(2,394.8)
-4	(11,521.5)	(3,193.0)
-5	(14,401.9)	(3,991.3)
-6	(17,282.3)	(4,789.5)
-7	(20,162.7)	(5,587.8)
-8	(23,043.0)	(6,386.0)
-9	(25,923.4)	(7,184.3)
-10	(28,803.8)	(7,982.6)

TAMPA ELECTRIC COMPANY GENERATING PERFORMANCE INCENTIVE FACTOR CALCULATION OF MAXIMUM ALLOWED INCENTIVE DOLLARS JANUARY 2012 - DECEMBER 2012

Line 21	Maximum Allowed Jurisdi (line 17 times line 20)	ictional Incentive Dollars	\$ 7,982,556	
Line 20	Jurisdictional Separation Fa (line 18 divided by line 19)	actor	99.90%	
Line 19	Total Sales		19,064,222	MWH
Line 18	Jurisdictional Sales		19,044,253	MWH
Line 17	Maximum Allowed Incentive (line 14 times line 15 divided		\$ 7,990,926	
Line 16	Revenue Expansion Factor		61.17%	
Line 15	25 Basis points		0.0025	
Line 14	(Summation of line 1 throug	h line 13 divided by 13)	\$ 1,955,104,745	
Line 13	Month of December	2012	\$ 2,038,294,191	
Line 12	Month of November	2012	\$ 2,019,362,666	
Line 11	Month of October	2012	\$ 2,000,606,976	
Line 10	Month of September	2012	\$ 1,968,655,307	
Line 9	Month of August	2012	\$ 1,950,370,583	
Line 8	Month of July	2012	\$ 1,932,255,686	
Line 7	Month of June	2012	\$ 1,982,150,833	
Line 6	Month of May	2012	\$ 1,963,740,763	
Line 5	Month of April	2012	\$ 1,945,501,685	
Line 4	Month of March	2012	\$ 1,913,673,022	
Line 3	Month of February	2012	\$ 1,895,898,969	
Line 2	Month of January	2012	\$ 1,878,290,000	
Line 1	Beginning of period balance End of month common equi		\$ 1,927,561,000	

TAMPA ELECTRIC COMPANY GPIF TARGET AND RANGE SUMMARY JANUARY 2012 - DECEMBER 2012

EQUIVALENT AVAILABILITY

PLANT / UNIT	WEIGHTING FACTOR (%)	EAF TARGET (%)	EAF RA MAX. (%)	NGE MIN. (%)	MAX. FUEL SAVINGS (\$000)	MAX. FUEL LOSS (\$000)
BIG BEND 1	0.30%	81.9	84.6	76.3	89.3	(936.3)
BIG BEND 2	5.09%	76.2	80.1	68.4	1,512.2	(122.3)
BIG BEND 3	9.20%	80.0	83.0	73.9	2,734.4	(1,685.0)
BIG BEND 4	6.50%	77.4	80.9	70.3	1,932.3	(1,553.3)
POLK 1	0.81%	85.5	86.8	83.0	241.1	(84.9)
BAYSIDE 1	1.35%	94.8	95.2	93.8	401.1	(1,665.7)
BAYSIDE 2	0.95%	80.0	81.4	77.1	280.9	(224.1)
GPIF SYSTEM	24.19%					

AVERAGE NET OPERATING HEAT RATE

PLANT / UNIT	WEIGHTING FACTOR (%)	ANOHR Btu/kwh	TARGET NOF	ANOHR MIN.	RANGE MAX	MAX. FUEL SAVINGS (\$000)	MAX. FUEL LOSS (\$000)
BIG BEND 1	19.20%	10,468	92.9	9,836	11,101	5,705.6	(5,705.6)
BIG BEND 2	12.41%	10,272	92.9	9,862	10,682	3,688.3	(3,688.3)
BIG BEND 3	12.03%	10,614	86.1	10,209	11,018	3,576.1	(3,576.1)
BIG BEND 4	11.77%	10,549	88.0	10,157	10,941	3,499.1	(3,499.1)
POLK 1	6.81%	10,220	94.2	9,915	10,525	2,023.9	(2,023.9)
BAYSIDE 1	6.86%	7,248	82.6	7,120	7,377	2,040.2	(2,040.2)
BAYSIDE 2	6.73%	7,316	83.2	7,189	7,442	1,998.9	(1,998.9)
GPIF SYSTEM	75.81%						

TAMPA ELECTRIC COMPANY COMPARISON OF GPIF TARGETS VS PRIOR PERIOD ACTUAL PERFORMANCE

EQUIVALENT AVAILABILITY (%)

	WEIGHTING FACTOR	NORMALIZED WEIGHTING		RGET PERM N 12 - DEC			L PERFORM N 10 - DEC 1			, PERFORM N 09 - DEC	09	JA	. PERFOR N 08 - DEC	08
PLANT / UNIT	(%)	FACTOR	POF	EUOF	EUOR	POF	EUOF	EUOR	POF	EUOF	EUOR	POF	EUOF	EUOR
BIG BEND 1	0.30%	1.2%	5.7	12.4	13.2	24.5	15.1	19.9	14.0	30.3	21.5	4.9	19.4	20.4
BIG BEND 2	5.09%	21.0%	5.7	18.1	19.2	5.5	26.1	27.6	26.5	36.7	42.0	10.2	18.8	20.8
BIG BEND 3	9.20%	38.0%	6.6	13.5	14.4	8.4	11.9	13.1	5.0	16.2	12.2	32.4	23.1	34.2
BIG BEND 4	6.50%	26.9%	6.6	16.0	17.2	19.3	14.2	17.5	1.9	18.6	12.9	5.8	21.4	22.7
POLK 1	0.81%	3.4%	10.9	3.6	4.0	4.8	5.2	5.7	5.6	1.3	0.2	3.0	13.8	16.9
BAYSIDE 1	1.35%	5.6%	3.8	1.4	1.5	5.0	1.1	1.1	6.8	1.3	0.6	2.4	2.8	3.1
BAYSIDE 2	0.95%	3.9%	17.2	2.8	3.4	8.7	1.8	1.9	14.1	9.4	11.4	14.5	1.9	2.4
GPIF SYSTEM	24.19%	100.0%	6.8	13.7	14.6	10.6	14.3	16.1	9.3	19.7	17.7	16.9	19.4	24.5
GPIF SYSTEM WEIGHTED I	EQUIVALENT AVAIL	ABILITY (%)		<u>79.5</u>			<u>75.1</u>			<u>71.0</u>			<u>63.7</u>	

3 PERIOD AVERAGE DF EUOF EUOR POF

3 PERIOD AVERAGE EAF

12.3 17.8 19.4 69.9

AVERAGE NET OPERATING HEAT RATE (Btu/kWh)

PLANT / UNIT	WEIGHTING FACTOR (%)	NORMALIZED WEIGHTING FACTOR	TARGET HEAT RATE JAN 12 - DEC 12	ADJUSTED ACTUAL PERFORMANCE HEAT RATE JAN 10 - DEC 10	ADJUSTED ACTUAL PERFORMANCE HEAT RATE JAN 09 - DEC 09	ADJUSTED ACTUAL PERFORMANCE HEAT RATE JAN 08 - DEC 08
BIG BEND 1	19.20%	25.3%	10,468	10,182	10,394	10,793
BIG BEND 2	12.41%	16.4%	10,272	10,078	10,555	10,595
BIG BEND 3	12.03%	15.9%	10,614	10,707	10,713	10,670
BIG BEND 4	11.77%	15.5%	10,549	10,373	10,686	10,773
POLK 1	6.81%	9.0%	10,220	10,207	10,288	10,206
BAYSIDE 1	6.86%	9.1%	7,248	7,237	7,253	7,226
BAYSIDE 2	6.73%	8.9%	7,316	7,313	7,293	7,304
GPIF SYSTEM	75.81%	100.0%				
GPIF SYSTEM WEIGHTED AVE	RAGE HEAT RAT	E (Btu/kWh)	9,878	9,759	9,947	10,053

TAMPA ELECTRIC COMPANY DERIVATION OF WEIGHTING FACTORS JANUARY 2012 - DECEMBER 2012 PRODUCTION COSTING SIMULATION FUEL COST (\$000)

UNIT PERFORMANCE INDICATOR	AT TARGET (1)	AT MAXIMUM IMPROVEMENT (2)	SAVINGS (3)	WEIGHTING FACTOR (% OF SAVINGS)
EQUIVALENT AVAILABILITY				
EA ₁ BIG BEND 1	842,493.2	842,403.9	89.3	0.30%
EA ₂ BIG BEND 2	842,493.2	840,981.1	1,512.2	5.09%
EA ₃ BIG BEND 3	842,493.2	839,758.8	2,734.4	9.20%
EA ₄ BIG BEND 4	842,493.2	840,561.0	1,932.3	6.50%
EA ₇ POLK 1	842,493.2	842,252.2	241.1	0.81%
EA ₈ BAYSIDE 1	842,493.2	842,092.1	401.1	1.35%
EA ₉ BAYSIDE 2	842,493.2	842,212.3	280.9	0.95%
AVERAGE HEAT RATE				
AHR ₁ BIG BEND 1	842,493.2	836,787.6	5,705.6	19.20%
AHR ₂ BIG BEND 2	842,493.2	838,804.9	3,688.3	12.41%
AHR ₃ BIG BEND 3	842,493.2	838,917.1	3,576.1	12.03%
AHR ₄ BIG BEND 4	842,493.2	838,994.1	3,499.1	11.77%
AHR ₇ POLK 1	842,493.2	840,469.3	2,023.9	6.81%
AHR ₈ BAYSIDE 1	842,493.2	840,453.0	2,040.2	6.86%
AHR, BAYSIDE 2	842,493.2	840,494.3	1,998.9	6.73%
TOTAL SAVINGS		-	29,723.5	100.00%

⁽¹⁾ Fuel Adjustment Base Case - All unit performance indicators at target.

⁽²⁾ All other units performance indicators at target.

⁽³⁾ Expressed in replacement energy cost.

GPIF TARGET AND RANGE SUMMARY

JANUARY 2012 - DECEMBER 2012

EQUIVALENT AVAILABILITY POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL EQUIVALENT AVAILABILITY	AVERAGE HEAT RATE POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL AVERAGE HEAT RATE
+10	89.3	84.6	+10	5,705.6	9,836
+9	80.4	84.4	+9	5,135.1	9,891
+8	71.4	84.1	+8	4,564.5	9,947
+7	62.5	83.8	+7	3,994.0	10,003
+6	53.6	83.5	+6	3,423.4	10,059
+5	44.7	83.2	+5	2,852.8	10,114
+4	35.7	83.0	+4	2,282.3	10,170
+3	26.8	82.7	+3	1,711.7	10,226
+2	17.9	82.4	+2	1,141.1	10,282
+1	8.9	82.1	+1	570.6	10,337
					10,393
0	0.0	81.9	o	0.0	10,468
					10,543
-1	(93.6)	81.3	-1	(570.6)	10,599
-2	(187.3)	80.8	-2	(1,141.1)	10,655
-3	(280.9)	80.2	-3	(1,711.7)	10,710
4	(374.5)	79.7	-4	(2,282.3)	10,766
-5	(468.1)	79.1	-5	(2,852.8)	10,822
-6	(561.8)	78.5	-6	(3,423.4)	10,878
-7	(655.4)	78.0	-7	(3,994.0)	10,933
-8	(749.0)	77.4	-8	(4,564.5)	10,989
-9	(842.7)	76.9	-9	(5,135.1)	11,045
-10	(936.3)	76.3	-10	(5,705.6)	11,101
	Weighting Factor =	0.30%		Weighting Factor =	19.20%

GPIF TARGET AND RANGE SUMMARY

JANUARY 2012 - DECEMBER 2012

EQUIVALENT AVAILABILITY POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL EQUIVALENT AVAILABILITY	AVERAGE FUEL HEAT RATE SAVINGS / (LOSS) POINTS (\$000)		ADJUSTED ACTUAL AVERAGE HEAT RATE
+10	1,512.2	80.1	+10	3,688.3	9,862
+9	1,360.9	79.7	+9	3,319.5	9,895
+8	1,209.7	79.3	+8	2,950.7	9,929
+7	1,058.5	78.9	+7	2,581.8	9,962
+6	907.3	78.5	+6	2,213.0	9,996
+5	756.1	78.1	+5	1,844.2	10,029
+4	604.9	77.7	+4	1,475.3	10,063
+3	453.6	77.4	+3	1,106.5	10,096
+2	302.4	77.0	+2	737.7	10,130
+1	151.2	76.6	+1	368.8	10,163
					10,197
0	0.0	76.2	0	0.0	10,272
					10,347
-1	(12.2)	75.4	-1	(368.8)	10,380
-2	(24.5)	74.6	-2	(737.7)	10,414
-3	(36.7)	73.8	-3	(1,106.5)	10,448
-4	(48.9)	73.1	-4	(1,475.3)	10,481
-5	(61.1)	72.3	-5	(1,844.2)	10,515
-6	(73.4)	71.5	-6	(2,213.0)	10,548
-7	(85.6)	70.7	-7	(2,581.8)	10,582
-8	(97.8)	69.9	-8	(2,950.7)	10,615
-9	(110.0)	69.2	-9	(3,319.5)	10,649
-10	(122.3)	68.4	-10	(3,688.3)	10,682
	Weighting Factor =	5.09%		Weighting Factor =	12.41%

GPIF TARGET AND RANGE SUMMARY

JANUARY 2012 - DECEMBER 2012

EQUIVALENT AVAILABILITY POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL EQUIVALENT AVAILABILITY	AVERAGE HEAT RATE POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL AVERAGE HEAT RATE
+10	2,734.4	83.0	+10	3,576.1	10,209
+9	2,461.0	82.7	+9	3,218.5	10,242
+8	2,187.5	82.4	+8	2,860.9	10,275
+7	1,914.1	82.1	+7	2,503.3	10,308
+6	1,640.6	81.8	+6	2,145.7	10,341
+5	1,367.2	81.5	+5	1,788.1	10,374
+4	1,093.8	81.2	+4	1,430.5	10,407
+3	820.3	80.9	+3	1,072.8	10,440
+2	546.9	80.6	+2	715.2	10,473
+1	273.4	80.3	+1	357.6	10,506
					10,539
0	0.0	80.0	0	0.0	10,614
					10,689
-1	(168.5)	79.4	-1	(357.6)	10,722
-2	(337.0)	78.8	-2	(715.2)	10,755
-3	(505.5)	78.2	-3	(1,072.8)	10,788
-4	(674.0)	77.6	-4	(1,430.5)	10,820
-5	(842.5)	77.0	-5	(1,788.1)	10,853
-6	(1,011.0)	76.4	-6	(2,145.7)	10,886
-7	(1,179.5)	75.8	-7	(2,503.3)	10,919
-8	(1,348.0)	75.1	-8	(2,860.9)	10,952
-9	(1,516.5)	74.5	-9	(3,218.5)	10,985
-10	(1,685.0)	73.9	-10	(3,576.1)	11,018
	Weighting Factor =	9.20%		Weighting Factor =	12.03%

GPIF TARGET AND RANGE SUMMARY

JANUARY 2012 - DECEMBER 2012

EQUIVALENT AVAILABILITY POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL EQUIVALENT AVAILABILITY	AVERAGE HEAT RATE POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL AVERAGE HEAT RATE
+10	1,932.3	80.9	+10	3,499.1	10,157
+9	1,739.1	80.6	+9	3,149.2	10,188
+8	1,545.8	80.2	+8	2,799.3	10,220
+7	1,352.6	79.9	+7	2,449.4	10,252
+6	1,159.4	79.5	+6	2,099.5	10,283
+5	966.1	79.2	+5	1,749.5	10,315
+4	772.9	78.8	+4	1,399.6	10,347
+3	579.7	78.5	+3	1,049.7	10,379
+2	386.5	78.1	+2	699.8	10,410
+1	193.2	77.8	+1	349.9	10,442
					10,474
0	0.0	77.4	0	0.0	10,549
					10,624
-1	(155.3)	76.7	-1	(349.9)	10,656
-2	(310.7)	76.0	-2	(699.8)	10,687
-3	(466.0)	75.3	-3	(1,049.7)	10,719
-4	(621.3)	74.6	-4	(1,399.6)	10,751
-5	(776.6)	73.9	-5	(1,749.5)	10,782
-6	(932.0)	73.2	-6	(2,099.5)	10,814
-7	(1,087.3)	72.5	-7	(2,449.4)	10,846
-8	(1,242.6)	71.8	-8	(2,799.3)	10,878
-9	(1,397.9)	71.0	-9	(3,149.2)	10,909
-10	(1,553.3)	70.3	-10	(3,499.1)	10,941
	Weighting Factor =	6.50%		Weighting Factor =	11.77%

GPIF TARGET AND RANGE SUMMARY

JANUARY 2012 - DECEMBER 2012

POLK 1

EQUIVALENT AVAILABILITY POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL EQUIVALENT AVAILABILITY	AVERAGE HEAT RATE POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL AVERAGE HEAT RATE			
+10	241.1	86.8	+10	2,023.9	9,915			
+9	217.0	86.6	+9	9,938				
+8	192.9	86.5	+8	9,961				
+7	168.7	86.4	5.4 +7 1,416.7					
+6	144.6	86.3	+6	1,214.4	10,007			
+5	120.5	86.1	+5	1,012.0	10,030			
+4	96.4	86.0	+4	809.6	10,053			
+3	72.3	85.9	+3	607.2	10,076			
+2	48.2	85.8	10,099					
+1	24.1	85.6	+1	202.4	10,122			
					10,145			
0	0.0	85.5	0	0.0	10,220			
					10,295			
-1	(8.5)	85.2	-1	(202.4)	10,318			
-2	(17.0)	85.0	-2	(404.8)	10,341			
-3	(25.5)	84.7	-3	(607.2)	10,364			
-4	(33.9)	84.5	-4	(809.6)	10,387			
-5	(42.4)	84.2	-5	(1,012.0)	10,410			
-6	(50.9)	84.0	-6 (1,214.4)		10,433			
-7	(59.4)	83.7	-7	(1,416.7)	10,456			
-8	(67.9)	83.5	-8	(1,619.1)	10,479			
-9	(76.4)	83.2	-9	(1,821.5)	10,502			
-10	(84.9)	83.0	-10	(2,023.9)	10,525			
	Weighting Factor =	0.81%		Weighting Factor =	6.81%			

GPIF TARGET AND RANGE SUMMARY

JANUARY 2012 - DECEMBER 2012

BAYSIDE 1

EQUIVALENT AVAILABILITY POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL EQUIVALENT AVAILABILITY	LENT HEAT RATE SAVINGS / (LOSS)		ADJUSTED ACTUAL AVERAGE HEAT RATE	
+10	401.1	95.2	+10	2,040.2	7,120	
+9	361.0	95.2	+9	1,836.2	7,125	
+8	320.9	95.1	+8	1,632.2	7,130	
+7	280.8	95.1	+7	7,136		
+6	240.7	95.1	+6	1,224.1	7,141	
+5	200.6	95.0	+5	1,020.1	7,146	
+4	160.4	95.0	+4	816.1	7,152	
+3	120.3	94.9	+3	612.1	7,157	
+2	80.2	94.9	7,163			
+1	40.1	94.8 +1 204.0			7,168	
					7,173	
0	0.0	94.8	0	0.0	7,248	
					7,323	
-1	(166.6)	94.7	-1	(204.0)	7,329	
-2	(333.1)	94.6	-2	(408.0)	7,334	
-3	(499.7)	94.5	-3	(612.1)	7,339	
-4	(666.3)	94.4	-4	(816.1)	7,345	
-5	(832.8)	94.3	-5	(1,020.1)	7,350	
-6	(999.4)	94.2			7,355	
-7	(1,166.0)	94.1			7,361	
-8	(1,332.6)	94.0	-8	(1,632.2)	7,366	
-9	(1,499.1)	93.9	-9	(1,836.2)	7,371	
-10	(1,665.7)	93.8	-10	(2,040.2)	7,377	
	Weighting Factor =	1.35%		Weighting Factor =	6.86%	

GPIF TARGET AND RANGE SUMMARY

JANUARY 2012 - DECEMBER 2012

BAYSIDE 2

EQUIVALENT AVAILABILITY POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL EQUIVALENT AVAILABILITY	AVERAGE HEAT RATE POINTS	FUEL SAVINGS / (LOSS) (\$000)	ADJUSTED ACTUAL AVERAGE HEAT RATE			
+10	280.9	81.4	+10	1,998.9	7,189			
+9	252.8	81.2	+9	1,799.1	7,194			
+8	224.7	81.1	+8	+8 1,599.2 +7 1,399.3				
+7	196.6	81.0	+7					
+6	168.5	80.8	+6	1,199.4	7,210			
+5	140.5	80.7	+5	999.5	7,215			
+4	112.4	80.5	+4	799.6	7,220			
+3	84.3	80.4	+3	599.7	7,225			
+2	56.2	80.2	+2	399.8	7,230			
+1	28.1	80.1	+1	7,236				
					7,241			
0	0.0	80.0	0	0.0	7,316			
					7,391			
-1	(22.4)	79.7	-1	(199.9)	7,396			
-2	(44.8)	79.4	-2	(399.8)	7,401			
-3	(67.2)	79.1	-3	(599.7)	7,406			
-4	(89.7)	78.8	-4	(799.6)	7,411			
-5	(112.1)	78.5	-5	(999.5)	7,417			
-6	(134.5)	78.2	-6	(1,199.4)	7,422			
-7	(156.9)	78.0	-7	(1,399.3)	7,427			
-8	(179.3)	77.7	-8	(1,599.2)	7,432			
-9	(201.7)	77.4	-9	(1,799.1)	7,437			
-10	(224.1)	77.1	-10	(1,998.9)	7,442			
	Weighting Factor =	0.95%		Weighting Factor =	6.73%			

ESTIMATED UNIT PERFORMANCE DATA

JANUARY 2012 - DECEMBER 2012

	PLANT/UNIT	MONTH OF:	PERIOD											
	BIG BEND 1	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
	1. EAF (%)	86.8	86.8	86.8	46.3	86.8	86.8	86.8	86.8	86.8	86.8	86.8	67.2	81.9
	2. POF	0.0	0.0	0.0	46.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.6	5.7
	3. EUOF	13.2	13.2	13.2	7.0	13.2	13.2	13.2	13.2	13.2	13.2	13.2	10.2	12.4
	4. EUOR	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
	5. PH	744	696	743	720	744	720	744	744	720	744	721	744	8,784
ω	6. SH	668	625	668	345	668	646	668	668	646	668	646	517	7,433
Ø	7. RSH	0	0	0	0	0	0	0	0	0	0	0	0	0
	8. UH	76	71	75	375	76	74	76	76	74	76	75	227	1,351
	9. РОН	0	0	0	336	0	0	0	0	0	0	0	168	504
	10. EFOH	73	69	73	38	73	71	73	73	71	73	71	57	817
	11. ЕМОН	24	23	24	13	24	24	24	24	24	24	24	19	272
	12. OPER BTU (GBTU)	2,532	2,357	2,572	1,233	2,547	2,465	2,547	2,507	2,464	2,513	2,429	1,913	28,080
	13. NET GEN (MWH)	241,210	224,340	245,800	116,700	244,210	236,370	244,140	239,600	236,180	240,320	232,170	181,410	2,682,450
	14. ANOHR (Btu/kwh)	10,496	10,506	10,464	10,562	10,431	10,429	10,431	10,464	10,431	10,459	10,461	10,544	10,468
	15. NOF (%)	91.4	90.9	93.2	87.9	95.0	95.0	94.9	93.2	95.0	93.4	93.3	88.8	92.9
	16. NPC (MW)	395	395	395	385	385	385	385	385	385	385	385	395	388
	17. ANOHR EQUATION	ANO	HR = NOF(-18.440)+	12,182								

ESTIMATED UNIT PERFORMANCE DATA

	PLANT/UNIT	MONTH OF:	PERIOD											
	BIG BEND 2	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
	1. EAF (%)	80.8	80.8	80.8	43.1	80.8	80.8	80.8	80.8	80.8	80.8	80.8	62.6	76.2
	2. POF	0.0	0.0	0.0	46.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.6	5.7
	3. EUOF	19.2	19.2	19.2	10.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	14.8	18.1
	4. EUOR	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
	5. PH	744	696	743	720	744	720	744	744	720	744	721	744	8,784
	6. SH	633	592	633	327	633	613	633	633	613	633	613	490	7,046
0	7. RSH	0	0	0	0	0	0	0	0	0	0	0	0	0
	8. UH	111	104	110	393	111	107	111	111	107	111	108	254	1,738
	9. POH	0	0	0	336	0	0	0	0	0	0	0	168	504
	10. EFOH	132	123	132	68	132	127	132	132	127	132	128	102	1,466
	11. ЕМОН	11	10	11	6	11	11	11	11	11	11	11	8	122
	12. OPER BTU (GBTU)	2,382	2,208	2,396	1,181	2,314	2,275	2,350	2,347	2,273	2,332	2,263	1,784	26,104
	13. NET GEN (MWH)	231,860	214,760	233,370	114,830	225,210	221,630	228,980	228,620	221,400	227,040	220,410	173,220	2,541,330
	14. ANOHR (Btu/kwh)	10,273	10,280	10,268	10,284	10,275	10,264	10,264	10,265	10,265	10,270	10,268	10,297	10,272
	15. NOF (%)	92.7	91.8	93.3	91.2	92.4	93.9	94.0	93.8	93.8	93.2	93.4	89.5	92.9
	16. NPC (MW)	395	395	395	385	385	385	385	385	385	385	385	395	388
	17. ANOHR EQUATION	ANO	HR = NOF(-7.525)+	10,971								

ESTIMATED UNIT PERFORMANCE DATA

	PLANT/UNIT	MONTH OF:	PERIOD											
	BIG BEND 3	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
	1. EAF (%)	85.6	85.6	57.9	85.6	85.6	85.6	85.6	85.6	45.6	85.6	85.6	85.6	80.0
	2. POF	0.0	0.0	32.3	0.0	0.0	0.0	0.0	0.0	46.7	0.0	0.0	0.0	6.6
	3. EUOF	14.4	14.4	9.8	14.4	14.4	14.4	14.4	14.4	7.7	14.4	14.4	14.4	13.5
	4. EUOR	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
	5. PH	744	696	743	720	744	720	744	744	720	744	721	744	8,784
	6. SH	661	619	448	640	661	640	661	661	342	661	640	661	7,295
7	7. RSH	0	0	0	0	0	0	0	0	0	0	0	0	0
	8. UH	83	77	295	80	83	80	83	83	378	83	81	83	1,489
	9. POH	0	0	240	0	0	0	0	0	336	0	0	0	576
	10. EFOH	88	83	60	85	88	85	88	88	46	88	86	88	975
	11. ЕМОН	19	18	13	18	19	18	19	19	10	19	18	19	208
	12. OPER BTU (GBTU)	2,224	2,023	1,495	2,215	2,205	2,200	2,239	2,216	1,097	2,193	2,038	2,187	24,336
	13. NET GEN (MWH)	209,910	189,800	140,860	210,250	207,750	208,610	211,660	209,000	102,550	206,430	190,290	205,750	2,292,860
	14. ANOHR (Btu/kwh)	10,595	10,657	10,613	10,533	10,614	10,548	10,580	10,603	10,696	10,625	10,710	10,631	10,614
	15. NOF (%)	87.0	84.0	86.1	90.0	86.1	89.3	87.7	86.6	82.2	85.6	81.5	85.3	86.1
	16. NPC (MW)	365	365	365	365	365	365	365	365	365	365	365	365	365
	17. ANOHR EQUATION	ANO	HR = NOF(-20.706)+	12,397								

ESTIMATED UNIT PERFORMANCE DATA

	PLANT/UNIT	MONTH OF:	PERIOD											
	BIG BEND 4	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
	1. EAF (%)	82.8	54.3	82.8	82.8	82.8	82.8	82.8	82.8	82.8	50.8	77.3	82.8	77.4
	2. POF	0.0	34.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.7	6.7	0.0	6.6
	3. EUOF	17.2	11.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	10.5	16.0	17.2	16.0
	4. EUOR	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
	5. PH	744	696	743	720	744	720	744	744	720	744	721	744	8,784
	6, SH	647	397	647	627	647	627	647	647	627	397	585	647	7,142
Œ	7. RSH	0	0	0	0	0	0	0	0	0	0	0	0	0
	8. UH	97	299	96	93	97	93	97	97	93	347	136	97	1,642
	9. POH	0	240	0	0	0	0	0	0	0	288	48	0	576
	10. EFOH	101	62	101	97	101	97	101	101	97	62	91	101	1,111
	11. ЕМОН	27	17	27	26	27	26	27	27	26	17	24	27	297
	12. OPER BTU (GBTU)	2,557	1,411	2,599	2,473	2,537	2,510	2,561	2,562	2,501	1,525	2,175	2,426	27,853
	13. NET GEN (MWH)	242,130	129,360	247,550	236,010	241,640	240,830	244,730	244,830	239,770	144,210	203,460	225,900	2,640,420
	14. ANOHR (Btu/kwh)	10,558	10,909	10,498	10,477	10,499	10,420	10,464	10,463	10,433	10,575	10,689	10,740	10,549
	15. NOF (%)	87.6	76.3	89.6	90.3	89.6	92.1	90.7	90.7	91.7	87.1	83.4	81.8	88.0
	16. NPC (MW)	427	427	427	417	417	417	417	417	417	417	417	427	420
	17. ANOHR EQUATION	ANO	HR = NOF(-30.914)+	13,268								

ESTIMATED UNIT PERFORMANCE DATA

	PLANT/UNIT	MONTH OF:	PERIOD											
	POLK I	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
	1. EAF (%)	96.0	96.0	96.0	67.2	15.5	96.0	96.0	96.0	96.0	96.0	80.0	96.0	85.5
	2. POF	0.0	0.0	0.0	30.0	83.9	0.0	0.0	0.0	0.0	0.0	16.6	0.0	10.9
	3. EUOF	4.0	4.0	4.0	2.8	0.6	4.0	4.0	4.0	4.0	4.0	3.3	4.0	3.6
	4. EUOR	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	5. PH	744	696	743	720	744	720	744	744	720	744	721	744	8,784
	6. SH	724	677	724	490	117	700	724	724	700	724	584	724	7,612
C	7. RSH	0	0	0	0	0	0	0	0	0	0	0	0	0
	8. UH	20	19	19	230	627	20	20	20	20	20	137	20	1,172
	9. РОН	0	0	0	216	624	0	0	0	0	0	120	0	960
	10. EFOH	17	16	17	11	3	16	17	17	16	17	14	17	178
	11. EMOH	13	12	13	9	2	13	13	13	13	13	10	13	136
	12. OPER BTU (GBTU)	1,525	1,428	1,524	1,037	244	1,479	1,523	1,549	1,504	1,540	1,231	1,535	16,120
	13. NET GEN (MWH)	148,600	139,260	148,470	101,500	23,560	144,560	148,290	152,770	148,750	151,200	120,000	150,400	1,577,360
	14. ANOHR (Btu/kwh)	10,260	10,251	10,264	10,221	10,341	10,234	10,269	10,141	10,110	10,186	10,256	10,209	10,220
	15. NOF (%)	93.3	93.5	93.2	94.2	91.5	93.9	93.1	95.9	96.6	94.9	93.4	94.4	94.2
	16. NPC (MW)	220	220	220	220	220	220	220	220	220	220	220	220	220
	17. ANOHR EQUATION	ANO	HR = NOF(-45.481) +	14,504								

ESTIMATED UNIT PERFORMANCE DATA

	PLANT/UNIT	MONTH OF:	MONTH OF:	MONTH OF:	MONTH OF:	MONTH OF:	PERIOD							
	BAYSIDE 1	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
	1. EAF (%)	98.5	98.5	76.3	98.5	98.5	98.5	98.5	98.5	98.5	76.3	98.5	98.5	94.8
	2. POF	0.0	0.0	22.6	0.0	0.0	0.0	0.0	0.0	0.0	22.6	0.0	0.0	3.8
	3. EUOF	1.5	1.5	1.1	1.5	1.5	1.5	1.5	1.5	1.5	1.1	1.5	1.5	1.4
	4. EUOR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	5. PH	744	696	743	720	744	720	744	7 44	720	744	721	744	8,784
4		448	527	436	415	432	445	474	493	470	257	371	511	5,279
C	7. RSH	285	158	131	294	301	264	259	240	239	311	339	222	3,045
	8. UH	11	10	176	11	11	11	11	11	11	176	11	11	459
	9. POH	0	0	168	0	0	0	0	0	0	168	0	0	336
	10. EFOH	3	3	2	3	3	3	3	3	3	2	3	3	31
	11. EMOH	8	8	6	8	8	8	8	8	8	6	8	8	93
	12. OPER BTU (GBTU)	1,831	2,330	2,008	1,764	1,905	1,991	2,138	2,243	2,124	1,053	1,515	2,220	23,125
	13. NET GEN (MWH)	251,490	320,680	276,800	243,520	263,220	275,350	295,710	310,350	293,850	145,130	208,890	305,440	3,190,430
	14. ANOHR (Btu/kwh)	7,282	7,265	7,255	7,245	7,236	7,232	7,230	7,228	7,230	7,254	7,255	7,268	7,248
	15. NOF (%)	70.8	76.8	80.2	83.6	87.0	88.3	89.0	89.7	89.2	80.6	80.3	75.5	82.6
	16. NPC (MW)	792	792	792	701	701	701	701	701	701	701	701	792	731
	17. ANOHR EQUATION	ANO	HR = NOF(-2.816)+	7,481								

ESTIMATED UNIT PERFORMANCE DATA

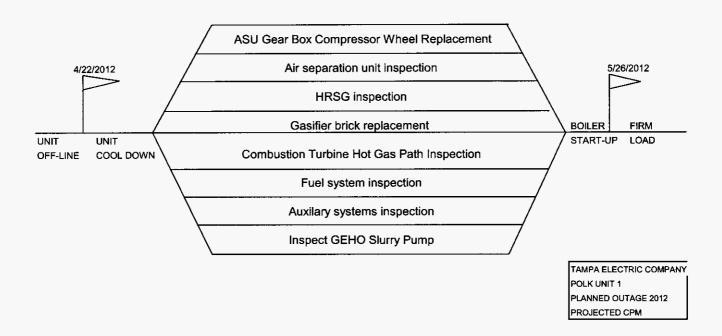
	PLANT/UNIT	MONTH OF:	PERIOD											
	BAYSIDE 2	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
	1. EAF (%)	96.6	33.3	0.0	77.3	96.6	96.6	96.6	96.6	96.6	96.6	74.1	96.6	80.0
	2. POF	0.0	65.5	100.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	23.3	0.0	17.2
	3. EUOF	3.4	1,2	0.0	2.7	3.4	3.4	3.4	3.4	3.4	3.4	2.6	3.4	2.8
	4. EUOR	3.4	3.4	0.0	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
	5. PH	744	696	743	720	744	720	744	744	720	744	721	744	8,784
•	6. SH	232	65	0	505	611	604	641	647	631	602	303	304	5,144
—	7. RSH	487	167	0	51	108	92	78	71	65	116	231	414	1,880
	8. UH	26	464	743	164	26	25	26	26	25	26	187	26	1,760
	9. РОН	0	456	743	144	0	0	0	0	0	0	168	0	1,511
	10. EFOH	ι	0	0	1	ı	i	i	1	1	1	1	1	9
	11. EMO H	25	8	0	19	25	24	25	25	24	25	18	25	241
	12. OPER BTU (GBTU)	1,360	385	0	2,883	3,595	3,565	3,772	3,854	3,785	3,471	1,652	1,898	30,304
	13. NET GEN (MWH)	184,350	52,170	0	394,460	493,670	489,650	517,980	529,900	520,780	475,410	224,950	258,930	4,142,250
	14. ANOHR (Btu/kwh)	7,377	7,373	0	7,308	7,283	7,280	7,283	7,273	7,267	7,300	7,343	7,331	7,316
	15. NOF (%)	76.0	76.4	0.0	84.0	87.0	87.3	87.0	88.2	88.9	85.0	79.9	81.4	83.2
	16. NPC (MW)	1,047	1,047	1,047	929	929	929	929	929	929	929	929	1,047	968
	17. ANOHR EQUATION	ANOI	R = NOF(-8.469) +	8,020								

TAMPA ELECTRIC COMPANY ESTIMATED PLANNED OUTAGE SCHEDULE GPIF UNITS JANUARY 2012 - DECEMBER 2012

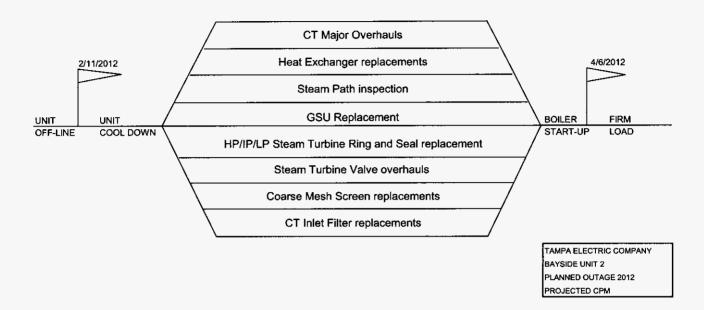
PLANT / UNIT	PLANNED OUTAGE DATES	OUTAGE DESCRIPTION
BIG BEND 1	Apr 08 - Apr 21 Dec 02 - Dec 08	Fuel System Cleanup and Scrubber work Fuel System Cleanup
BIG BEND 2	Apr 07 - Apr 20 Dec 03 - Dec 09	Fuel System Cleanup and Scrubber work Fuel System Cleanup
BIG BEND 3	Mar 11 - Mar 20 Sep 15 - Sep 28	Fuel System Cleanup Fuel System Cleanup and Scrubber work
BIG BEND 4	Feb 04 - Feb 13 Oct 20 - Nov 02	Fuel System Cleanup Fuel System Cleanup and Scrubber work
+ POLK 1	Apr 22 - May 26	Gasifier / CT Outage, HRSG Inspection, Air Separation Unit (ASU) Inspection and Gearbox Compressor Wheel Replacement, Gassifier Brick Replacement, CT Hot Gas Path Inspection, Fuel System Inspection, Aux System Inspection, GEHO Slurry Pump Repair
	Nov 11 - Nov 15	Gasifier Outage
BAYSIDE 1	Mar 01 - Mar 09 Oct 04 - Oct 12	Fuel System Cleanup Fuel System Cleanup
+ BAYSIDE 2	Feb 06 - Apr 06	Generator Stator and core iron replacement, Steam Path inspection, HP/IP/LP Steam Turbine Ring and Seal replacements, Steam Turbine Valve overhauls, Heat Exchanger replacements, Coarse Mesh Screen replacements, CT Major Overhauls and CT Inlet Filter replacements
	Nov 14 - Nov 23	Fuel System Cleanup

⁺ These units have CPM included. CPM for units with less than or equal to 4 weeks are not included.

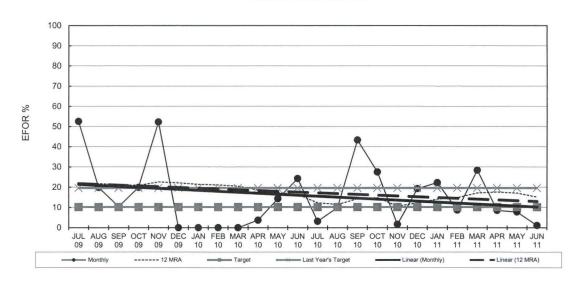
TAMPA ELECTRIC COMPANY CRITICAL PATH METHOD DIAGRAMS GPIF UNITS > FOUR WEEKS JANUARY 2012 - DECEMBER 2012

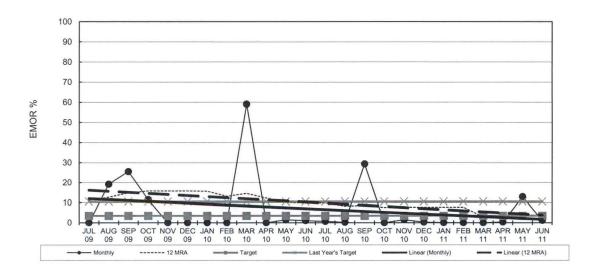


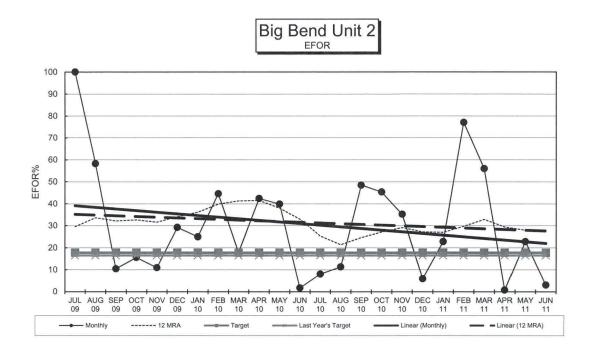
TAMPA ELECTRIC COMPANY CRITICAL PATH METHOD DIAGRAMS GPIF UNITS > FOUR WEEKS JANUARY 2012 - DECEMBER 2012

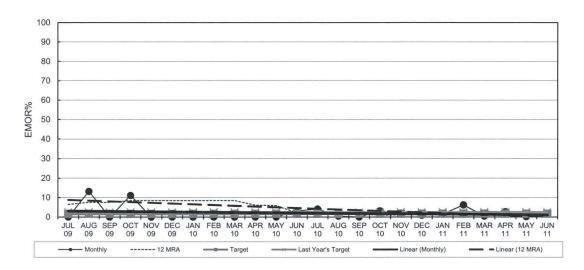




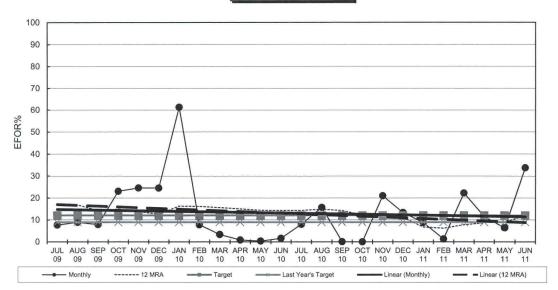


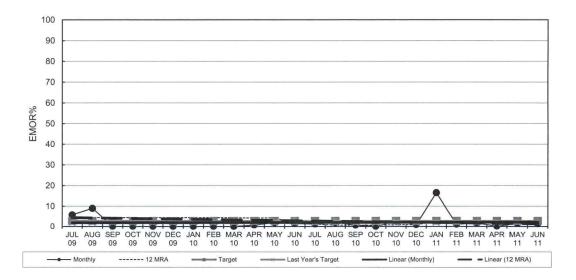




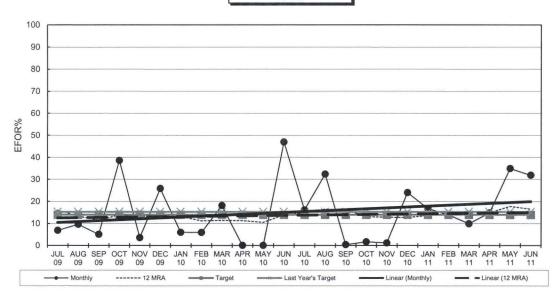


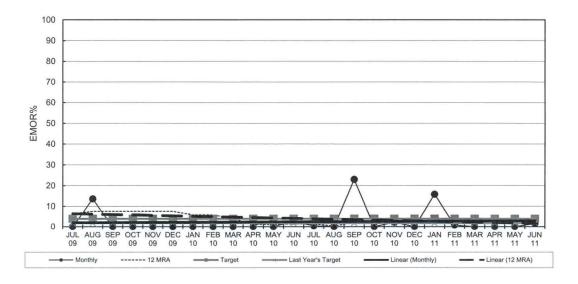




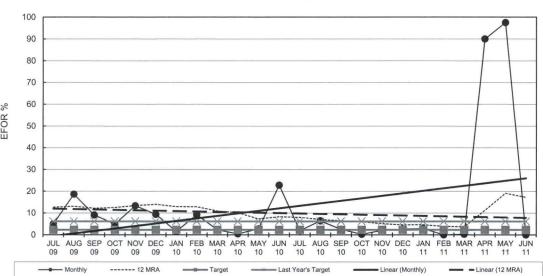




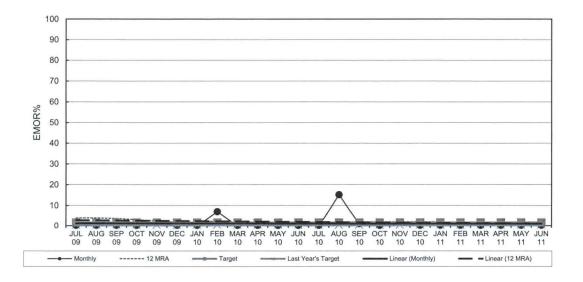




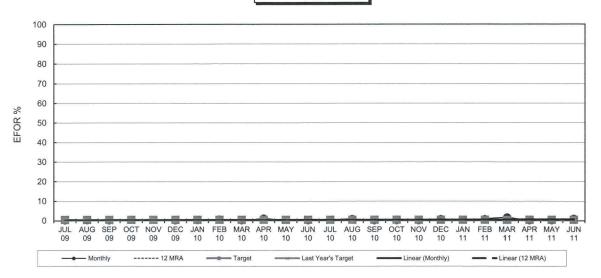




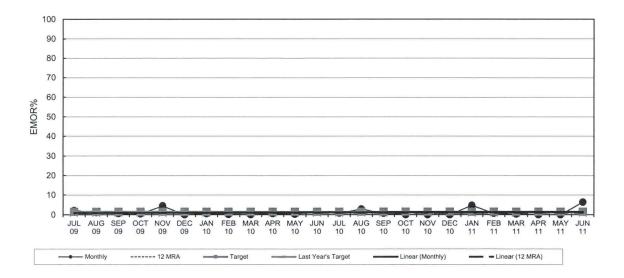
Polk Unit 1



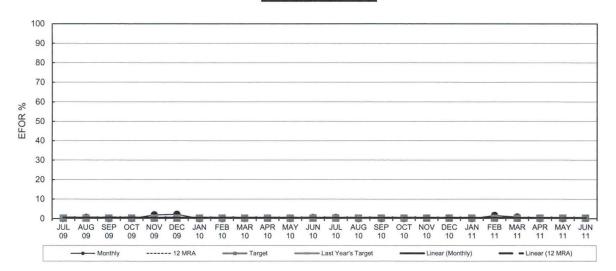




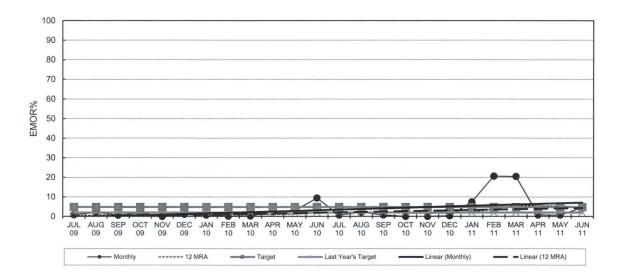
Bayside Unit 1



Bayside Unit 2

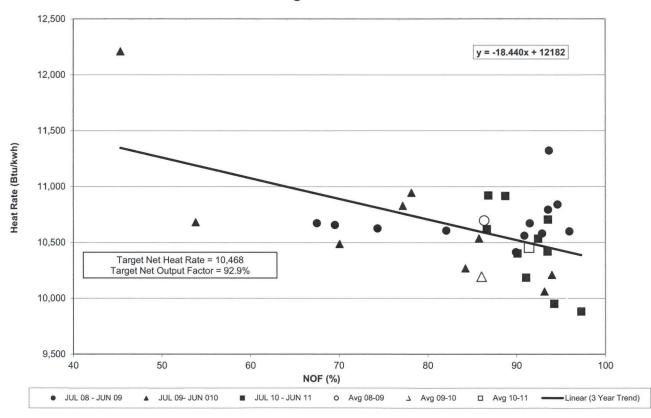


Bayside Unit 2

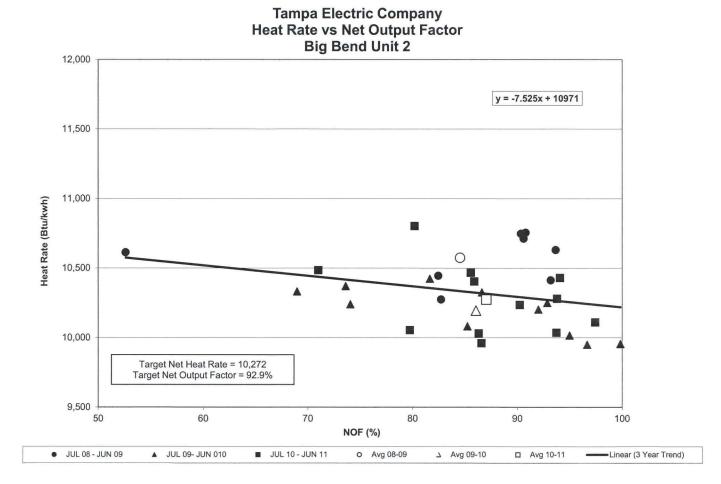


ORIGINAL SHEET NO. 8.401.12E PAGE 31 OF 40

Tampa Electric Company Heat Rate vs Net Output Factor Big Bend Unit 1

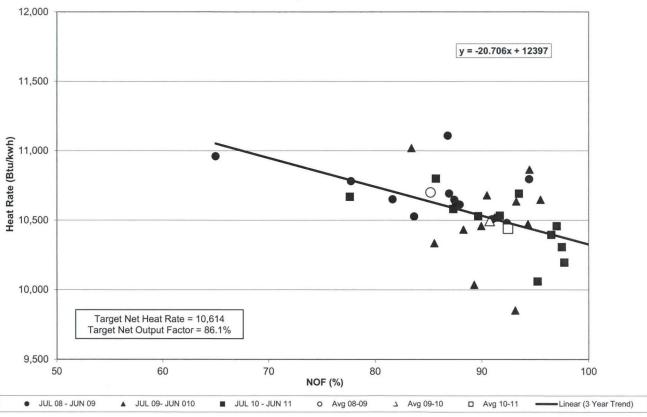






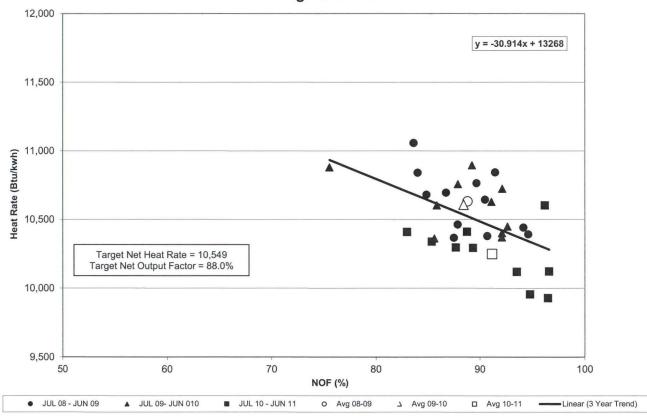
ORIGINAL SHEET NO. 8,401.12E PAGE 33 OF 40

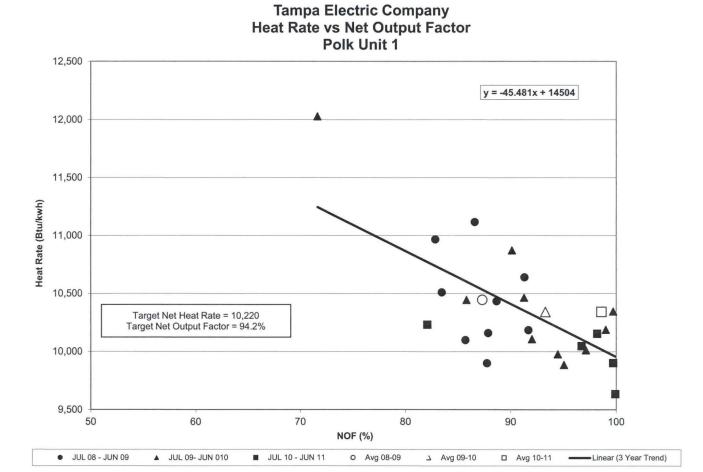




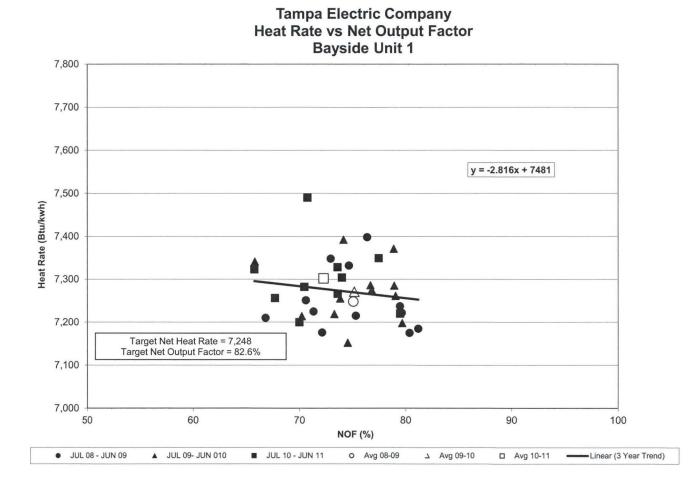
ORIGINAL SHEET NO. 8.401.12E PAGE 34 OF 40



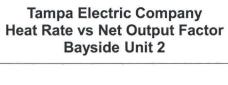


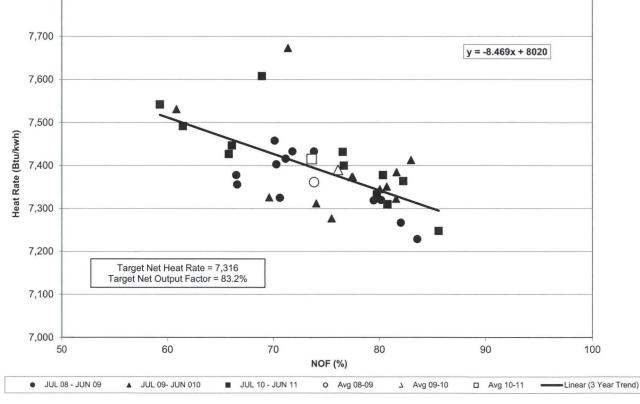






7,800





TAMPA ELECTRIC COMPANY GENERATING UNITS IN GPIF TABLE 4.2 JANUARY 2012 - DECEMBER 2012

PLANT / UNIT		ANNUAL GROSS MDC (MW)	ANNUAL NET NDC (MW)
BIG BEND 1		413	388
BIG BEND 2		413	388
BIG BEND 3		390	365
BIG BEND 4		453	420
POLK 1		290	220
BAYSIDE 1		740	731
BAYSIDE 2		979	968
	GPIF TOTAL	<u>3,680</u>	<u>3,482</u>
	SYSTEM TOTAL	4,624	4,417
	% OF SYSTEM TOTAL	79.6%	78.8%

TAMPA ELECTRIC COMPANY UNIT RATINGS JANUARY 2012 - DECEMBER 2012

PLANT / UNIT		ANNUAL GROSS MDC (MW)	ANNUAL NET NDC (MW)
BAYSIDE 1		740	731
BAYSIDE 2		979	968
BAYSIDE 3		59	58
BAYSIDE 4		59	58
BAYSIDE 5		59	58
BAYSIDE 6		59	58
	BAYSIDE TOTAL	<u>1,954</u>	<u>1,930</u>
BIG BEND 1		413	388
BIG BEND 2		413	388
BIG BEND 3		390	365
BIG BEND 4		453	420
	BIG BEND COAL TOTAL	<u>1.670</u>	<u>1,562</u>
BIG BEND CT4		59	58
	BIG BEND CT TOTAL	<u>59</u>	<u>58</u>
POLK 1		290	220
POLK 2		163	162
POLK 3		163	162
POLK 4		163	162
POLK 5		163	162
	POLK TOTAL	<u>941</u>	<u>867</u>
	SYSTEM TOTAL	4,624	4,417

TAMPA ELECTRIC COMPANY PERCENT GENERATION BY UNIT JANUARY 2012 - DECEMBER 2012

PLANT	UNIT	NET OUTPUT MWH	PERCENT OF PROJECTED OUTPUT	PERCENT CUMULATIVE PROJECTED OUTPUT
BAYSIDE	2	4,142,250	21.49%	21.49%
BAYSIDE	1	3,190,430	16.56%	38.05%
BIG BEND	1	2,682,450	13.92%	51.97%
BIG BEND	4	2,640,420	13.70%	65.67%
BIG BEND	2	2,541,330	13.19%	78.86%
BIG BEND	3	2,292,860	11.90%	90.76%
POLK	1	1,577,360	8.19%	98.94%
POLK	4	94,320	0.49%	99.43%
POLK	5	52,490	0.27%	99.70%
BAYSIDE	5	23,910	0.12%	99.83%
BAYSIDE	6	13,670	0.07%	99.90%
BAYSIDE	3	7,210	0.04%	99.94%
BAYSIDE	4	4,920	0.03%	99.96%
POLK	2	4,380	0.02%	99.98%
BIG BEND CT	4	2,070	0.01%	100.00%
POLK	3	870	0.00%	100.00%
TOTAL GENER	ATION	19,270,940	100.00%	-
GENERATION	BY COAL UNITS:11,734,420 MWH	GENERATION BY NA	TURAL GAS UNITS:	
% GENERATIO	N BY COAL UNIT! 60.89%	% GENERATION BY N	IATURAL GAS UNITS:	39.11%
GENERATION	BY OIL UNITS: MWH	GENERATION BY GPI	F UNITS:	19,067,100 MWH
% GENERATIO	N BY OIL UNITS:0.00%	% GENERATION BY G	SPIF UNITS:	98.94%

DOCKET NO. 110001-EI
GPIF 2012 PROJECTION FILING
EXHIBIT NO. (BSB-3)
DOCUMENT NO. 2

EXHIBIT TO THE TESTIMONY OF BRIAN S. BUCKLEY

DOCUMENT NO. 2

SUMMARY OF GPIF TARGETS

JANUARY 2012 - DECEMBER 2012

TAMPA ELECTRIC COMPANY SUMMARY OF GPIF TARGETS JANUARY 2012 - DECEMBER 2012

	Α	Net		
Unit	EAF	POF	EUOF	Heat Rate
Big Bend 1 ¹	81.9	5.7	12.4	10,468
Big Bend 2 ²	76.2	5.7	18.1	10,272
Big Bend 3 ³	80.0	6.6	13.5	10,614
Big Bend 4⁴	77.4	6.6	16.0	10,549
Polk 1 ⁵	85.5	10.9	3.6	10,220
Bayside 1 ⁶	94.8	3.8	1.4	7,248
Bayside 2 ⁷	80.0	17.2	2.8	7,316

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