BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 130040-EI

IN RE: TAMPA ELECTRIC COMPANY'S
PETITION FOR AN INCREASE IN BASE RATES
AND MISCELLANEOUS SERVICE CHARGES

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TAMPA ELECTRIC

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CLK 1

DIRECT TESTIMONY AND EXHIBIT

OF

MARK J. HORNICK

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

MARK J. HORNICK

Q. Please state your name, business address, occupation and employer.

A. My name is Mark J. Hornick. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") in the position of Director of Engineering and Project Management.

Q. Please provide a brief outline of your educational background and business experience.

A. I received a Bachelor of Science Degree in Mechanical Engineering in 1981 from the University of South Florida. I am a registered professional engineer in the state of Florida. I began my career with Tampa Electric in 1981 as an Engineer Associate in the Production Department. I have held a number of engineering and management positions at Tampa Electric's power generating stations. From 1991 to 1998, I was a manager at Big Bend Power Station with various responsibilities including serving as Manager of Operations from 1995 to 1998. In July 1998, I was promoted to Director - Fuels where I was responsible for managing Tampa Electric's fuel procurement and transportation activities.

In March 2000, I transferred to General Manager - Polk and Phillips Power Stations, where I was responsible for the overall operation of these two generating facilities. I have broad experience in the engineering and operation of power generation equipment using oil, natural gas, coal and other solid fuels and technologies including conventional steam cycle, combustion turbine in simple cycle and combined cycle as well as integrated gasification combined cycle ("IGCC"). I am a past Chairman of the Gasifier Users Association, an international group of users and potential users of gasification technology.

In my current role as Director of Engineering and Project Management, I am responsible for centralized engineering support for all operating power stations and for the management of large Energy Supply capital projects including new generating units.

Q. Have you previously testified before the Florida Public Service Commission ("FPSC" or "Commission")?

A. Yes. I have previously testified before this Commission in Docket No. 080317-EI related to the company's previous base rate proceeding, in Docket No. 110262-EI for the Big Bend gypsum storage facility and more recently in Docket No. 120234-EI associated with the Polk 2-5 Combined Cycle Conversion project.

PURPOSE AND BACKGROUND

Q. What is the purpose of your direct testimony?

A. My direct testimony supports the company's budgeted construction capital and operation and maintenance ("O&M") expenses related to generation facilities included in the 2014 test year and the company's generation expansion plan. I show that the amounts budgeted for these items are reasonable and prudent. My direct testimony discusses the capital expenditures that are needed for generation expansion and continued operations of the company's generating system. I describe various major capital projects the company has completed or will be completing by 2014 to improve operational performance for the benefit of customers and to support compliance in safety, environmental, cyber security and reliability requirements. I also describe the incremental O&M activities budgeted for 2014 and why those incremental activities are required. I also discuss the recurring or base O&M activities and resources needed for continued operations of the company's generating assets. Finally, my direct testimony discusses the favorable variance between the O&M benchmark and the test year for production.

Q. Have you prepared an exhibit for presentation in this proceeding?

A. Yes, Exhibit No. _____ (MJH-1) entitled "Exhibit of Mark J. Hornick" was prepared under my direction and supervision. It consists of the following six documents:

Document No. 1	List Of Minimum Filing Requirement Schedules Sponsored Or Co-Sponsored By Mark J. Hornick
Document No. 2	Energy Supply Capital $3+ Million Projects (Through 2014)
Document No. 3	Energy Supply 2007-2014 Capital Expenditures Excluding AFUDC
Document No. 4	Energy Supply 2007-2014 O&M Net of

ECRC Recovery

Document No. 5 Total System Equivalent Availability Factor

Document No. 6 Total System Heat Rate

Q. Please provide a brief overview of Tampa Electric's generating unit portfolio.

A. Tampa Electric maintains a diverse portfolio of electric generating facilities to safely provide reliable, cost-effective electric power for its customers in an environmentally sensitive manner. The portfolio consists of 16 generating units with a total capacity of approximately 4,700 MW (winter) at three major sites within the company's service territory. The electric generating units include fossil steam units, combined cycle units, combustion turbine peaking units, an IGCC unit and internal combustion diesel units.

Fuel diversity is important for supply reliability and price stability. Tampa Electric's generating system has roughly 1,800 MW of coal-fired capacity and 2,900 MW of natural-gas fired capacity. In addition, the company can use distillate oil as a back-up fuel in 670 MW of the above capacity. The environmental performance of the fleet is very good with significant emission reduction technologies in place at each generating site.

Q. Describe Tampa Electric's business and operating plan for the electric generating assets.

A. Tampa Electric's first responsibility is for the safety of its team members (employees), other personnel working or visiting at company facilities and the local communities where the company operates the assets. Safety management involves numerous proactive and corrective activities and programs that include all levels of the organization. Tampa Electric has a strong safety culture and an outstanding record of continuous improvement in safe operations, and has established company records for near miss reports and achieving the company's lowest recordable injuries (incident rate) in 2012.

Adherence and compliance with all environmental, contractual and other regulatory requirements is uncompromised, while multiple options are considered and the best one selected based on cost-effectiveness. Beyond compliance, the company identifies opportunities and implements solutions to prudently reduce the environmental impact of generating unit operation by recycling combustion byproducts whenever possible, minimizing fresh water use and maximizing the use of recycled water, selecting low emissions technology and employing emission control technologies when needed. Tampa Electric has implemented initiatives that has enabled it to become one of the cleanest coal-fired electric generating utilities in the nation.

Generating units are long-term investments, typically operating for many decades. The company believes that maintaining a diverse mix of both fuel types and generating technologies mitigates long-term operational and economic risks and is in the best interest of its customers.

Being efficient and cost-effective in producing electric power is important to customers and to the company. The Energy Supply area manages its capital and O&M spending to achieve appropriate levels of generating system reliability and efficiency over the long term.

Q. Please describe some of the challenges currently facing generating utilities and how Tampa Electric has, and is, addressing those challenges.

A. The operation of electric generating units is a highly regulated activity. Environmental, safety, reliability and security regulations are continually changing and may negatively impact operational performance and increase the cost to operate the generating system. Utilities must not only comply with regulations as they are enacted, but also analyze what changes may occur in the future. Environmental regulations, in particular, can have a significant impact on the cost profile and the long-term viability of generating units.

While changing environmental regulations are challenging to predict, forecasting the long-term availability and price of the fuels used to produce electricity is perhaps even more challenging. Fuel cost is the largest operating expense in power generation and often comprises over half of total production cost. Coal and natural gas are the primary fuels used by Tampa Electric for power generation, and they account for approximately 70 percent of United States electricity production. The percentage of gas and coal-fired generation is even higher in Florida. Coal is widely available in the U.S., and prices have historically been stable. In the last decade, coal has become increasingly a global commodity, so coal prices are affected by worldwide demand. Natural gas remains, for the time being, mostly a regional market; and the significant driver for pricing has been the increased use of hydraulic fracturing, which has increased gas supply in the United States and reduced natural gas pricing.

Given the backdrop of increasing environmental regulations and changes in the relative pricing and power generation efficiency between coal and natural gas, many utilities are now facing the choice of either retrofitting existing coal-fired units with additional emission controls or retiring them and replacing the capacity with new, primarily natural-gas fired units. Utilities across the nation are now announcing plans to shut down older, less efficient coal-fired units and retrofit the newer units with emission controls.

Tampa Electric has already addressed these issues and has positioned its generating fleet to be successful in a wide range of future scenarios. In the mid-1990s the company added Polk Unit 1, which is a state-of-the-art IGCC coal-fueled unit with world-class environmental and operational performance. Approximately fifteen years ago, the company embarked on a $1.2 billion environmental improvement plan which involved a decision to replace the older, less efficient coal-fired units at Gannon Power Station with new gas-fired combined cycle units that were integrated with the existing generating assets at the renamed H.L. Culbreath Bayside Power Station ("Bayside Power Station"), as well as completing environmental control retrofits on the newer, more efficient coal-fired units at Big Bend Power Station.

The result of these efforts has been the transformation of the company's generating portfolio (on a capacity basis) from over 95 percent coal-fired, with dated emission control technologies, to a fleet that is now approximately 60 percent natural gas and 40 percent coal with up-to-date emission controls. The air emissions from the generating fleet has been dramatically and significantly reduced for sulfur and nitrogen oxides ("NO_X"), carbon dioxide ("CO_2") and mercury. The company's generating portfolio is well positioned to meet the challenges of increasing environmental regulations and fuel price variations.

Q. What are Tampa Electric's operational goals and objectives in the Energy Supply area?

A. Energy Supply maintains a balanced approach to operations that includes a focus on safety, availability and reliability of the generating units, expenditure control for O&M and capital, continuous improvement activities as well as community involvement and environmental stewardship. The company establishes departmental goals to help focus team members' efforts on activities that support these objectives.

Q. How have these goals and objectives changed since the company's last rate case proceeding?

A. The basic goals and objectives for Energy Supply have not changed significantly. There has been a focus on controlling O&M expenses, particularly since 2009, as a result of revenue and load shortfalls that are discussed in the direct testimony of Tampa Electric witnesses Gordon L. Gillette and Lorraine L. Cifuentes. Expense spending budgets have been held essentially flat, which has required the company to offset increases in labor, materials and other costs with reduced spending and efficiency measures across the company.

Q. Is it reasonable to continue to hold overall Energy Supply expense spending flat in the face of continuing increases in labor, materials and other costs?

A. No. Energy Supply must increase its O&M spending levels to a more sustainable level in order to maintain the reliability, and cost-effectiveness of the generating system. The company has maintained a strong focus on efficient spending and continuous improvement. There are no unnecessary activities or contingencies in the spending plans and authorizations. Holding total spending flat has resulted in deferral or elimination of needed activities. While overall the operational performance of the generating units have improved since the last base rate proceeding, there is an indication of a slight degradation in unit availability and heat rates, which can be attributed to the recent and current flat spending levels. If the company continues to hold expense levels flat, performance of the generating units will continue to decline resulting in higher long-term production costs and erosion of generating system reliability. This would lead to the acceleration of new generating plant construction or additional purchased power.

Q. Please provide some examples of O&M spending reductions and any negative impacts that have resulted or will result.

A. Spending reductions have been broadly applied across the Energy Supply area. Allowable spending targets were established for each area based in large part on a weighing of previous annual spending levels. The spending targets were also impacted by prior or planned capital improvements, and expected impact of environmental and other regulatory requirements. Each location is responsible for allocating available resources according to need. In most situations, safety, compliance and fixing known problems takes priority over inspecting for incipient failures or improving operational performance. If this continues, unforeseen problems may develop, resulting in more costly corrective maintenance from forced or unplanned outages that have a greater impact on generating system availability than planned or preventive maintenance.

At Big Bend Power Station, full-time operating, maintenance and staff positions have been reduced through attrition. Contractor staffing has also been reduced to lower operating costs. With fewer resources, lower priority work (preventive maintenance, operational performance improvements) is being deferred or eliminated. This lower priority work includes: corrosion coatings, structural steel maintenance, piping inspections and valve maintenance. Planned outage O&M spending has been reduced by scope reductions. In particular, the scope of Big Bend Unit 3 planned outages scope was limited from 2009 to 2012 resulting in the deferment of boiler component maintenance. Unit performance, availability and heat rate, did degrade slightly, and needed repairs are being made in 2013. Major equipment inspections on other generating units have been deferred during recent unit outages to reduce costs. Deferred inspections included boiler feed pump turbine inspections, high energy piping inspections and boiler mapping. This increases the risk of future breakdown maintenance which reduces availability and increases costs.

At Bayside Power Station, O&M spending reductions resulted in deferral of planned maintenance of corrosion control coatings on heat recovery steam generators ("HRSG"), combustion turbine ("CT") compartments and air inlet structures. In 2012, the company reduced the scope of work for the Bayside Unit 2 major outage.

At Polk Power Station, O&M spending reductions resulted in the deferral of planned maintenance of corrosion control coatings throughout the facility. In addition, the company reduced the amount of inspection work during outages.

The cost-saving measures described above were taken to deal with an uncertain economy and lower than expected revenues and load. Regular inspections and preventive maintenance must be conducted on generating unit equipment to maintain acceptable operating performance. The proposed test year generation O&M expenses will allow the company to increase the current levels of inspection and maintenance in order to operate the generating fleet in a more cost-effective and sustainable manner.

CHANGES TO GENERATING SYSTEM

Q. Please describe the changes to the Tampa Electric generating system since the company's last base rate case proceeding in 2008.

A. There have been several changes to the Tampa Electric generating system since 2008.

The five aero-derivative CT peaking units that were placed in-service during 2009 have been in operation for nearly four years. These units have been used to meet the peak demands of the company's customers and as economic generating resources particularly valued for their quick start capability. O&M costs for these units are now part of the Energy Supply ongoing expense budget. The O&M expenses for the aero-derivative CTs are forecasted to be over $1.2 million in 2014.

The Big Bend rail system that was placed in-service December 2009 has been performing as intended. Solid fuel deliveries are split between barge and rail transport, which provides greater system reliability and access to more coal source locations and stimulates competitive pricing among transportation service providers. These fuel savings, as well as improved reliability associated with bi-modal transportation, will continue to benefit customers over the life of the facility. The final cost for the rail facility was $59.4 million compared to the $46 million included in the company's original forecast for the construction costs associated with the rail facilities and in the rate base during the last base rate proceeding. The incremental O&M costs associated with the rail facility is approximately $300,000 per year.

The selective catalytic reduction ("SCR") additions were completed on Big Bend Unit 2 in September 2009 and Big

Bend Unit 1 in April 2010. The SCR additions were part of a 10-year, $1.2 billion environmental improvement plan signed in 1999 with the United States Environmental Protection Agency. The SCRs are performing as expected, and NO_x emissions have been reduced by 94 percent compared to 1998 levels.

The small generating units at the Phillips Station in Sebring (36 MW) and the City of Tampa Wastewater Treatment Plant, Partnership Station (6 MW) have been placed into long term reserve steady status. These units are not currently cost effective to operate due to their higher fuel cost relative to other units.

CONSTRUCTION PROGRAM AND CAPITAL BUDGET

Q. How does Tampa Electric determine the construction program and capital budget for additional generation facilities?

A. Tampa Electric uses an Integrated Resource Planning ("IRP") process. The IRP process determines the timing, type and amount of additional resources required to maintain system reliability in a cost-effective manner. The process considers expected growth in customer demand, existing and future demand-side management

("DSM"), and renewable or supply-side resources needed to meet reliability requirements.

Q. Please describe the criteria that Tampa Electric uses in its IRP process to determine both the minimum amount and timing of additional resources required to maintain system reliability.

A. Tampa Electric uses a 20 percent firm reserve margin reliability criteria above the system firm peak, as required by the Commission in Order No. PSC-99-2507-S-EU, issued on December 22, 1999, and a minimum 7 percent supply reserve margin. The firm reserve margin consists of both supply and non-firm (customer) demand resources to maintain an allowance for unexpected variances in system demand, generating unit availability, purchased power availability, and deliverability. The minimum supply reserve margin criterion maintains an important qualitative component of firm reserves for reliability purposes to minimize the impact of the loss of supply resource at the time of peak. If the firm reserve margin consisted of only non-firm demand reserves (whereby total firm supply equals total load), then the frequency of use of these non-firm demand resources in a given year would increase significantly. The firm system peak is determined by including all firm wholesale agreements and excluding non-firm customer demand from the total system demand. Non-firm demand includes all interruptible service customers and customer load reduction programs. Customers who continue to participate in these voluntary programs help defer the need for additional supply resources by reducing firm peak demands. These customers may request to become a firm customer or be excluded from a DSM program with appropriate notification.

Q. How does the company plan and manage its generation and other major capital improvement expansion projects?

A. The company utilizes long-range planning tools to determine its future capital projects and generating plant additions. In very simple terms, once a need for future generating capacity is identified, a project team is assigned to begin project evaluations. The priorities in the evaluation process include the need to determine feasible alternatives, costs, schedules and execution plans for the project. After a specific project is identified as being the most cost-effective alternative, it must be approved by the company's management and board of directors. Most generating plant additions are reviewed by the Commission and other regulatory agencies. Once regulatory approval is granted, the project team executes the project to design the plant, obtain permits, procure the equipment, construct, start-up and commission the plant until it achieves commercial operation. Throughout this process, the company manages the project to meet costs, schedule and performance goals.

Another phase of long range planning is the development of a five-year construction budget, which identifies other near term projects necessary to achieve or maintain safety and environmental compliance, while managing fuel and purchased power. The capital projects in the five-year plan include maintenance projects to replace and modify existing plant equipment in order to achieve or maintain compliance and/or improve the generating system reliability, capacity or efficiency.

The company modifies the business plan as new information is obtained. Each year the company determines the capital plan for the following fiscal year period. Information regarding generating unit availability, operating conditions, new regulations and environmental needs are reviewed and considered for inclusion in the capital plan. Some projects are required because of environmental or safety considerations or new regulations. Other projects are prioritized based upon their relative benefits. Through a review process, the projects are selected for inclusion in the next year's budget. Similarly to how new generation projects are managed, these projects are also initiated and executed by a project team. Each project goes through an estimating and approval process to ensure its benefit and need. These projects are monitored for cost, schedule and desired performance throughout the process until they are completed and in-service.

Q. What are Tampa Electric's major generation construction requirements through 2014?

A. The company's forecasted capital additions and retirements are listed in MFR Schedule B-11. Tampa Electric's 2013 Ten-Year Site Plan indicates the need for additional capacity in 2017. This need will be met by the conversion of four simple cycle CTs at the Polk Power Station into a combined cycle system by the addition of four HRSGs and a single steam turbine. The project has numerous benefits including the capture of waste heat from the existing combustion turbine for production of electricity with no additional fuel consumption, supplemental HRSG duct firing for additional peaking capacity, significant reduction in unit emission rates, additional dual fuel capacity, use of recycled versus fresh water and the capability to add solar thermal energy to the process. The Commission approved the need for this project in Order No. PSC-13-0014-FOF-EI, issued on January 8, 2013, and the unit is planned to be placed into commercial operation by January 1, 2017.

The project is proceeding on schedule and on budget. Engineering and procurement activities are underway with contracts signed for the supply of the steam turbine and detailed engineering efforts. The contract for supply of the HRSGs is nearing completion. Construction at the site is scheduled to begin in early 2014. The construction costs of the Polk 2-5 Combined Cycle Conversion will be capitalized in construction work in progress, will accrue allowance for funds used during construction ("AFUDC") and will not be included in rate base for the 2014 test year. Tampa Electric witness Jeffrey S. Chronister explains the accounting and ratemaking treatment of the Polk 2-5 Combined Cycle

Conversion Project in his direct testimony.

Q. What other major generation-related capital projects were, or will be, placed in-service between 2010 and 2014?

A. There are a number of major projects including the following items:

The Polk Power Station Reclaim Water Project - This activity began in 2009, and Phase I will be completed in the first quarter of 2014. The project provides for the supply, treatment and use of recycled wastewater from the City of Lakeland (and in Phase II from both the City of Mulberry and Polk County) at Polk Power Station. This project is needed to maintain acceptable reservoir quality for the continued use of the existing cooling reservoir and to provide the additional cooling water needed for future generating units at the site.

Phase I of this project (City of Lakeland) is expected to cost $106.9 million. The Southwest Florida Water Management District is co-funding this effort with $35.3 million. The net cost to the company will be $71.6 million. Phase 1 is comprised of three major units of property: pipeline, treatment system and disposal wells.

The disposal wells are essentially complete and are expected to be placed in-service in the third quarter of 2013 at a net cost of $21.6 million. The pipeline is expected to be completed and placed in-service in December 2013 at a net cost of $17.7 million. The treatment system is expected to be completed and placed in-service in the first quarter of 2014 at a net cost of $32.3 million. The O&M expenses associated with this new activity are estimated to be $3.0 million per year.

Completion of the Big Bend Solid Fuel Handling System project - This project started in 2007 and will be complete in 2014. The Big Bend solid fuel handling system has been in-service since 1970. The system includes all of the equipment to receive solid fuel by water, rail or truck; blend various fuels to meet operational and environmental requirements; convey the fuel to storage piles; reclaim the fuel from storage piles and convey it to plant operations for further processing. In 2007 and 2008, the company completed a set of comprehensive studies which determined that much of the equipment had reached the end of its useful life and that significant equipment and structural failures were likely in the near future. Rather than incur equipment downtime and rapidly escalating maintenance expenses, the company determined that numerous components for the system required replacement or refurbishment to ensure that the solid fuel handling system would be viable for at least an additional 20 years. Thirty separate components of the system were identified and the maintenance work has been ongoing since 2011. The system must continue to operate to support plant operation during this project which requires prudent scheduling and sequence of project activities. Units of property are being placed in-service as the work is completed, and the total cost of this project is expected to be $62.1 million.

Completion of the Big Bend Flue Gas Desulfurization ("FGD") reliability and gypsum storage program - This program was necessary to ensure that the FGD system will continue to operate in a reliable fashion and maintain compliance with environmental regulations for the four coal units at Big Bend Power Station. The FGD reliability activities are expected to be completed in 2014 at a total cost of $59.2 million. This program also included the addition of a second gypsum storage area that was needed to effectively manage the production, quality and storage of high grade gypsum. This gypsum is marketed and sold for beneficial reuse to create products such as wallboard or cement or for use in agricultural applications. The company elected to modify the gypsum storage area project scope after several discussions with the FPSC in 2011 and 2012. This project is expected to be completed in 2014 at a cost of $21.7 million. The majority of cost of these projects are included in the Environmental Cost Recovery Clause and are not included as part of this base rate request.

Completion of system wide Arc Flash Hazard Mitigation projects - The National Fire Protection Association standard NFPA-70E defines safety regulations involving the analysis and management of the energy that could be released from electrical equipment experiencing a fault. Tampa Electric undertook a comprehensive study of all power plant electrical equipment operating at 480 volts and above. The study indicated many instances of potential arc flash energy risks. A series of projects have been completed at each power station which implemented cost-effective solutions to provide adequate safety for personnel working in proximity to electrical equipment. The last of these projects will be completed in 2014 at a total program cost of about $20 million.

Replacement of capital units of property (recurring capital maintenance) - There are a number of projects involving the replacement of generating equipment components (units of property) that have reached the end of their useful lives. Generating units that are properly maintained can operate as long as sixty-five years. Specific equipment such as foundations, structural steel, piping and wiring can function effectively for the operating life of the unit with proper maintenance. Other plant equipment has shorter life cycles due to corrosion, erosion, metal fatigue and other wear mechanisms. In many cases, it is more cost-effective to replace a piece of equipment in its entirety than repair it in place. There are numerous recurring capital projects that have been completed, or will be completed, between 2009 and 2014. Examples of these projects include boiler tubing replacements (superheaters, reheaters and waterwalls), pump and fan replacements, feedwater heater replacements, generator rewinds, precipitator upgrades and others. Many large units of property only require replacement after 20 or 30 years of service. Several of these have been, or will be replaced, between 2010 and 2014. A listing of representative capital projects which exceed $3 million is shown on Document No. 2 of my exhibit.

Q. What is Tampa Electric's construction capital budget for Energy Supply in 2014?

A. As shown in Document No. 3 of my exhibit, the construction capital budget for the Energy Supply department totals $391.7 million for 2014. This total is comprised of $192.2 million for recurring, non-expansion projects and $199.5 million for non-recurring, expansion projects. The latter component includes $147.8 million for the Polk 2-5 Combined Cycle Conversion in 2014. The accounting and ratemaking treatment of the Polk 2-5 Combined Cycle Conversion Project is described in the direct testimony of witness Chronister.

PRODUCTION O&M EXPENSES

Q. What are Tampa Electric's production O&M and non-recoverable fuel expenses budgeted for 2014 and how has the amount varied over time?

A. Document No. 4 of my exhibit shows the Tampa Electric Energy Supply department expenses (excluding all costs recovered from various cost recovery clauses) from 2007 to 2014. The budgeted amount in 2014 is $137.3 million.

Q. How do these spending levels compare with what would be expected using the Consumer Price Index for Urban Consumers ("CPI-U") escalation factors using 2007 as a benchmark?

A. Document No. 4 of my exhibit shows that the actual expenses have generally been below what would be expected using the CPI-U as a cost escalator. This is the measure used by the Commission to benchmark O&M expenses for production plant. The cost control measures implemented in 2010 through 2012 resulted in spending being held below the levels expected with inflation. Budgeted expenses in the 2014 test year are over $4 million less than the 2007 benchmark with escalation.

Q. How does the adjusted 2014 test year total production O&M costs per company books compare with the Commission O&M benchmark?

A. As described in witness Chronister' s direct testimony, the company's adjusted 2014 total production O&M costs are expected to be under the benchmark by $6.8 million. Specifically, the adjusted test year total production O&M per company books in 2014 is $136,006,000. The adjusted test year total production O&M benchmark in 2014 is $142,809,000. The production O&M benchmark calculation is shown in MFR Schedule C-37.

Q. How has the company managed to stay below the O&M benchmark for 2014 production expenses?

A. Tampa Electric has focused on managing costs and ensuring that O&M dollars were spent in a prudent fashion. The cost management measures implemented since the last base rate proceeding were a prudent response to revenue shortfalls. That level of spending, however, is not sustainable for the long term. Beyond the imposition of reduced spending budgets, the company has, and is, focused on continuous improvement, innovation and finding ways to operate more efficiently and at lower costs.

There are numerous examples of improvement projects and activities that have been implemented throughout Energy Supply. At Big Bend Power Station, team members completed 62 projects in 2012 alone that totaled almost $1 million in savings or avoided cost increases. Many of these initiatives in 2012 and in prior years have produced savings that extend beyond the year of implementation and have a cumulative effect. Similar efforts at Bayside and Polk Power Stations in 2012 totaled nearly another $1 million in savings or avoided cost increases. The culture of continuous improvement across all Energy Supply areas is a major reason the company has been able to hold O&M spending below benchmark levels.

Q. What are the major factors that have contributed to an increase in total O&M spending needed to maintain Tampa Electric's fleet of generating units?

A. The company's continuous improvement efforts have been significant; however, the total cost for O&M activities has increased. There are three major factors that necessitate an increase in O&M expenses.

The first factor is the inflationary pressure on the costs of labor, materials and services needed to run the business. Although inflation has slowed, it still exists, and this creates upward pressure on costs. From the 2007 historical base year to the 2014 test year, the CPI-U shows an expected increase of 16.07 percent, or approximately 2.3 percent per year.

The second major factor for increasing O&M costs is aging equipment. As mechanical and electrical equipment ages and is used to produce electricity, it generally requires an increasing amount of maintenance to perform satisfactorily. This effect can be minimized by good operation and maintenance practices, but it cannot be totally eliminated.

The third major factor for increasing O&M costs is new regulatory requirements. The business of power production is highly regulated, and new requirements continue to be imposed. Since the 2007 historical base year, requirements have been added in the areas of personnel safety, physical security, cyber security, system reliability, water use and others. Compliance with these regulations inevitably takes resources and increases costs. The company endeavors to comply with new regulations in the most prudent and cost-effective ways, but compliance is mandatory.

Q. Please define planned outages versus other types of outages.

A. Planned outages, as the name suggests, are defined as those outage periods that are anticipated and planned for well in advance of the actual outage period, typically at least one year in advance. Forced outages, on the other hand, are not planned for or scheduled and can be the result of an in-service failure or imminent failure of some generating unit component. In addition, forced outages are typically short in duration and have greatly reduced scope-of-work versus planned outages. Maintenance conducted during planned outages consists of large tasks that are performed infrequently and have a long duration. Typical examples are steam turbine inspections and repairs, replacement of large heat transfer surfaces in the boiler and refurbishment of large motors and pumps. The maintenance performed during these outages is required to ensure the safe and reliable operation of the generating units.

Q. What is the impact of planned outages on Tampa Electric's generating units in the 2014 test year?

A. The 2014 planned unit maintenance durations are shown for each unit in MFR Schedule F-8, page 11 of 24. There are 16 generating units with planned maintenance outages scheduled in 2014. A total of 62.7 planned outage weeks is scheduled across the system. The planned outage schedule varies from year to year based on the maintenance requirements of each generating unit and the need for adequate generating capacity in service to reliably meet demand throughout the year. The planned maintenance for 2014 is typical of the past and expected future planned outage requirements, with one exception. The company is in the process of engineering and procurement activities for the four HRSGs and one steam turbine that will convert Polk Units 2-5 from simple cycle to combined cycle operation. In 2014, the project schedule requires an outage on each of these units to modify the exhaust stacks to enable the subsequent construction of the HRSGs without interfering with the operation of these units. The work performed during these outages is primarily associated with the Polk 2-5 conversion capital project and will be accounted for as such. No costs related to the Polk 2-5 Conversion project are included in the test year expenses sought in this rate request.

After accounting for the 22 weeks of outages associated with the Polk 2-5 Conversion project, the planned outage schedule for 2014 has a total of 40.7 outage weeks across the system, which is typical of past and future planned outage needs.

Q. What has been the reliability of Tampa Electric's generating units over time?

A. The overall generating unit equivalent availability factor ("EAF") has been approximately 81 to 83 percent since 2007. This overall system availability represents the combination of newer, highly reliable combustion turbines and older coal fired units. Continued capital expenditures and O&M spending are needed to maintain unit availability and, in particular, the availability of the coal-fired units. Reductions in O&M spending levels in 2010, 2011 and 2012 have begun to adversely affect unit availability. Maintenance efforts taking place in 2013 and planned for 2014 and beyond are intended to maintain availability at acceptable levels. The company has continued to replace capital units of property, when economically justified, in order to maintain availability without excessive O&M spending. Document No. 5 of my exhibit shows the total system EAF from 2007 to 2012.

Q. What has been the thermal efficiency of Tampa Electric's generating units over time?

A. The heat rate of Tampa Electric's units has ranged from approximately 9,100 Btu/kWh to approximately 9,350 Btu/kWh from 2007 to 2012. Document No. 6 of my exhibit shows the total system heat rate from 2007 to 2012. This trend shows efficiency degrading somewhat in the last two years. Continued capital expenditures and increased O&M activities in 2013 and beyond are intended to maintain unit heat rates at acceptable levels.

Q. Has Tampa Electric taken other measures to control generation O&M costs while maintaining a safe and productive workplace?

A. Yes. Tampa Electric has taken a number of steps to ensure that its team members are safe, productive and focused on the right priorities while managing costs. Some of the key measures are in the areas of safety, staffing and productivity, and operating goals and priorities.

Tampa Electric emphasizes safety over all other considerations. The company has several programs that deal with hazard elimination and personal safety behavior improvement. The company investigates safety incidents and near miss events to determine root causes and appropriate corrective actions. The company observes team members while performing tasks to reinforce positive safety behaviors and coach them on opportunities to improve. These efforts have reduced the Energy Supply area Occupational Safety and Health Administration recordable injury rates, which represent the annual number of recordable incidents per 100 employees, from 1.2 in 2009 to 0.6 in 2012, which is an outstanding accomplishment.

Front-line craftsmen are trained and encouraged to perform tasks outside of traditional boundaries in a safe manner. In cooperation with the collective bargaining unit at the Big Bend and Bayside Power Stations, team members now perform maintenance and operation tasks as needs dictate without barriers from prior strict work rules. A pay-for-skills system encourages team members to learn and apply key skills in addition to their primary maintenance craft at the Polk Power Station. For example, a team member who has a core skill in mechanical maintenance may learn certain skills traditionally limited to electricians. When a task involves both mechanical and electrical work elements, one team member is able to complete the work, which improves overall workforce efficiency and productivity and allows for reduced staffing levels.

Tampa Electric ensures team members' priorities are aligned with business goals by setting business goals at the company level, which are in turn supported by goals at the department and business unit level. Team members can receive incentive pay through the company's Performance Sharing Program if certain goals are met. Progress on goal achievement is regularly reviewed with team members. All of these actions have contributed to the company's ability to control costs while still providing reliable service to customers.

SUMMARY

Q. Please summarize your direct testimony.

A. Tampa Electric maintains a diverse portfolio of generating units to reliably meet the needs of its customers in an efficient and cost-effective manner. The diversity of fuels and generating unit configurations used increases system reliability and mitigates price risk for customers. The performance of the company's units has been very good, although recent reductions in spending levels have begun to result in some performance degradation.

The production capital construction and O&M expenses projected for 2014 are reasonable, prudent and below the Commission O&M benchmark. The budgets include expenditures that will improve heat rate, reduce full and partial forced outages and help ensure the availability of clean, reasonably priced energy for customers.

Q. Does this conclude your direct testimony?

A. Yes, it does.

EXHIBIT

OF

MARK J. HORNICK

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LIST OF MINIMUM FILING REQUIREMENT SCHEDULES

SPONSORED OR CO-SPONSORED BY MARK J. HORNICK

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B-13	Construction Work In Progress
C-8	Detail Of Changes In Expenses
C-9	Five-Year Analysis - Change In Cost
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C-37	O&M Benchmark Comparison By Function
C-39	Benchmark Year Recoverable O&M Expenses By Function
C-41	O&M Benchmark Variance By Function
F-8	Assumptions

Energy Supply Capital $3+ Million Projects (Through 2014)

FP Description	2009 Actuals	2010 Actuals	2011 Actuals	2012 Actuals	2013 Budget	2014 Budget	Total 09-14
Bayside & Big Bend Aero's	83,282,047	610,622					83,892,670
Bayside CSA's	23,140,748	20,989,311	13,511,596	13,837,440	15,664,626	17,316,451	104,460,173
BPS2 GE Compressor, Option 3			7,948,726				7,948,726
BPS Flume Replacement	2,420,096	7,718,777	(32,918)				10,105,955
BPS 1Generator Rewind		2,537,279	9,194,781				11,732,060
Unit 1a Compressor Repl		1,500,009	5,415,811				6,915,820
BB Recycle Settling Pond	1,984,678	3,789,979	40,343				5,815,001
BB1 Furnace Floor Repl W/Refractory	4,939,830						4,939,830
BB1 Boiler 2nd Pt Radiant Supherheater Repl	2,751,473	1,162,723					3,914,196
BB1 Boiler Primary Reheater Rplc						6,000,000	6,000,000
BB1 Control Rm Project	2,897,150	1,320,598	3,495				4,221,243
BB1 Duct Replacement						5,000,000	5,000,000
BB1 Generator Rewind/Rings						12,500,000	12,500,000
BB1 Hp/Ip/Lp Turbine & Valves Rplc						6,000,000	6,000,000
BB1 Precip Upgrade						7,000,000	7,000,000
BB2 2nd Radiant Superheater Repl	1,508,436						1,508,436
BB2 Coal Pipe System Replacement	1,327,061						1,327,061
BB2 Controls Replacement	1,613,950						1,613,950
BB2 ECRC SCR 4th Catalyst Add'l				938,502	2,052,864	2,033,272	5,024,638
BB2 Furnace Floor Refractory Repl	690,060						690,060
BB2 Generator Rewind With Retaining Rings	2,768,122	5,271,995	4,850,414				12,890,531
BB2 Hp/Ip Steam Turbine & Vvs Restoration	3,416,160						3,416,160
BB2 L-0 Turbine Blade Repl	3,339,687						3,339,687
BB3 Deaerator & Storage Vessel				384,466	2,819,931		3,204,397
BB3 Economizer Replacement				2,051,745	1,780,941		3,832,686
BB3 ECRC BB3 Precipitator Upgrade				2,474,382	5,913,824		8,388,206
BB3 Generator Rewind				4,203,527	6,292,474		10,496,001
BB3 High Temp Reheater Replacement				2,367,724	2,730,925		5,098,649
BB3 High Temp Superheater Rplc				2,734,256	2,249,397		4,983,654
BB3 Hp/Ip/Lp Turbine & Valves				6,933	3,293,067		3,300,000
BB3 Stack Lining				730,562	2,741,839		3,472,400
BB4 #3 Stack Liner Replacement		3,193,554	1,002				3,194,555
BB4 BFP Turbine Overhaul						4,008,400	4,008,400
BB4 Coal Piping						4,008,400	4,008,400
BB4 Condenser Ball Cleaning System	2,079,525	1,034,114					3,113,638

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Energy Supply Capital $3+ Million Projects (Through 2014)

FP Description	2009 Actuals	2010 Actuals	2011 Actuals	2012 Actuals	2013 Budget	2014 Budget	Total 09-14
BB4 Condenser Tube Bundle Replacement	5,115,958	1,524,249	5,861				6,646,068
BB4 Duct Repl.						7,515,770	7,515,770
BB4 Finishing Reheater Replacement						6,012,620	6,012,620
BB4 Hot Reheat Piping Replacement						3,006,300	3,006,300
BB4 Hp/Ip/Lp Main Turbine & Vvs						6,012,620	6,012,620
BB4 Platen Superheater Replacement	1,295,427	1,058,382					2,353,809
BB4 Precipitator Overhaul				17,911		9,018,920	9,036,831
BBc 316b Study (ECRC)						3,006,310	3,006,310
BBc Arc Flash Electrical Upgrades				807,793	4,190,007	-	4,997,800
BBc Reverse Osmosis System Upgrades				611,281	25,660	3,661,059	4,298,000
Dismantling Gannon	1,371,705	3,779,188	2,614,419	5,320,305	2,500,000	5,000,000	20,585,616
ES-FGD-Reliability Initiative			6,557,388	7,694,971	12,092,145	33,012,111	59,356,615
BB FGD Fines Filter System			7,027,089	5,799,227	47,161	-	12,873,477
BB Gypsum Storage Addition			1,303,017	1,059,595	12,627,716	6,694,242	21,684,570
Es-Polk-CSA's	7,130,074	7,554,206	5,227,820	5,751,036	4,120,647	5,683,278	35,467,061
Pk1 Ct NG Secondary Fuel Conv				3,839,703	9,692,297		13,532,000
Pk 1 Rotor	4,468,662						4,468,662
Pk1 Rotor Failure				8,297,997			8,297,997
Pk2-5 Mkvie Controls Replacement			4,864,829	1,584,466			6,449,294
Pk-Polk-Water Project	1,916,210	3,373,171	8,481,078	17,401,874	33,824,275	6,582,992	71,579,600
Pk Water - Phase II (Mlbrry & Polk)				-	1,222,080	1,915,520	3,137,600
Solid Fuel Handling Initiative			10,799,800	33,285,238	14,849,163	3,752,486	62,686,687
BB Rail Unloading	50,974,656	1,289,006					52,263,662
BB SCR's	44,725,007	11,056,559					55,781,566
Total $3 + Mill Projects	**255,156,720**	**78,763,722**	**87,814,550**	**121,200,932**	**140,731,039**	**164,740,751**	**848,407,714**
Total ES Capital (w/o Polk CC2)	**337,287,447**	**148,879,999**	**158,905,263**	**175,541,491**	**202,529,711**	**243,869,662**	**1,267,013,574**
PK2-5 Combined Cycle Addition				**4,986,842**	**46,919,289**	**147,799,506**	**199,705,637**
Total ES Capital (w/ Polk CC2)	**337,287,447**	**148,879,999**	**158,905,263**	**180,528,333**	**249,449,000**	**391,669,168**	**1,466,719,211**

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Energy Supply
2007-2014 Capital Expenditures
Excluding AFUDC ($ 000)

	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Budget	2014 Budget
Big Bend	$95,424	$84,124	$96,035	$72,537	$52,154	$46,075	$81,108	$144,425
Bayside	4,832	8,284	9,112	23,189	39,232	16,978	5,581	13,316
Polk	3,905	8,287	16,950	6,842	12,850	20,279	7,970	12,487
CSA (Bayside & Polk) [1]	28,371	26,593	31,728	28,543	18,740	19,588	19,785	18,843
All Other	1,992	2,546	2,236	1,439	1,677	3,352	2,820	3,105
Total Recurring Capital	$134,524	$129,834	$156,061	$132,550	$124,653	$106,272	$117,264	$192,176
Gulfstream Pipeline	$20,427	($5,534)						
Big Bend SCR Additions [2]	80,250	65,480	$44,853	$11,057	$83			
Polk Units 4&5 Expansion	9,192							
Aero CT Expansion (BB 4, BS 3,4,5,6) [3]		108,490	83,282	611				
Big Bend Rail Unloading Addition [4]		7,128	50,975	1,289				
Polk Reclaimed Water Project			1,916	3,373	$8,482	$17,402	$35,046	$8,499
Big Bend FGD Reliability					6,557	7,504	12,139	33,012
Big Bend Gypsum Storage Addition					1,303	1,063	12,628	6,694
Big Bend Gypsum Quality Improvement					7,027	5,799	0	0
Big Bend Solid Fuel Handling Reliability					10,800	33,255	14,593	3,489
Polk Auxiliary Fuel Conversion Project						4,240	10,860	0
Polk 2 Combined Cycle Project [5]						4,993	46,919	147,799
Total Non-Recurring Capital	$109,869	$175,564	$181,026	$16,330	$34,252	$74,256	$132,185	$199,493
Total Capital	$244,393	$305,398	$337,087	$148,880	$158,905	$180,528	$249,449	$391,669

[1] the CSA agreements covering Bayside Units 1 & 2 were renegotiated effective for 2011

[1] the CSA agreements covering Polk Units 2, 3, 4 & 5 were renegotiated effective for 2012

[2] Big Bend SCRs were put in-service as follows: Unit 4 May 2007; Unit 3 July 2008; Unit 2 September 2009; Unit 1 April 2010

[3] Aero units were put in-service in 2009: Bayside 5&6 April 2009; Bayside 3&4 July 2009; Big Bend 4 August 2009

[4] Big Bend Rail Unloading Facility was put in-service in December 2009

[5] Polk 2 Combined Cycle Project was approved by the Commission on December 12, 2012 as part of a need determination hearing and is not included in the revenue requirement calculation for this base rate proceeding

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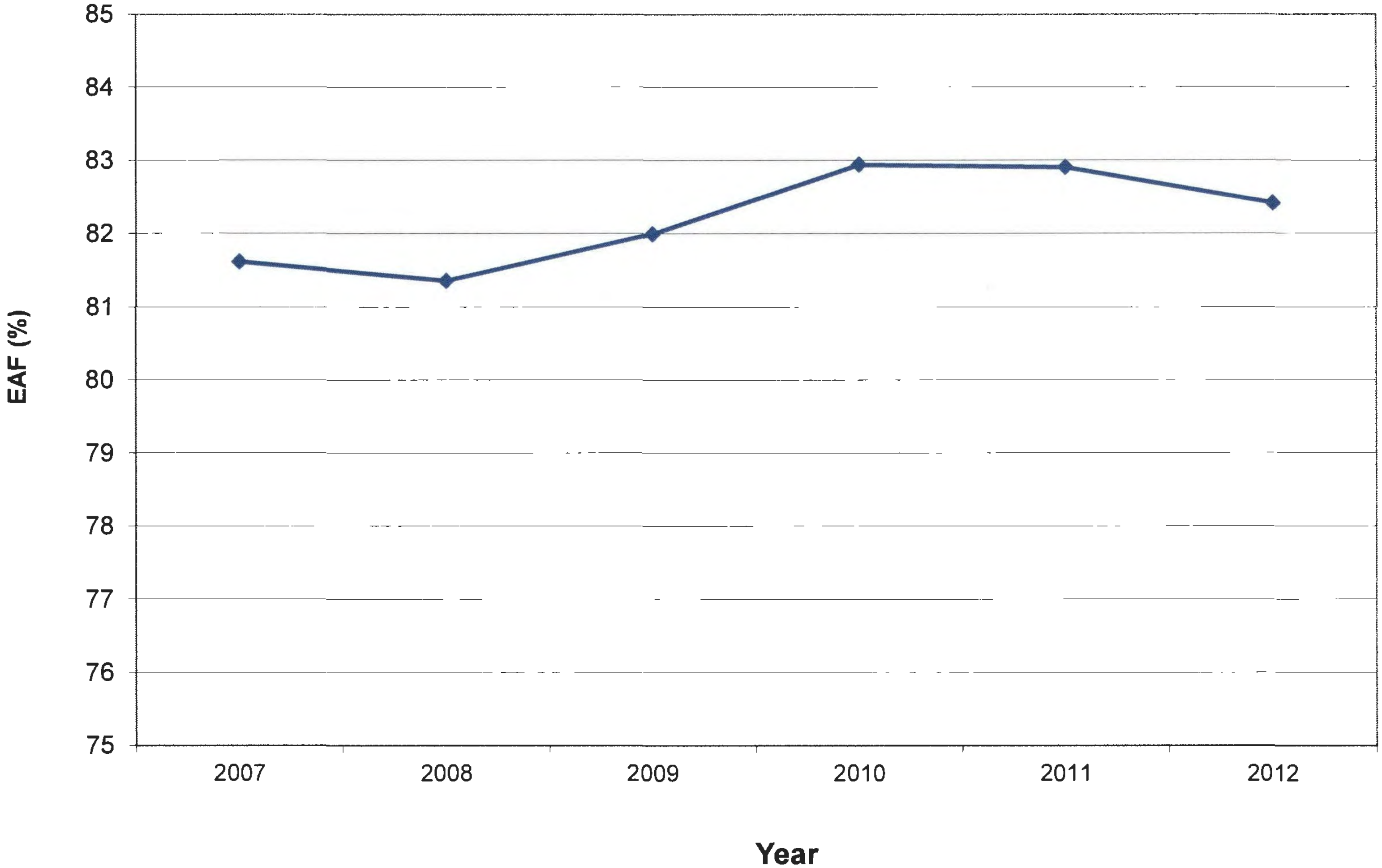
Energy Supply
2007-2014 O&M Net of ECRC Recovery
$000

	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Budget	2014 Budget
Big Bend and Materials Handling	$ 70,725	$ 73,469	$ 77,613	$ 72,268	$ 67,086	$ 68,681	$ 74,998	$ 84,499
Bayside	$ 14,445	$ 16,950	$ 14,913	$ 14,422	$ 16,184	$ 17,013	$ 16,214	$ 16,971
Phillips	$ 1,159	$ 1,165	$ 1,149	$ 133	$ 121	$ 97	$ 102	$ 104
Polk *	$ 22,656	$ 23,668	$ 25,980	$ 21,383	$ 20,908	$ 23,009	$ 23,669	$ 28,628
ES Support (Environmental, Construction, Etc.)	$ 13,047	$ 10,849	$ 18,419	$ 11,820	$ 10,622	$ 7,857	$ 5,507	$ 5,868
Aero CTs (BB 4, BS 3,4,5,6) **	$ -	$ -	$ 212	$ 299	$ 445	$ 617	$ 1,010	$ 1,270
Total O&M Net of ECRC Recovery	$ 122,032	$ 126,101	$ 138,286	$ 120,325	$ 115,366	$ 117,274	$ 121,500	$ 137,340
CPI-U multiplier		1.03839	1.03473	1.0517	1.08488	1.10852	1.13061	1.1607
Benchmark from 2007		$ 126,717	$ 126,270	$ 128,341	$ 132,390	$ 135,275	$ 137,971	$ 141,643

* 2014 includes an additional $3.0 million O&M associated with waste water pipeline, treatment systems and disposal wells

** Aero units were put in-service in 2009: Bayside 5&6 - April 2009; Bayside 3&4 - July 2009; Big Bend 4 - August 2009

Total System Equivalent Availability Factor (EAF)
2007-2012



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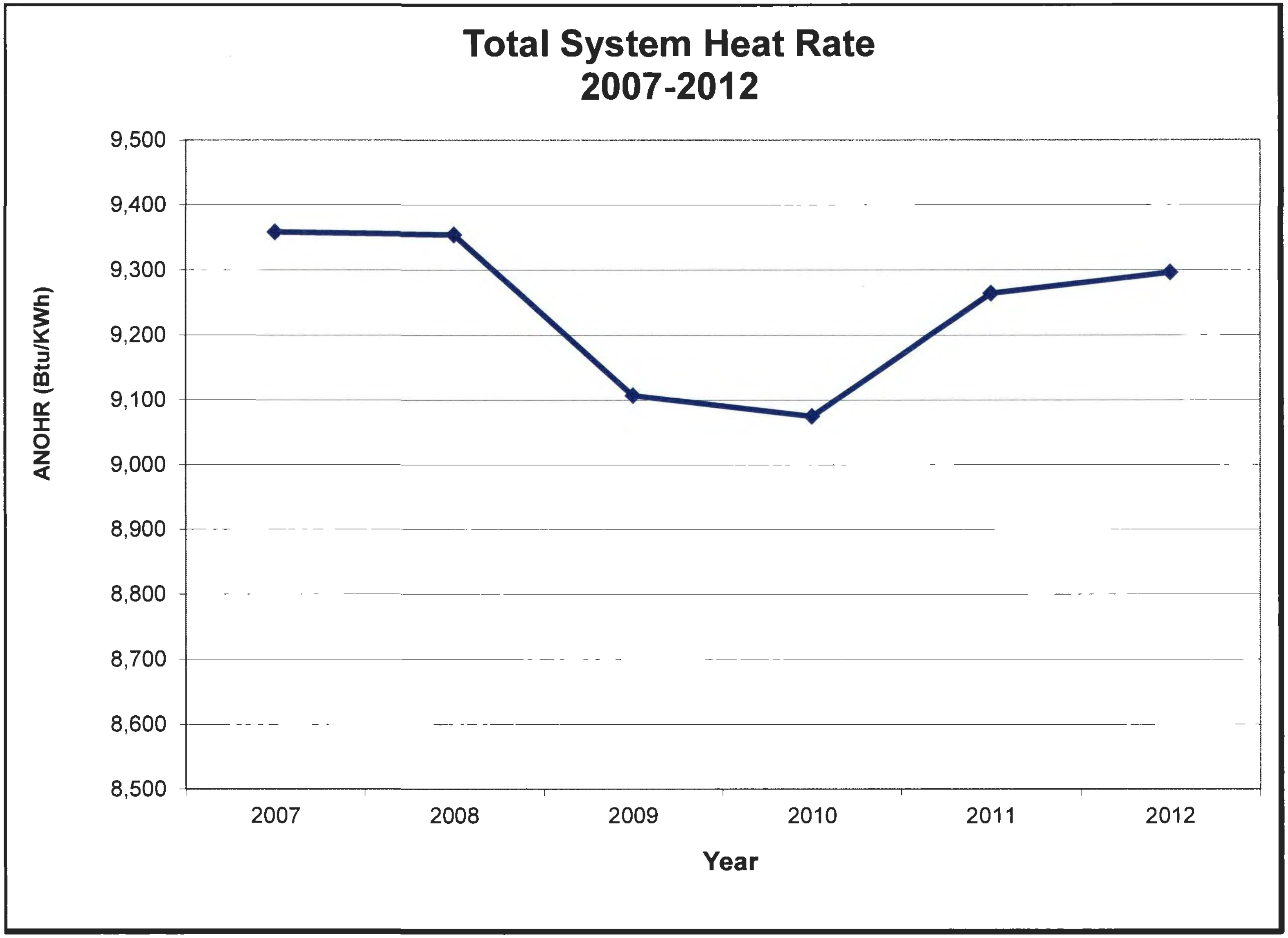

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