



Operations Monitoring Report

First Quarter FY11

Prepared by:

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I. Executive Summary

A review of the fiscal year 2011 (FY11) First Quarter performance and contract obligations between Constellation Energy Projects and Services (CEPS) and the Metropolitan Government of Nashville and Davidson County (Metro) is presented in this report by Thermal Engineering Group, Inc (TEG). The status of the available funds for all active capital construction and repair and improvement projects are also presented. For the fiscal year 2011, CEPS has satisfactorily met all of the contract obligations to Metro and has had no contract violations.

For the First Quarter FY11, the chilled water sendout increased by approximately 15.9% over the previous First Quarter (FY10), and the sales increased by approximately 16.6%. There was a 39.9% increase in number of cooling degree days between the two quarters. The peak chilled water demand for the current quarter was 16,700 tons with a cooling load factor for the quarter of approximately 66%.

The steam sendout for the current quarter decreased by 8.1% over the previous First Quarter. Steam sales also decreased by approximately 7.1% over the previous First Quarter. The current quarter saw a decrease in heating degree days (36.4% decrease) over the previous First Quarter. Steam system losses were approximately 45.2% of the sendout which was approximately the same as in the previous First Quarter (relative to sendout). The peak steam demand for the current quarter was 37,938 pounds per hour, which represents an approximate 6.8% decrease from the previous First Quarter. The heating load factor for the quarter is approximately 44.8%.

The Energy Generating Facility (EGF) performance continues to surpass the System Performance Guarantee (Guaranteed Maximum Quantity or GMQ) levels. The chilled water plant electric consumption continues to perform considerably lower than the guaranteed levels. The steam plant electric consumption was higher than the guaranteed levels due to the low steam amount of steam sales, which is typical for the First Quarter. The steam plant fuel efficiency increased marginally from the previous First Quarter. The total water consumption for the steam and chilled water plants has increased approximately 16.9% from the previous First Quarter. The chilled water EDS make-up has increased by approximately 40.1% with additional increases in all other chiller plant water uses.

Work continued on DES Capital and Repair & Improvement Projects during the First Quarter of FY11. DES062, DES069 and DES079 were closed during the First Quarter FY11. DES059 and DES081 was substantially completed during the First Quarter with closeout expected in the Second Quarter. Design was completed on DES073; but design continues with DES080. Construction began on DES077 during the quarter. One project was awarded during the First Quarter, DES073, with work scheduled to begin during the Second Quarter. A portion of the work began on DES063 due to CEPS' offer to provide the labor to Metro. Work also began on the tunnel rock rehabilitation project, DES067. DES076 is still on hold awaiting completion of a secondary fiber optic cable installation by the State. Repair and Improvements to the EDS continue as scheduled.

The current fiscal year system operating costs were \$4,461,089 at the end of the First Quarter. This value represents approximately 22.0% of the total budgeted operating cost for FY11. The customer revenues from the sales of steam and chilled water for FY11 to date were \$4,242,612 which is approximately 23.8% of the budgeted amount. The difference between the operating costs and customer revenue, the Metro funding amount (MFA), is \$218,477 (8.9% of budget).

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II. Energy Distribution System Sales and Performance

This section of the report discusses and presents performance information regarding the operation of the EGF for the periods described. Charts and tabular data are also presented to provide a more detailed description of the actual EGF performance.

A. Chilled Water

1. Sales and Sendout

A comparison for the First Quarter chilled water sales is shown in Figure 1. This data reflects an increase in sales for the current quarter over the same quarter of the previous fiscal year by 16.6%. A comparison of the two quarters reveals a 39.9% increase in the number of cooling degree days.

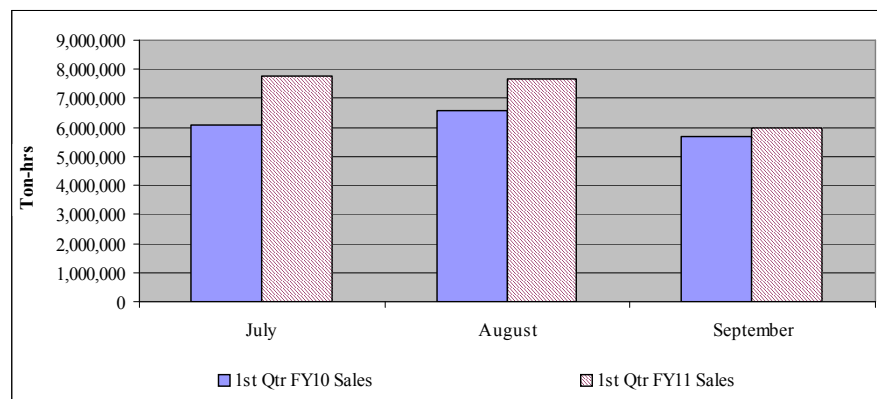


Figure 1. First Quarter FY11 Chilled Water Sales Comparison

The peak chilled water demand for the current quarter is 16,700 tons. The cooling load factor for the current quarter, relative to sendout, is approximately 66% and is 15.2% greater than in the previous First Quarter.

Figure 2 shows the chilled water sales, sendout and losses for the previous twelve months. The losses on this figure are defined as the difference in tonhrs per month between the recorded sendout and sales values and represent the total energy loss for chilled water in the EDS. The number of cooling degree days per month are also tracked for comparison.

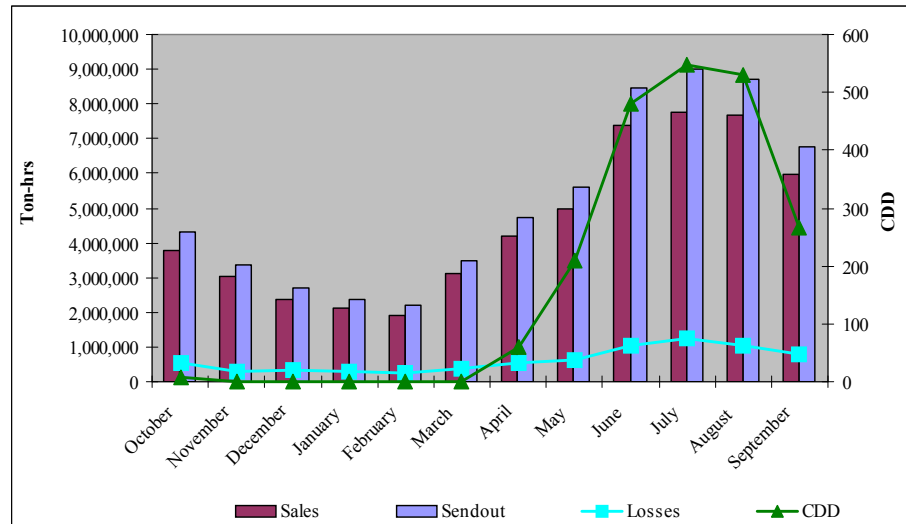


Figure 2. Chilled Water Sales, Sendout, Losses and CDD for the Previous Twelve Months

2. Losses

A comparison of the total, chilled water energy losses in the EDS for the First Quarter is shown in Figure 3. These losses are the difference in chilled water sendout and sales. The energy loss is caused by a combination of the loss in the mass of chilled water and a net heat gain into the chilled water piping. The increase in supply temperature between the EGF and the customers is typically less than 1°F.

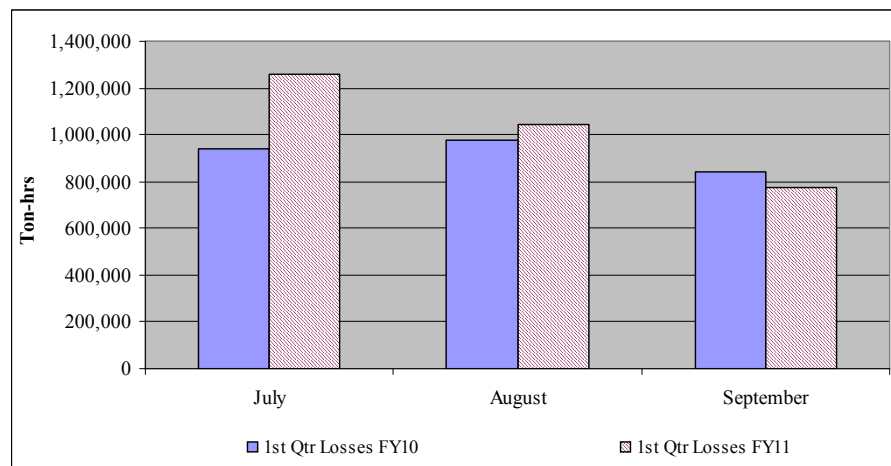


Figure 3. Chilled Water System Loss Comparison for the First Quarter FY 11

The EDS make-up increased by approximately 40.1% over the previous First Quarter. The total energy losses increased by approximately 42.2%. The make-up to the cooling towers increased by approximately 11.3%. The number of cycles of concentration in the condensing water circuit decreased by 2.2% in the First Quarter over the previous First Quarter. The overall city water make-up comparison for the chilled water system is shown in Figure 4.

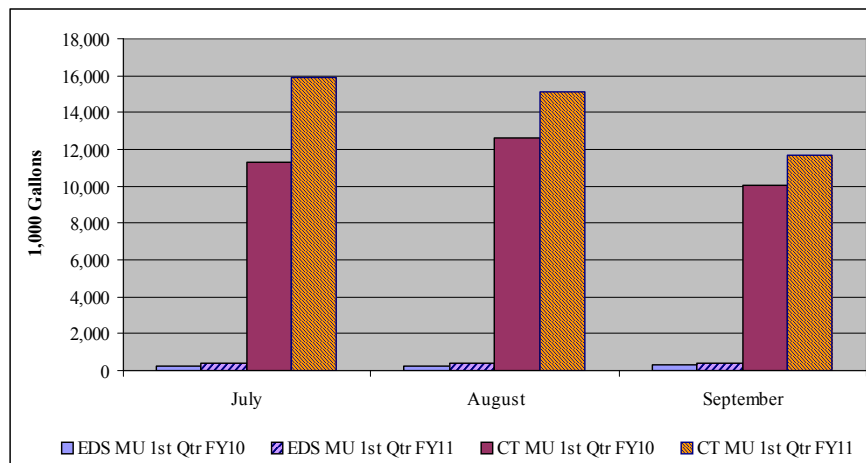


Figure 4. Chilled Water System City Water Usage Comparison

The increase in water usage for the chilled water system is largely due to the increase in warmer and more humid weather experienced this First Quarter. This increase in ambient temperature is reflected in the increase in the number of cooling degree days for the First Quarter by 39.9% over the previous First Quarter. Higher ambient temperatures and relative humidity cause an increase the amount of water used by the cooling towers due to the increase in the required amount of evaporation. The cooling tower use represents 97.4% of all city water make-up to the chilled water system.

3. Performance

The performance of the chilled water aspect of the EGF is presented by the following two charts, Figures 5 and 6, for FY11. Under the management of CEPS, the System Performance Guarantee levels as described in the ARMA are being achieved quite satisfactorily.

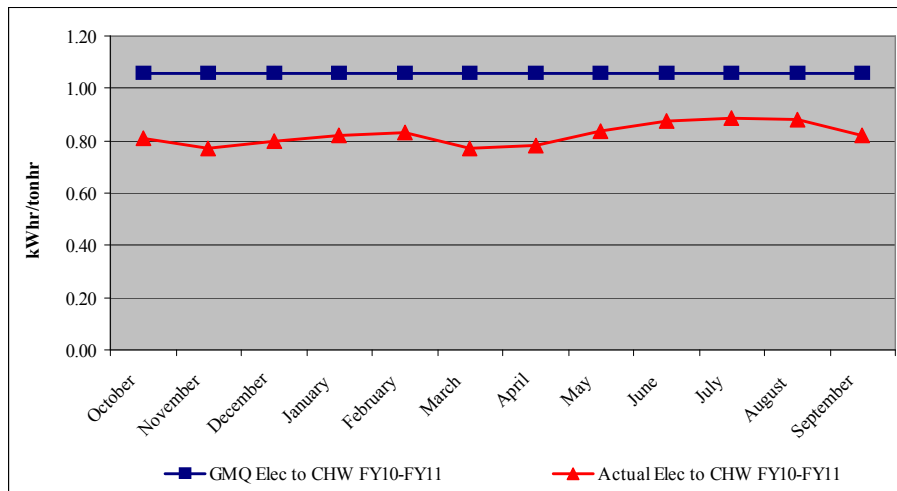


Figure 5. Chiller Plant Performance Guarantee Comparison for the Previous Twelve Months

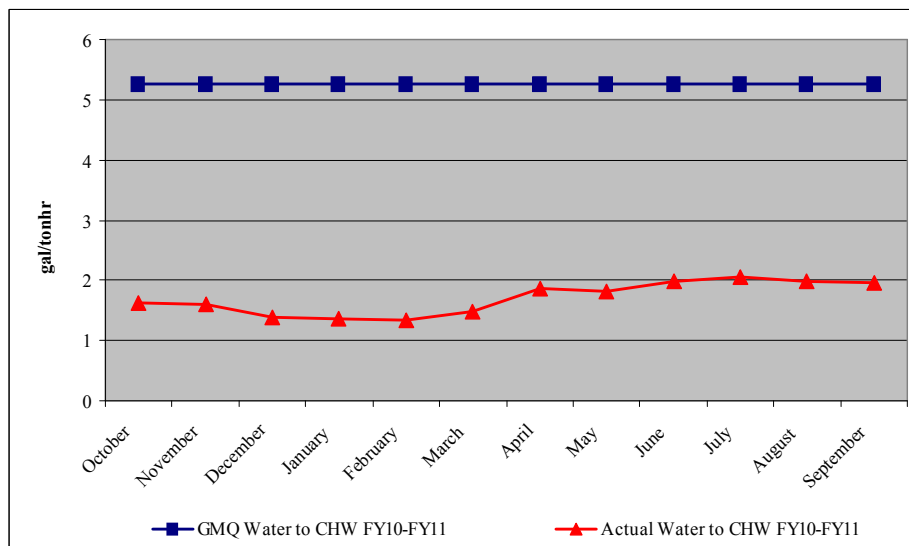


Figure 6. Chiller Plant Water Consumption Performance Guarantee Comparison for the Previous Twelve Months

The chilled water allocation of the electric consumption falls under the GMQ limit of 1.055 kW/hr per ton/hr for the current quarter, and no excursion is reported for the current fiscal year. The chiller plant electric usage for the current quarter increased approximately 20.2% over the First Quarter for FY10 due to an increase in production in 2010. The actual electric conversion factor increased by 3.1% over the previous First Quarter.

The actual chilled water plant water conversion factor is approximately 8.0% greater than in the previous First Quarter. The total consumption of city water for the chiller plant for the current quarter is approximately 25.9% greater than that for the previous First Quarter.

B. Steam

1. Sales and Sendout

The steam sendout decreased by approximately 8.1% over the previous First Quarter (FY10), and the sales decreased by approximately 7.1%. The steam system losses decreased by approximately 9.2%. The number of heating degree days decreased by 36.4% over the previous First Quarter. A comparison for the First Quarter steam sales is shown in Figure 7.

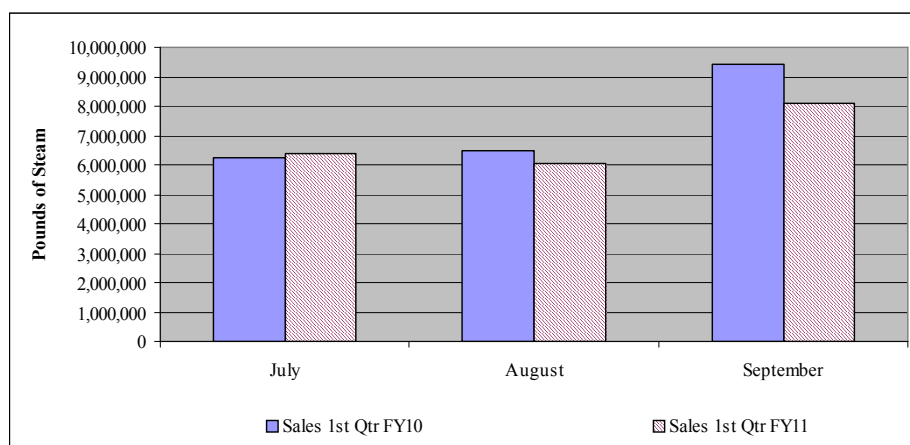


Figure 7. Steam Sales Comparison for the First Quarter FY11

The peak steam demand for the current quarter is 37,938 pph, which reflects an approximate 6.8% decrease in the peak steam production over the previous First Quarter. The heating load factor for the current quarter, relative to sendout, is approximately 45% and is marginally less than in the previous First Quarter.

Figure 8 shows the steam sales, sendout and losses for the previous twelve months. The losses on this figure are defined as the difference in pounds per month between the recorded sendout and sales values and represent the total mass loss in the EDS between the EGF and the customer meters.

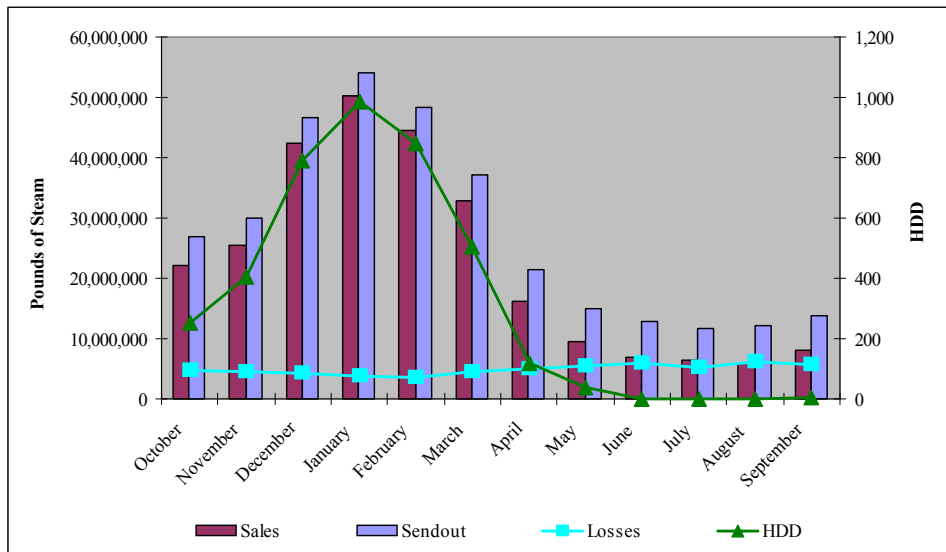


Figure 8. Steam Sales, Sendout, Losses and HDD for the Previous Twelve Months

2. Losses

A comparison of the total steam mass losses in the EDS for the First Quarter is shown in Figure 9. The mass loss is caused by the heat loss in the EDS between the EGF and the customer meters, resulting in a mass loss at steam traps. Faulty traps, steam leaks or meter error could also be a contributing cause of these losses. The total losses for the current quarter are approximately 9.2% lower than in the previous First Quarter.

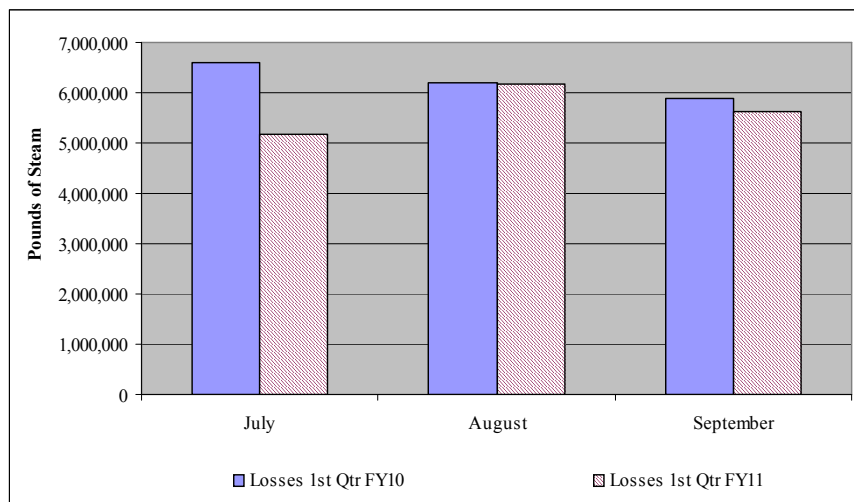


Figure 9. First Quarter FY11 Steam System Losses

The amount of city water make-up (MU) to the steam system consists of the loss in mass between the EGF and the customers, in the condensate return from the customers to the EGF and losses at the EGF. This data is shown in the comparison of First Quarter data in Figure 10. Figure 10 depicts a decrease in city water make-up to the steam system of approximately 62.1% for the current quarter due primarily to the ongoing capital and maintenance improvements within the EDS.

3. Performance

The performance of the steam system aspect of the EGF is presented by the following three charts, Figures 11, 12 and 13. Under the management of CEPS, the System Performance Guarantee levels as described in the ARMA are being achieved satisfactorily except for the excursions in the electric consumption during the quarter.

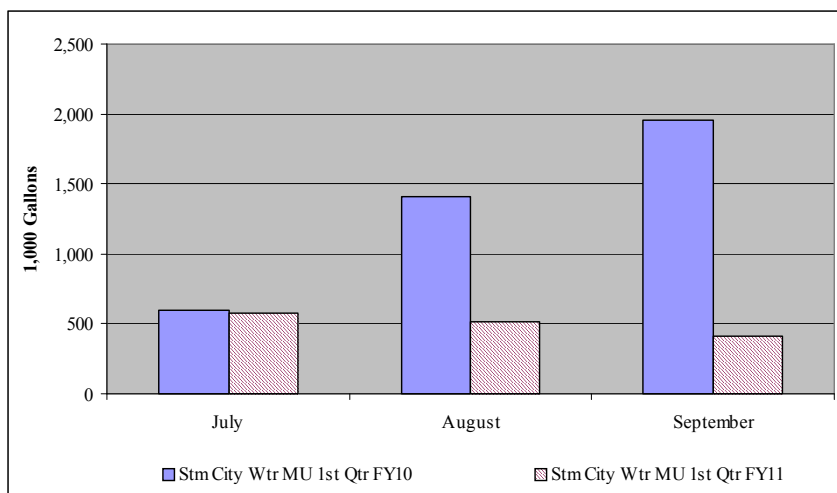


Figure 10. First Quarter FY11 Steam System City Water Make-up Comparison

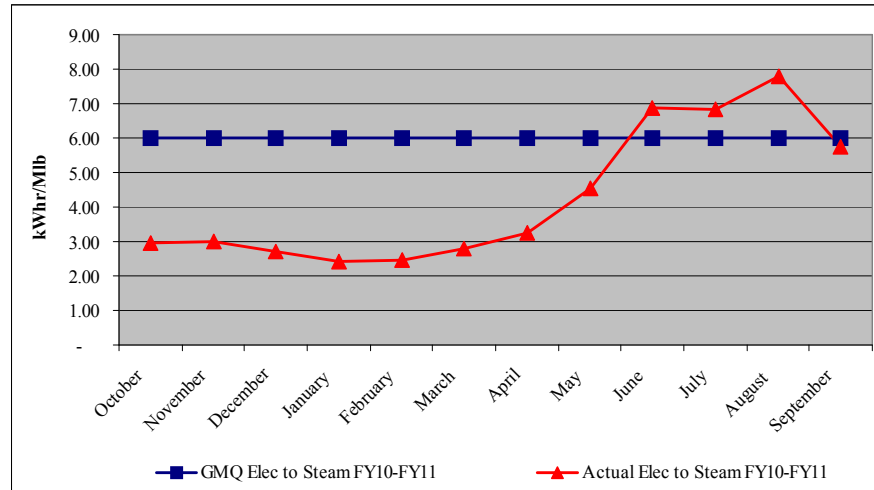


Figure 11. Steam Plant Electric Consumption Performance Guarantee for the Previous Twelve Months

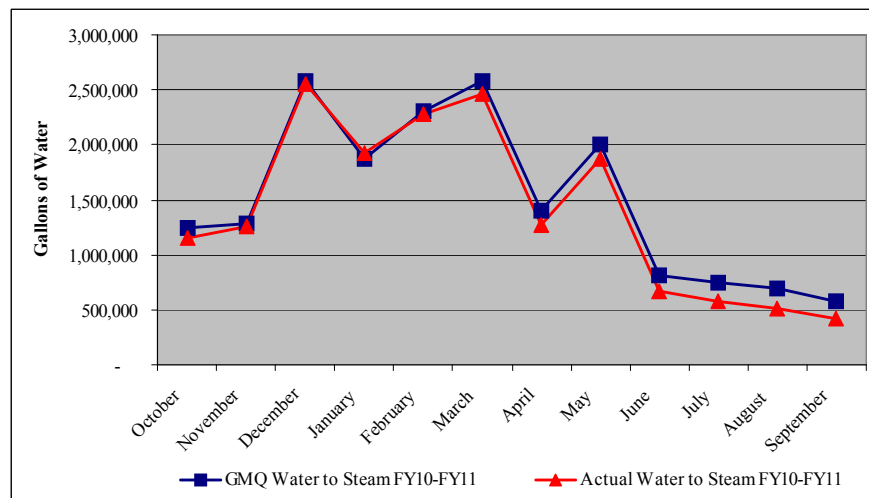


Figure 12. Steam Plant Water Comparison Performance Guarantee for the Previous Twelve Months

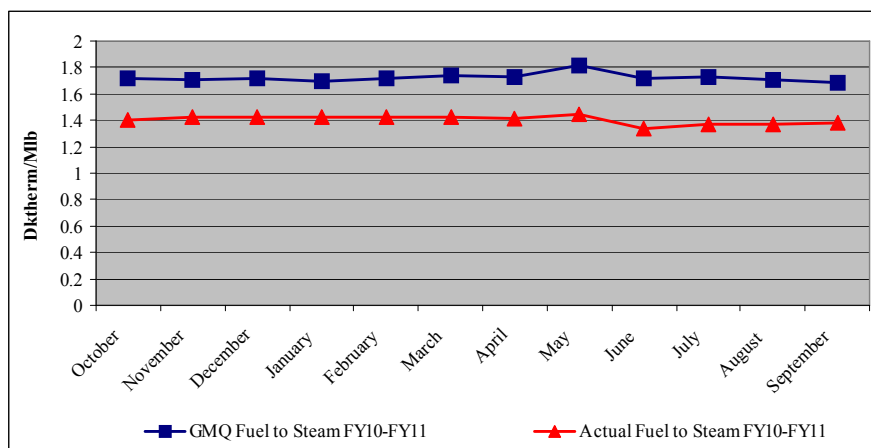


Figure 13. Steam Plant Fuel Consumption Performance Guarantee for the Previous Twelve Months

As typically seen during the summer months, the steam electric conversion factor exceeded the contract guarantee limit for July and August. This phenomenon is due to the fixed amount of electricity required to produce steam. With low steam demands, the ratio of electricity use to pound of steam is relatively high, causing the excursions above the guaranteed level during periods of low steam demand.

The current quarter experienced a 12.5% decrease in the steam plant electric consumption while experiencing a 5.8% decrease in the electric conversion factor. The water consumption for the steam plant decreased 62.1% this quarter as compared to the previous First Quarter. The fuel consumption per unit of steam sales is relatively constant throughout the year and when compared to the historic data. The boiler plant fuel efficiency increased 2.8% for the current quarter.

C. Contract Guarantee Performance

The production and sales performance for the EGF and EDS are summarized in Table 1 for the current quarter. Additional parameters, such as cooling tower blowdown and peak demands are listed in this table, as well. Table 2 presents the First Quarter comparison of the Guaranteed Maximum Quantities (GMQ) of the criteria commodities (fuel, water and electricity).

Table 1. First Quarter FY11 Production, Sales and Consumption Summary

Item	Unit	First Quarter FY11	First Quarter FY10	*Percent Difference
	days	92	92	0.00%
Total Electric Use	kWhrs	18,685,728	15,591,235	19.85%
Chilled Water	kWhrs	18,548,153	15,433,967	20.18%
Steam	kWhrs	137,575	157,268	-12.52%
Total Water Use	kgal	45,358	38,792	16.93%
Total Chilled Water	kgal	43,855	34,831	25.91%
EDS Make-up	kgal	1,128	805	40.12%
Cooling Towers	kgal	42,727	34,026	25.57%
Calc CT Evaporation	kgal	36,533	29,188	25.16%
CT Blowdown	kgal	6,194	4,838	28.03%
Calc # Cycles		5.90	6.03	-2.24%
Steam	kgal	1,503	3,961	-62.06%
Total Fuel Use	mmBTU	51,505	57,665	-10.68%
Natural Gas	mmBTU	51,505	57,665	-10.68%
Propane	mmBTU	0	0	N/A
Condensate Return	kgal	2,847	1,244	128.83%
	lbs	23,220,521	10,147,509	128.83%
Avg Temp	°F	179.3	169.7	5.70%
Sendout				
Chilled Water	tonhrs	24,456,900	21,103,800	15.89%
Steam	lbs	37,522,000	40,821,000	-8.08%
Peak CHW Demand	tons	16,700	16,600	0.60%
Peak Steam Demand	lb/hr	37,938	40,688	-6.76%
CHW LF		66.33%	57.58%	15.19%
Steam LF		44.79%	45.44%	-1.42%
Sales				
Chilled Water	tonhrs	21,386,379	18,344,659	16.58%
Steam	lbs	20,560,619	22,133,258	-7.11%
Losses				
Chilled Water	tonhrs	3,070,521	2,759,141	11.29%
Steam	lbs	16,961,381	18,687,742	-9.24%
		45.20%	45.78%	-1.26%
Degree Days				
CDD		1,344	961	39.85%
HDD		7	11	-36.36%

*positive percent difference values imply an increase from FY10 to FY11

Table 2. First Quarter FY11 Performance Guarantee Comparison for Steam and Chilled Water

GMQ Calculations	Unit	First Quarter FY11	First Quarter FY10	*Percent Difference
Steam				
GMQ Elec Conversion	kWhr/Mlb	6.00	6.00	
Electric Conversion	kWhr/Mlb	6.69	7.11	-5.83%
GMQ Plant Efficiency	Dth/Mlb	1.707	1.777	
Plant Efficiency	Dth/Mlb	1.373	1.413	-2.83%
Actual %CR		61.89%	24.86%	148.95%
Avg CR Temp	°F	179	170	5.70%
GMQ Water Conversion	gal	2,016,553	4,325,057	
Water Conversion	gal	1,518,030	4,000,610	-62.06%
Chilled Water				
GMQ Elec Conversion	kWhr/tonhr	1.055	1.055	
Electric Conversion	kWhr/tonhr	0.867	0.841	3.09%
GMQ Water Conversion	gal/tonhr	5.25	5.25	
Water Conversion	gal/tonhr	2.05	1.90	8.00%

*positive percent difference values imply an increase from FY10 to FY11

D. Operating Costs

The operating costs for the DES include the management fee to CEPS, debt service payments on the bonds and engineering and administration costs. Some of these costs are fixed, implying that they do not vary depending on the production or sales of steam or chilled water. The variable costs are dependent on the amounts of steam and chilled water produced and sold to the customers and include the utility and chemical treatment costs. The vast majority of the costs incurred for the operation of the DES are passed onto the customers in the form of the demand charges (fixed costs) and energy charges (variable costs). A summary of the total operating costs for the fiscal year to date are shown in Table 3.

The revenues shown reflect the charges to the customers for their respective steam and chilled water service. The difference between the total costs and revenues from the customers is the shortfall that must be paid by Metro. The shortfall exists, in part, due to the remaining capacity at the EGF that was included in the original construction and remains unsold. This capacity is available for potential future customers.

The current quarter (and fiscal year to date) system operating costs were \$4,461,089. This value represents approximately 22.0% of the total budgeted operating cost for FY11. The customer revenues from the sales of steam and chilled water for FY11 were \$4,242,612

which is approximately 23.8% of the budgeted amount. The difference between the operating costs and customer revenue, the Metro funding amount (MFA), is approximately \$218,477. This value is approximately 8.9% of budget.

Table 3. First Quarter FY11 Expenses to Date

Item	FY11 Budget	Total Spending to Date	% of Budget
FOC:			
Basic	\$ 3,976,200	\$ 988,755.75	24.87%
9th Chiller	\$ 37,200	\$ 9,264.75	24.91%
C/O 6A	\$ 73,400	\$ 18,291.51	24.92%
C/O 6B	\$ 64,300	\$ 16,013.43	24.90%
Pass-thru Charges:			
Water	\$ 574,000	\$ 156,947.84	27.34%
Chemical Treatment	\$ 150,000	\$ 33,954.63	22.64%
Engineering	\$ 26,200	\$ 3,604.53	13.76%
Insurance	\$ 27,700	\$ -	0.00%
EDS Electricity	\$ -	\$ 13,576.00	n.a.
EDS R&I	\$ 176,500	\$ 3,282.06	1.86%
EDS Surcharge	\$ 70,600	\$ -	0.00%
Marketing:			
CES Sales Activity	\$ -	\$ -	n.a.
Incentive Payments	\$ -	\$ -	n.a.
Metro Marketing	\$ 15,000	\$ -	0.00%
Project Administration	\$ 30,700	\$ 360.00	1.17%
FEA:			
Steam	\$ -	\$ 13,190.85	n.a.
Chilled Water	\$ -	\$ 125,430.95	n.a.
Misc:			
Metro Credit	\$ -	\$ (170,523.84)	n.a.
ARFA	\$ -	\$ 14,360.13	n.a.
Deferral	\$ -	\$ -	n.a.
Subtotal - Man Fee =	\$ 5,045,300	\$ 1,219,262.00	24.17%
Reimbursed Management Fee		\$ 405,211.45	
Metro Costs:			
Metro Incremental Cost	\$ 469,900	\$ 282,077.15	60.03%
EDS Water/Sewer	\$ -	\$ 25.10	n.a.
Natural Gas	\$ 4,445,500	\$ 312,242.55	7.02%
Propane	\$ -	\$ -	n.a.
Electricity	\$ 4,949,700	\$ 1,567,251.61	31.66%
Subtotal - Operations =	\$ 15,086,900	\$ 3,387,745.00	22.45%
Debt Service			
2002 Bonds	\$ 4,239,500	\$ 1,090,723.44	25.73%
2005 Bonds	\$ 628,100	\$ -	0.00%
2007 Bonds	\$ 227,800	\$ -	0.00%
2008 Bonds	\$ 220,500	\$ -	0.00%
2010 Bonds	\$ -	\$ -	n.a.
Interest Revenue	\$ (100,000)	\$ (17,379.17)	17.38%
Oper. Reserve Funding Deposit	\$ -	\$ -	n.a.
Subtotal - Capital =	\$ 5,215,900	\$ 1,073,344.27	20.58%
Total =	\$ 20,302,800	\$ 4,461,089.27	21.97%
Revenues =	\$ 17,858,700	\$ 4,242,612.37	23.76%
Metro Funding Amount =	\$ 2,444,100	\$ 218,476.90	8.94%

The DES serves 26 customers and 40 buildings in downtown Nashville. These customers are divided into three categories: 1) Private customers who privately own their buildings, 2) State of TN owned buildings and 3) Metro owned buildings. A summary of the annual costs for each of these three categories is presented in Table 4. These values include late fees and penalties and any unpaid balances.

Table 4. FY11 Customer Revenues to the End of the First Quarter

Building	Chilled Water			Steam		
	Total Cost	Consumption (tonhrs/yr)	Unit Cost (\$/tonhr)	Total Cost	Consumption (Mlb/yr)	Unit Cost (\$/Mlb)
Private Customers	\$ 1,235,621.85	8,444,162	\$ 0.1463	\$ 289,008.66	5,647	\$ 51.1799
State Government	\$ 1,005,554.76	6,482,061	\$ 0.1551	\$ 397,676.57	7,284	\$ 54.5961
Metro Government	\$ 921,859.81	6,460,156	\$ 0.1427	\$ 358,359.57	7,630	\$ 46.9689
New Customers	\$ 421,368.03	3,003,468	\$ 0.1403	\$ 26,986.62	89	\$ 302.2424
Total	\$ 3,163,036.42	21,386,379	\$ 0.1479	\$ 1,045,044.80	20,561	\$ 50.8275

Total Revenue \$ 4,208,081.22
 True-up and Adjustments \$ 34,532.33
 Net Revenue \$ 4,242,613.55

III. EGF Operations

Items relating to the facility operations presented herein are derived from the monthly reports issued by CEPS for FY11. Communication between TEG and CEPS continues to be excellent, and CEPS has reported and managed all EGF operations satisfactorily and according to the ARMA with no contract violations.

A. Reliability

The principle issues surrounding the reliable operation of the EGF relates to the ability to operate without significant interruption, exclusive of planned outages, and disruption of service to the customers. The following disruptions in service occurred during the quarter.

- During the month of July, the system steam pressure had to be lowered several times due to repairs being made to the system related to the May flood.
- Steam production from the EGF was shut down, and a temporary boiler used to provide steam for all of the steam customers except the Wildhorse Saloon and the Ryman Auditorium. The shut down occurred on July 21 and lasted until July 25. During this shut down, repairs to MH-L were completed.

B. Efficiency

The operation of the EGF satisfied the guaranteed levels for all commodity usage during the quarter. There were no significant excursions above the guaranteed levels for the First Quarter, exclusive of the electric to steam conversions. A more detailed discussion of the contract guarantee performance was presented previously in this report.

C. Environment, Health and Safety

No environmental violations were reported during the quarter.

One maintenance mechanic was injured during July when an 8" pipe elbow fell on his foot. Although he did not suffer any broken bones, he was placed on light duty for two days until being fully released to resume his duties. There was no lost time related to this accident.

Monthly safety meetings were conducted by HazMat, Inc., the American Red Cross and through CEPS personnel.

D. Personnel

During the quarter, one of the CEPS stationary engineers accepted a position at a new energy generation facility in Old Hickory, TN. CEPS made several promotions and re-organized personnel during the quarter, as well. A new maintenance mechanic was hired to replace another whose duties have been shifted to replace the stationary engineer position.

The EGF currently has twenty-five full time employees. Of the current number of employees, nineteen were previously employed by Nashville Thermal Transfer Corporation.

E. Training

Staff training for this quarter consisted of the Health and Safety training discussed previously.

F. Water Treatment

The water treatment program consists of regular testing and monitoring of the water chemistry in the steam, chilled water and condensing water systems. Chemicals are added to control the water hardness, chlorine levels and biologicals. Remote testing of the condensate at the AA Birch, Tennessee Tower and the Andrew Jackson also occurs regularly to monitor the concentration and distribution of the steam system chemicals.

- Steam System

- The steam and condensate system had excellent chemistry for most of the quarter with a few exceptions. The condensate return was relatively high for the quarter noted by a marked increase in condensate (128.8% over the last First Quarter).

- Condensing Water System
 - The conductivity of the condensing water continues to be normal with only a few excursions resulting in high cycles of concentration and low blowdown rates.
- Chilled Water System
 - The system control and chemistry continues to be excellent.

G. Maintenance and EGF Repairs

CEPS continues to report on the numerous routine maintenance and preventive maintenance activities performed on the EGF primary and ancillary equipment. The principle items are discussed herein as they relate to the repair, maintenance or replacement of equipment or devices at the facility and are not considered extraordinary. The cost for these items is included as part of the FOCs.

- Repairs were made on the boiler #3 and #4 blowdown valves and the steam blanket piping inside the #4 mud drum.
- Safety gates were installed on the cooling tower level access ladders
- A safety gates was also added to the access ladder from the boiler level to the chemical treatment area on the mezzanine.
- The DA#1 water box repairs began in September.
- Other minor repairs and maintenance were made during the quarter and are listed in the monthly reports issued by CEPS.

H. EGF Walk-through

A quarterly Walk-through of the EGF was performed on September 28, 2010, by Kevin Jacobs, P.E. of TEG. This review involved a tour of the facility with the primary points of interest and concern noted herein.

- The operator log book indicated no recurring issues.
- The head for de-aerator #1 was open for cleaning and inspection. The trays had been removed.
- Boilers #2 and 4 had their steam and mud drums and furnaces open for inspection.
- Numerous minor cracks in the outside concrete walls remain with some indication of new spalling formations. No additional work has been performed on these cracks by CEPS or DES. Subsequent to the initial walk-through, TEG provided a follow-up review of these cracks with Don Stoneburg, P.E. of SE Engineering. His review indicated the following:
 - the formation of the some of the cracks were due to the natural contraction of the concrete;

- the spalling appeared to be due to water entering the crack and penetrating the concrete;
- additional spalling appeared to be related to the presence of shale (used as an aggregate material) near the surface of the concrete;
- all of the cracks and spalling areas do not appear to affect the overall structural integrity of the walls and are, in general, only an aesthetic issue.
- Mr. Stoneburg's recommendations related to these cracks are as follows:
 - All of the existing cracks exposed to weather should be sealed with an injection epoxy (Crack-Pac by Simpson Strongtie or similar) to reduce the amount of water penetration into the concrete.
 - The spalling of existing cracks should be repaired using a concrete repair compound (SikaRepair 223 by Sika or similar).
 - For locations of spalling caused by embedded shale, the shale pieces should be completely removed and the location repaired using a concrete repair compound (SikaRepair 223 by Sika or similar).
- The expansion tank #2 had been taken out of service due to a leak in the expansion tank bladder. CEPS is in the process of repairing this leak.

IV. Capital Projects

The Capital Projects discussed in this section are those projects funded through the issuance of bonds by Metro. Costs for these projects will be paid from funds already appropriated. New projects are anticipated for the 2010 Bond Projects, and some of these projects have been designed and bid. Due to the cost of the Tunnel Rock Rehabilitation project, two FY10 projects were deferred until FY11.

The status of the projects are discussed, and the project cost-to-date and bond balances are also presented.

A. First Quarter FY11 Open Projects

The following projects remained open at the end of the First Quarter FY11.

1. DES033 - Manhole Lid and Ring Replacement/Restoration

This project relates to the repair and replacement of manhole lids and rings whenever Metro Public Works performs street re-paving. Manhole B2 was completed during the First Quarter FY11 after being delayed due to the flood of May 2010. This project will remain open.

2. DES048 - Tunnel Lighting & Electrical Upgrades Phase III

The first two phases of this project have been completed, and the final phase is budgeted and awaiting the completion of the Tunnel Rock Rehabilitation Project (DES 067) scheduled to be complete the first part of 2011.

3. DES059 - CJC Condensate Service Line Repair

A “hot spot” has been noted at the CJC service piping for several months. During the First Quarter of FY11 a small sink hole formed at the curb above these service lines. It was found that the condensate return piping was leaking at this location due to external pipe corrosion. No protective coating or insulation was found on this piping. The condensate service line was replaced with epoxy coated piping and field insulated. All of this work was completed during the First Quarter FY11 and this project will be closed out in the Second Quarter of FY11.

4. DES060 - Manhole & Tunnel Insulation Repair (Revised from DES050 for FY10)

Manhole B2 was completed during the First Quarter. The work associated with this project will be ongoing as required.

5. DES062 - Steam and Condensate Replacement to 120 2nd Avenue North

Metro Parks accepted the brickwork in the sidewalk area for this project, and it was closed out during the First Quarter FY11.

6. DES063 - Manhole A, B & M Sump Pump Installation

Due to the unanticipated high prices received from contractors, this project was not financially viable. However, due to the amount of time required by CEPS personnel to keep Manhole B pumped out, CEPS offered to perform the labor required to install a sump pump in this one manhole if Metro would pay for the materials required. Metro agreed to this proposal, and CEPS is in the process of acquiring materials to perform this work. The installation should be complete in the Second Quarter of FY11. Manholes A and M will not have sump pumps installed at this time.

7. DES066 - First Avenue Manhole Retirement

TEG reviewed the work associated with this project and, due to settlement of the fill in one of the retired manholes, additional fill needs to be added. The work and close out for this project is anticipated during the Second Quarter FY11.

8. DES067 - EDS Tunnel Structural (Rock) Rehabilitation

This project was bid during the Third Quarter FY10. A formal award was made during the Fourth Quarter FY10 and mobilization was planned for the same quarter. This mobilization was delayed due to the flood in May 2010. Work began on this project in the First Quarter FY11. Work is anticipated to require nine months for completion.

9. DES069 - Wildhorse Tempering Station Removal & Relocation to the Municipal Auditorium

This project was completed and closed during the First Quarter FY11.

10. DES073 - MH 18 Platform Extension & Sump Pump Control Modifications

This project was bid and awarded during the First Quarter FY11. It is anticipated that work will begin and be completed during the Second Quarter FY11.

11. DES076 - Manhole S4A Rehabilitation

Preliminary design was completed for the repairs during the Third Quarter FY10. The State had originally requested that repairs not begin until June 2010 since some of the State's fiber optic communications cabling passes through this manhole. During final review of the repair drawings, the State voiced extreme concern about the absence of a secondary communication link if the fiber optics in this manhole were damaged during the rehabilitation. Therefore, the bidding of this project has been delayed. Meetings with the State took place during the First Quarter FY11 concerning the responsibilities between the State and Metro. The State concluded that the structural repair of the manhole is their responsibility, and they are moving forward with the installation of a secondary fiber optic line to replace the fiber optics within this manhole. Once this fiber optic work is complete, work will begin on the manhole structure. It is anticipated that the manhole work will begin in the Third Quarter of FY11.

12. DES077 - Music City Center Service Connection

Excavation began on the service extension to the MCCC during the First Quarter. The completion of the work is anticipated in the spring of 2011 (Third Quarter).

13. DES079 - TN Towers Gold Parking Lot Pavement Repair

This project was closed out during the First Quarter of FY11.

14. DES080 - Misc. Manhole & Tunnel Safety Repairs

As a result of the ongoing review of the manholes and tunnels, some safety items have been noted that require attention. This project was established to address these items.

Manholes 16A, 22B, D2 and D3 require the addition of some safety related items such as handrails, ladder cages etc. Design was started on the addition of these items during the Fourth Quarter FY10. The design is anticipated to be completed during the Second Quarter of FY11 along with its bid and award. Work should then commence during the Third Quarter of FY11.

15. DES081 - Flood Related Repairs

As a result of the flooding in May 2010, some damage occurred to the EDS. Damage resulted in Manhole L located at Riverfront Park due to the required shut down and subsequent cooling of the steam system along with damage to components within the Broadway and 4th Avenue tunnels and damage to a metering station within the Nashville Symphony. This work was completed during the First Quarter FY11. The cost substantiation was reviewed with FEMA, and Metro will receive a partial reimbursement of these costs. The remaining costs will be covered by a special fund established by the City. This project is in its final stages of cost review and substantiation and is anticipated to be closed out during the Second Quarter FY11.

16. DES082 - Andrew Jackson Bldg Steam Isolation Valve Replacement

A leak developed at an instrument tap at the Andrew Jackson Building on the steam supply piping. During the review of the needed repairs, it was noted that a primary steam isolation valve for this building was installed in a vertical portion of piping which presents a potential safety hazard. Therefore, this valve will be replaced and relocated to provide a safer installation. This work began during the First Quarter of FY11 and is anticipated to be completed during the Second Quarter FY11.

B. First Quarter FY11 Closed Projects

Three projects were closed during the First Quarter FY11: DES 062, DES 069, and DES 079.

C. Capital Projects Budget

The following table summarizes the costs and remaining balance of the DES capital projects based on reported expenditures at the end of the First Quarter FY11. Open projects or completed projects that require some additional management are shown. Total costs for projects that are closed are shown with a gray highlight. Since the remaining funds from the 2002A bond have been consumed, the previous projects associated with this bond are no longer noted in the following table. The 2008 Bond fund is also depleted and the projects associated with it are also not shown.

Table 5. First Quarter FY11 Capital Projects Budget Summary

DES Project #	Description	Total Budget	FY11 Spending to Date	Total Spent to Date	Remaining Balance
2005B Bond Projects					
DES064	Spring 09 Steam Shutdown	\$ -	\$ -	\$ 950.19	\$ (950.19)
DES063	Sump Pump MH B and M	\$ -	\$ 548.50	\$ 5,742.18	\$ (5,742.18)
DES056	Citizen's Plaza Steam and Condensate	\$ -	\$ -	\$ 251.93	\$ (251.93)
DES057	Manhole 13	\$ -	\$ -	\$ 176.87	\$ (176.87)
DES061	Tunnel Steel Corrosion	\$ -	\$ 1,140.98	\$ 9,197.99	\$ (9,197.99)
DES073	MH 18 Condensate and Platform Exp	\$ -	\$ -	\$ 12,655.73	\$ (12,655.73)
Total Closed Projects		\$ 7,320,301.40	\$ 291.52	\$ 6,748,102.36	\$ 572,199.04
Project Development		\$ 866,198.60	\$ 6,891.00	\$ 315,570.26	\$ 543,737.34
Total 2005B Bond		\$ 8,186,500.00	\$ 8,872.00	\$ 8,063,381.56	\$ 123,118.44
2007 Bond Projects					
Total Closed Projects		\$ 2,374,348.00	\$ -	\$ 2,620,770.53	\$ (246,422.53)
Project Development		\$ 484,152.00	\$ -	\$ -	\$ 484,152.00
Total 2007 Bond		\$ 2,858,500.00	\$ -	\$ 2,620,770.53	\$ 237,729.47
2010 Bond Projects					
DES059	CJC Steam & Cond Ser. Line Replace.	\$ 150,000.00	\$ 64.90	\$ 3,128.57	\$ 146,871.43
DES062	Stm and Cnd Line MHK to Wildhorse	\$ 300,000.00	\$ -	\$ 240,670.01	\$ 59,329.99
DES066	First Ave MH Abandonment	\$ -	\$ 97.35	\$ 1,493.89	\$ (1,493.89)
DES067	Tunnel Rock Repair	\$ 1,152,000.00	\$ 3,860.84	\$ 23,496.32	\$ 1,128,503.68
DES068	St. Mary's Cond Tempering Station	\$ 20,000.00	\$ -	\$ 38,121.57	\$ (18,121.57)
DES069	Municipal Aud Tempering Station	\$ 25,000.00	\$ 259.60	\$ 4,585.92	\$ 20,414.08
DES070	MH 6 to 23 Cond Line	\$ 300,000.00	\$ -	\$ 526.62	\$ 299,473.38
DES071	Hermitage Hotel Ser Modifications	\$ 125,000.00	\$ -	\$ 1,119.07	\$ 123,880.93
DES072	Sheraton Stm & Cond Line	\$ 250,000.00	\$ -	\$ 31.38	\$ 249,968.62
DES073	MH 18 Condensate and Platform Exp	\$ -	\$ 2,060.67	\$ 2,810.24	\$ (2,810.24)
DES075	2010 CHW Outage	\$ -	\$ -	\$ -	\$ -
DES076	MH S4A Rehabilitation	\$ -	\$ 2,290.48	\$ 2,972.03	\$ (2,972.03)
DES077	Music City Convention Center Design	\$ -	\$ 29,607.83	\$ 131,669.67	\$ (131,669.67)
Total Closed Projects		\$ -	\$ -	\$ -	\$ -
Metro Project Admin		\$ -	\$ -	\$ -	\$ -
Project Man, Development, etc		\$ 88,000.00	\$ -	\$ -	\$ 88,000.00
Total 2010 Bond		\$ 2,410,000.00	\$ 38,241.67	\$ 452,875.28	\$ 1,957,124.72

V. Energy Distribution System Repairs, Improvements, PM and Emergencies

Several EDS repairs and improvements were made during the First Quarter. The principle items for discussion are presented in the following sections.

A. Repairs and Improvements

Several repairs were made to the EDS and at customer buildings during the quarter. The remaining value of the R&I budget at the end of the current quarter is \$546,254. Table 6 provides a summary of the FY11 expenditures and revenues to date associated with the R&I budget.

Table 6. Repair and Improvements Expenditure and Revenue Summary

Description	Date	Tracking #	Vendor	Expenditure	Transfers	Net Market Adjustment	Market Value	Balance
"Market Value" and "Cost Value" at end of FY10						\$ (7.36)	\$ 493,424.22	\$ 493,424.22
Transfer to General Account	07/08/10			\$ 6,682.81				
Constellation Energy - Period 5/1/10 - 5/31/10 (EDS Repair)	06/30/10	DES-1196	CEPS	\$ 613.67				
Constellation Energy - Period 6/1/10 - 6/30/10 (EDS Repair)	06/30/10	DES-1203	CEPS	\$ 1,399.60				
Overpayment Credit	08/12/10	-	-	\$ (1,019.45)				
Constellation Energy - Period 7/1/10 - 7/31/10 (EDS Repair)	09/13/10	DES-1224	CEPS	\$ 1,268.79				
Sub-Total First Quarter				\$ 8,945.42	\$ 61,775.01	\$ -	\$ 52,829.59	\$ 52,829.59
Sub-Total Second Quarter				\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Third Quarter				\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Fourth Quarter				\$ -	\$ -	\$ -	\$ -	\$ -
FY11 Year to Date				\$ 8,945.42	\$ 61,775.01	\$ -	\$ 546,253.81	\$ 546,253.81

B. Preventive Maintenance

Preventive maintenance, tunnel and manhole inspections and reviews of customers' mechanical rooms were performed during the quarter. The principle items for discussion are presented.

1. EDS Tunnel and Manhole Inspections
 - a. Rock continues to be in need of repair in the ceilings in the tunnels under Broadway, 4th Avenue and 7th Avenue. The Tunnel Rock Rehabilitation project began during the First Quarter FY11 and is scheduled to take nine months to complete.
 - b. Some leaks were found during the quarter and continue to be monitored.

- c. Minor repairs were made during the quarter.
- 2. State Tunnel Inspections
 - a. A leak was found during the quarter and is scheduled for further monitoring.
 - b. The tunnel radio system is currently non-operational. State personnel have been notified.
 - c. Other minor repairs were made during the quarter.
- 3. Other EDS Inspections
 - a. The thermographic surveys performed did not reveal any additional hot spots during the quarter.
 - b. Other minor items are included in the CEPS monthly reports.

C. Emergencies

No emergencies were reported during the quarter.

D. EDS Walk-through

Due to schedule conflicts, the primary EDS walkthrough was conducted on several different days, September 23, October 4, October 25 and October 26, 2010, by Jon Belcher, PE of TEG. The manholes visited included MH 1, 2, 3, 4, 5, 6, 9, 10, 13, 18A, D, K, N1, N2, S5 and S6. The following comments and observations are a result of these visits:

- 1. Manhole 1
 - a. There is some spalling of the concrete walls and ceiling; these areas need to be repaired. TEG will develop a methodology for this to be repaired under the annual R&I budget.
 - b. Some of the anchor bolts which hold the access ladder to the wall are loose or absent. This presents a potential safety hazard and need to be repaired, replaced or new bolts need to be installed as soon as possible.
 - c. The branch steam piping, which once served Washington Square, includes a flanged gate valve. This valve's flange has numerous injection points indicating that the flange has leaked in the past. During the next system shut-down, this valve should be replaced with a welded cap to avoid a potential emergency shut down.
- 2. Manhole 2
 - a. There was a large amount of water present in this manhole and required pumping before entry.
 - b. The manhole was extremely hot. The asphalt surrounding the two manways was soft and depressions due to traffic loads have

developed in these areas. It was determined during the review that hot air was coming into the manhole from the open vents in the pre-insulated pipe casing which extends into the manhole. These vents should be plugged to help reduce the heat in the manhole. There is also a small leak on the steam expansion joint in this manhole contributing to the heat that should be repaired. The soft asphalt surrounding the manways should be monitored.

- c. There are areas of the walls and roof where concrete has fallen off due to spalling. These areas need to be repaired. TEG will develop a methodology to pay for the necessary repairs under the annual R&I budget.

3. Manhole 3

- a. There was water present in this manhole and required pumping before entry.
- b. Several of the steel structural components in the manhole need to be replaced. Structural steel components that do not need to be replaced should be painted to prevent further corrosion. This manhole is a “High” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair” project list.
- c. A weld on the anchor plate for the steam piping has broken loose. Even though the structural steel needs to be replaced, this weld should be repaired until the replacement occurs.

4. Manhole 4

- a. There was water present in this manhole and required pumping before entry.
- b. Several of the steel structural components in this manhole need to be replaced, and the remaining components need to be cleaned and painted. This manhole is a “High” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair” project list.

5. Manhole 5

- a. There was water present in this manhole and required pumping before entry.
- b. The condensate piping and the anchoring system in this manhole was recently rebuilt. This manhole is in good condition.

6. Manhole 6

- a. There was some water present in this manhole and required pumping before entry.

- b. The steel structural components in the manhole need to be cleaned of all rust and painted to prevent further corrosion. This should be done in the near future to avoid the need to replace any structural components. This manhole is a “High” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair” project list.
 - c. There is a leak at a condensate piping flange connection between the steel piping in the manhole and the ductile iron piping penetrating the manhole wall that should be repaired.
 - d. There is a small leak on the steam expansion joint in this manhole.
 - e. There is some spalling of the manhole’s concrete wall. TEG will develop a methodology to pay for the necessary repairs under the annual R&I budget.
 - f. There is some missing piping insulation, and the steam expansion joint insulation blanket is not completely attached to the expansion joint.
7. Manhole 9
- a. The manhole is in good condition.
 - b. There has been some water seepage around the linkseals for the water line which passes through this manhole. The linkseals should be adjusted/tightened to eliminate this seepage.
8. Manhole 10
- a. There was some water present in this manhole and required pumping before entry. The water is green in color indicating that there is a chilled water leak in the area. CEPS is aware of this condition and has contracted to have some exploratory excavations done to try and locate and repair the leak.
 - b. The steel structural components in the manhole need to be cleaned of all rust and painted to prevent further corrosion. This manhole is a “Moderate” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair” project list.
 - c. There is some cracking and spalling of the existing concrete inside the manhole. TEG will develop a methodology to pay for the necessary repairs under the annual R&I budget.
 - d. The steam expansion joint has a small leak which is causing the manhole to be hot.
 - e. There is a condensate leak in the manhole which is contributing to the heat in the manhole and to the accumulation of water. This leak should be located and repaired as soon as possible.

9. Manhole 13
 - a. There was water present in this manhole and required pumping before entry.
 - b. A main steam valve is leaking at its flanges in the manhole. The replacement of this valve will require the isolation and shut-down of the northeastern portion of the steam distribution system. With the winter months approaching, this valve should be replaced as soon as possible with a butt welded gate valve. The piping alignment should be checked when this work takes place.
 - c. The steel structural components in the manhole need to be cleaned of all rust and painted to prevent further corrosion; some components may require replacement. There is also some severe spalling of the concrete in this manhole. This manhole is a “High” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair” project list.

10. Manhole 18A
 - a. There was water present in the manhole and was pumped prior to entry.
 - b. This manhole is in good condition.

11. Manhole D
 - a. There was water present in this manhole and required pumping before entry.
 - b. The steel structural components in the manhole need to be cleaned of all rust and painted to prevent further corrosion. Some corrosion is severe. This manhole is a “High” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair” project list.
 - c. There is some minor spalling of concrete on the manhole ceiling. TEG will develop a methodology to pay for the necessary repairs under the annual R&I budget.

12. Manhole K
 - a. There was some water present in this manhole (~1" deep).
 - b. There is some minor corrosion on the structural components in this manhole. This manhole is a “Low” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair” project list.

13. Manhole S5
 - a. This manhole is part of the State’s distribution system.
 - b. There was water present in this manhole and required pumping.

- c. There is some degradation to the insulation in this manhole. This manhole should be listed as a “Low” priority on the Manhole Insulation priority list developed by CEPS.
14. Manhole S6
 - a. This manhole is part of the State’s distribution system.
 - b. This is an extremely small manhole, and there are no valves or serviceable equipment in it.
 15. Manhole N1
 - a. This manhole only houses chilled water piping and valves and is in good condition.
 16. Manhole N2
 - a. This manhole is located at the Titan’s Stadium and only houses chilled water piping and valves.
 - b. There was some water in this manhole.

VI. Customer Relations

This section contains descriptions of the marketing efforts made by the DES Team during the quarter. The topics of interactions, meetings and training seminars with the customers are also discussed. There are currently 27 customers, comprised of 40 different buildings, connected to the EDS. Service to each of these buildings continues to prove satisfactory, and the responsiveness to customer issues is handled by CEPS in an excellent and professional manner.

A. Marketing

TEG and Metro DES continue to monitor and remain involved with the progress associated with the development of the new Music City Convention Center (MCCC). Construction for this project began in the First Quarter FY11 and is expected to be completed by the spring of 2011.

B. Customer Interaction

- Several customers reported issues with either their in-building heating or cooling systems. These issues were addressed by the CEPS customer service representative (CSR). In most cases, the issues related to failed customer equipment or the improper control of the building system. Several metering or electrical issues also occurred during the quarter that affected the recording of several customers’ billing data.

- CEPS personnel assisted the State Supreme Court building engineer in cleaning the strainer on the chilled water supply to the building.
- CEPS assisted the Sheraton Hotel in making some minor changes to the chilled water control system to improve the performance of their system.
- Due to new found leaks in the isolated steam service to the 401 Union building, CEPS isolated the steam service from MH-4 in August.
- The condensate line outside of the Criminal Justice Center was repaired during September. This line had been the source of previous hot spots on the thermographic surveys conducted by CEPS monthly.
- Other minor issues and customer interactions are noted in the monthly CEPS reports.

VII. Recommendations

Based on the review of the First Quarter EGF and EDS operations, the following recommendations are made.

- The repair of the cracks in the west wall of the EGF, as noted in the EGF Walk-through, should be addressed. The recommendations by Mr. Stoneburg should be implemented. These recommendations include:
 - All of the existing cracks exposed to weather should be sealed with an injection epoxy (Crack-Pac by Simpson Strongtie or similar) to reduce the amount of water penetration into the concrete.
 - The spalling of existing cracks should be repaired using a concrete repair compound (SikaRepair 223 by Sika or similar).
 - For locations of spalling caused by embedded shale, the shale pieces should be completely removed and the location repaired using a concrete repair compound (SikaRepair 223 by Sika or similar).
- Safety items noted in the EDS Walk-through should be addressed.
- Cleaning, painting, replacement and repair of structural steel within manholes to reduce or eliminate corrosion has been assigned a capital project number of DES061. Repairs began in the Fourth Quarter FY10 and will be ongoing in a similar method to the Insulation Repair Project (DES060).
- Insulation which is not present or in disrepair within the manholes should be addressed through either additional capital projects, which include work within these manholes, or through DES060.