Metro Nashville
DISTRICT ENERGY SYSTEM

Operations Monitoring Report

Fourth Quarter FY14

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I. Executive Summary

A review of the fiscal year 2014 (FY14) Fourth Quarter performance and contract obligations between Constellation New Energy (CNE) 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 2014 to date, CNE has satisfactorily met all of the contract obligations to Metro and has had no contract violations.

For the Fourth Quarter FY14, the chilled water sales decreased approximately 4.5% over the previous Fourth Quarter (FY13). The Fourth Quarter FY14 saw an increase in cooling degree days by approximately 15% due to a warmer than usual June. The peak chilled water demand for the current quarter was 18,277 tons, which is 1.5% higher than the previous Fourth Quarter. For the fiscal year 2014, the chilled water sales were down 1.2% from FY13 even though the number of cooling degree days was 1.5% higher in FY14.

Steam sendout for the current quarter decreased by approximately 8% over the previous Fourth Quarter, marked by a decrease in the number of heating degree days by approximately 32%. Likewise, steam sales also decreased by approximately 10% over the previous Fourth Quarter. Steam system losses, as a percentage of sendout, decreased, and the total losses decreased marginally over the previous Fourth Quarter. The peak steam demand for the current quarter was 102,344 pounds per hour, which represents a decrease in the Fourth Quarter demand by approximately 2%. For FY14, the steam sendout was approximately 7% higher than in FY13, and sales were 9.5% higher, which is reflected in a cooler than normal winter having 11% more heating degree days than in FY13.

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 but increased from the previous Fourth Quarter. The steam plant electric consumption decreased approximately 7.7% over the previous Fourth Quarter, but the amount of electricity per unit of sales increased by approximately 2%. The steam plant fuel efficiency has decreased approximately 1.5% from the previous Fourth Quarter. The total water consumption for the steam and chilled water plants increased approximately 3.2% from the previous Fourth Quarter marked by a 26% increase in the EDS make-up for the chilled water system and a 21% increase in the steam plant usage.

For FY14, the electric consumption for the chilled water plant remained approximately the same as in FY13 while the steam electric consumption increased 8.2%. The total plant water usage also remained approximately the same as in FY13, but the EDS make-up increased 36% and the steam usage decreased approximately 16%. The boiler plant fuel usage increased by approximately 2.5% but the steam sales increased 9.5%.

Work continued on DES Capital and Repair & Improvement Projects during the Fourth Quarter of FY14. Phase I of the modifications to the in-building chilled water system at the Metro

Courthouse (DES-106) were completed during the quarter with Phase II anticipated to be completed during the winter months. Repair and Improvements to the EDS continue as scheduled.

The current fiscal year system operating costs to date are $19,723,343. This value represents approximately 91.1% of the total budgeted operating cost for FY14. The customer revenues from the sales of steam and chilled water for FY14 (to date) are $18,526,227 which is approximately 94.1% of the budgeted amount. The difference between the operating costs and customer revenue is the Metro funding amount (MFA), which represents the shortfall in cash flow for the system. The MFA transferred to date for FY14 is $1,958,300 (100% of budget). However, the actual MFA required cannot be accurately calculated due to outstanding invoices.

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Table of Contents

Section	Description	Page
I.	Executive Summary	i
II.	Energy Distribution System Sales and Performance	1
	A. Chilled Water	1
	1. Sales and Sendout	1
	2. Losses	2
	3. Performance	3
	B. Steam	4
	1. Sales and Sendout	4
	2. Losses	5
	3. Performance	6
	C. Contract Guarantee Performance	8
	D. Operating Costs	10
III.	EGF Operations	12
	A. Reliability	12
	B. Efficiency	12
	C. Environment, Health and Safety	12
	D. Personnel	13
	E. Training	13
	F. Water Treatment	13
	G. Maintenance and EGF Repairs	14
	H. EGF Walk-through	14
IV.	Capital Projects	14
	A. Fourth Quarter FY14 Open Projects	15
	B. Fourth Quarter FY14 Closed Projects	16
	C. Capital Projects Budget	16
V.	Energy Distribution System Repair, Improvements, PM and Emergencies	16
	A. Repairs and Improvements	16
	B. Preventive Maintenance	17
	C. Emergencies	17
	D. EDS Walk-through	17
VI.	Customer Relations	24
	A. Marketing	24
	B. Customer Interaction	24
VII.	Recommendations	24

II. Energy Distribution Sales and Performance

A. Chilled Water

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.

1. Sales and Sendout

A comparison for the Fourth Quarter chilled water sales is shown in Figure 1. This data reflects a 4.5% decrease in sales for the current quarter over the same quarter of the previous fiscal year.

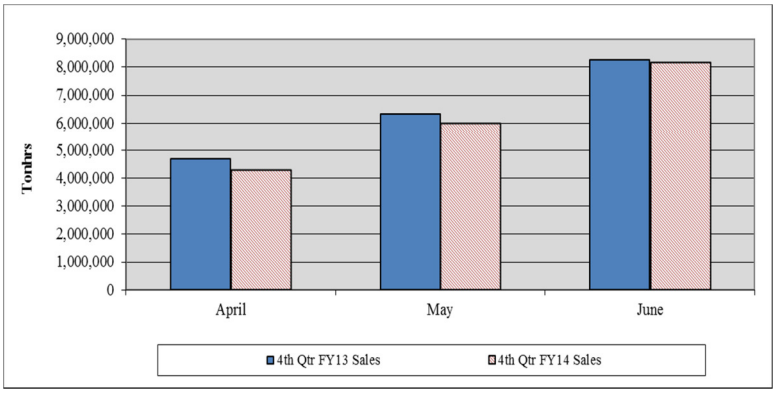

Figure 1. Fourth Quarter FY14 Sales Comparison

The peak chilled water demand for the current quarter was 18,277 tons, which represents a 1.5% increase over the previous Fourth 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.

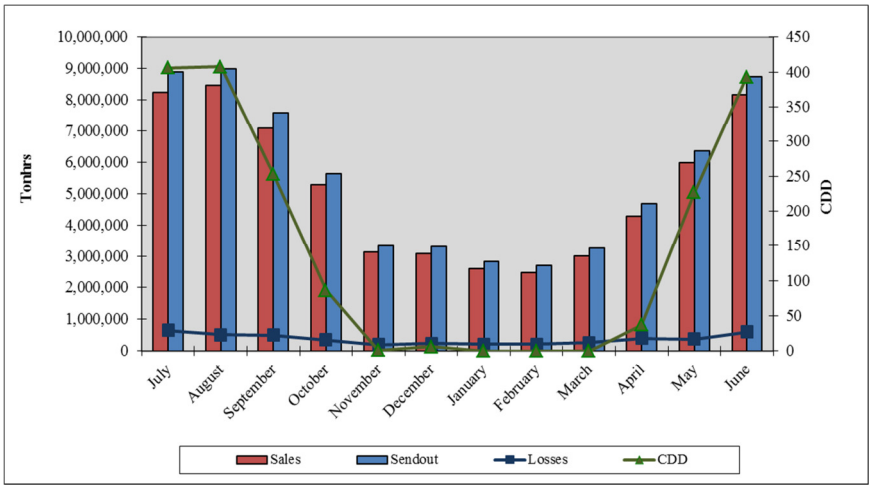

Figure 2. Chilled Water Sales, Sendout, Losses and CDD for the Previous Twelve Months

2. Losses

A comparison of the total, chilled water energy losses in the EDS for the Fourth Quarter is shown in Figure 3. These losses are the difference in chilled water sendout and sales.

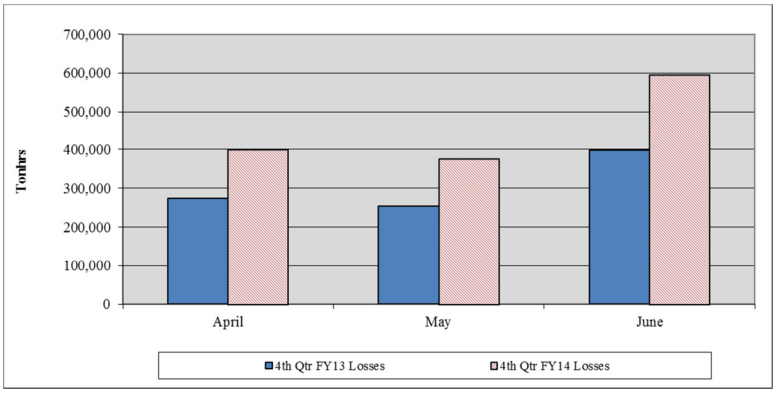

Figure 3. Chilled Water System Loss Comparison for the Fourth Quarter FY14

The EDS make-up increased by approximately 26% over the previous Fourth Quarter despite numerous attempts by CNE to locate the source of the water leaks. However, the total EDS water usage represents only a small part of the total EGF water usage for the quarter.

The total energy losses have increased by approximately 48% over the previous Fourth Quarter. The make-up to the cooling towers increased marginally during the quarter. The number of cycles of concentration in the condensing water

circuit experienced a 7.6% decrease during the current Fourth. The overall city water make-up comparison for the chilled water system is shown in Figure 4.

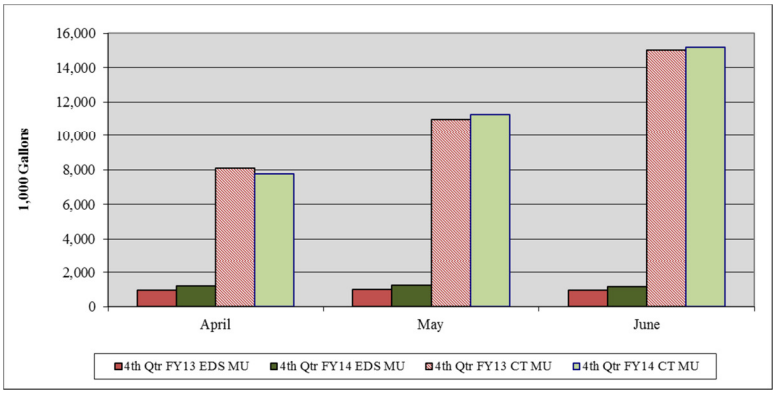

Figure 4. Chilled Water System City Water Usage Comparison

3. Performance

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

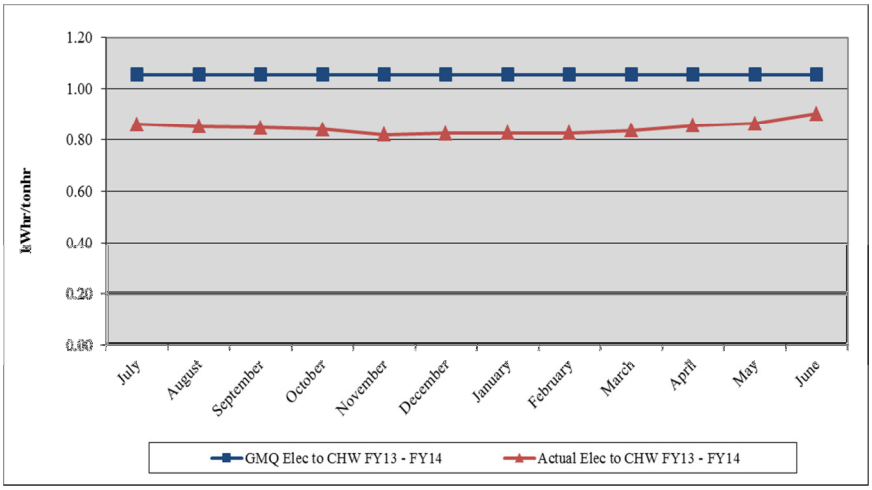

Figure 5. Chiller Plant Electric Performance Guarantee Comparison for the Previous Twelve Months

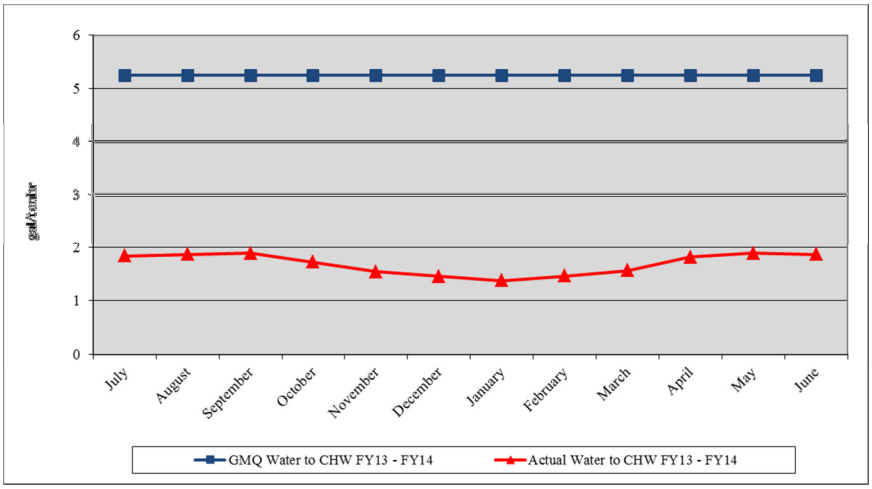

Figure 6. Chiller Plant Water Consumption Performance Guarantee Comparison for the Previous Twelve Months

The chilled water allocation of the electric consumption falls under the GMQ limit of 1.055 kWhr per tonhr 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 2% over the Fourth Quarter for FY13. The actual electric conversion factor increased 6.7% in the quarter to 0.879 kWhr per tonhr.

The actual chilled water plant water conversion factor increased approximately 7.3% over the previous Fourth Quarter. The total consumption of city water for the chiller plant for the current quarter increased approximately 2.5%.

B. Steam

1. Sales and Sendout

The steam sendout decreased by approximately 8% over the previous Fourth Quarter (FY13), and the sales decreased by approximately 9.7% due largely to a decrease in the number of heating degree days. The number of heating degree days decreased by approximately 31.7% over the previous Fourth Quarter. The steam system losses decreased marginally over the previous Fourth Quarter. A comparison for the Fourth Quarter steam sales is shown in Figure 7.

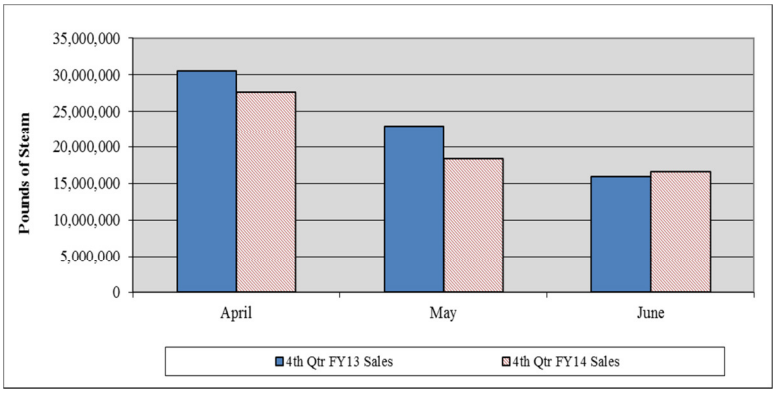

Figure 7. Steam Sales Comparison for the Fourth Quarter FY14

The peak steam demand for the current quarter was 102,344 pph, which reflects an approximate 2% decrease in the peak steam production over the previous Fourth.

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.

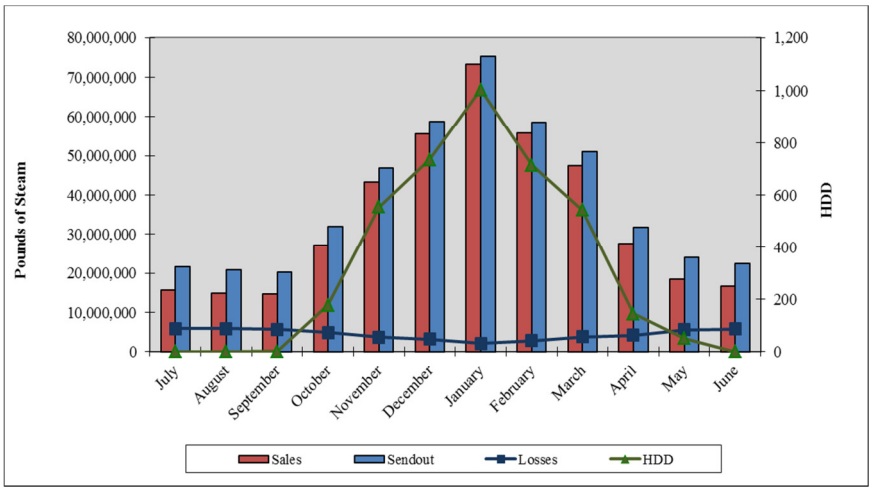

Figure 8. Steam Sales, Sendout, Losses and HDD for the Previous Twelve Months

2. Losses

A comparison of the total steam mass losses in the EDS for the Fourth 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.

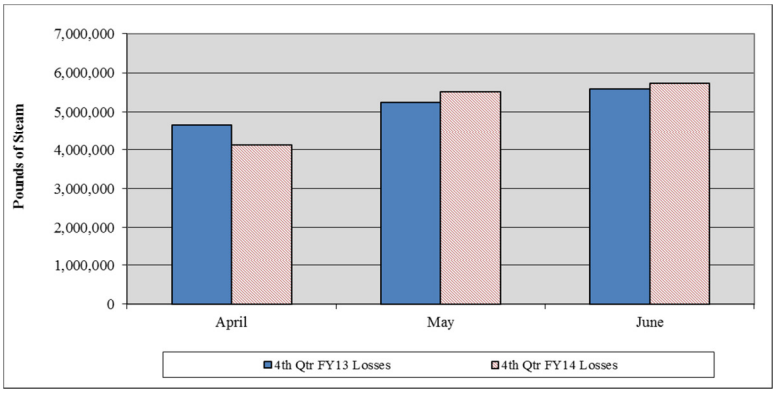

Figure 9. Fourth Quarter FY14 Steam System Losses

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 Fourth Quarter data in Figure 10.

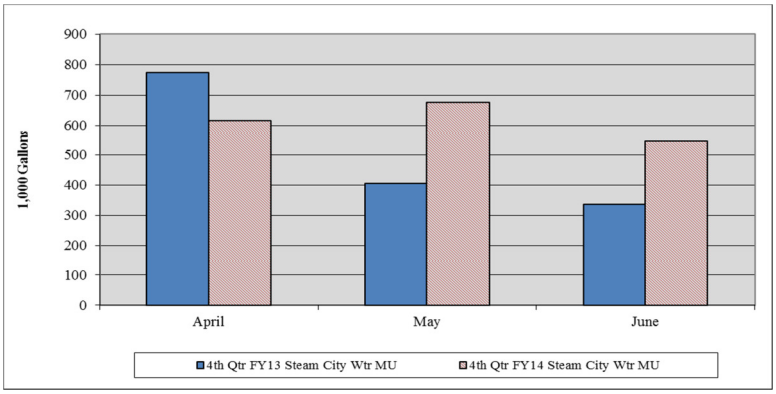

Figure 10. Fourth Quarter FY14 Steam System City Water Make-up Comparison

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 CNE, the System Performance Guarantee levels as described in the ARMA are being achieved satisfactorily.

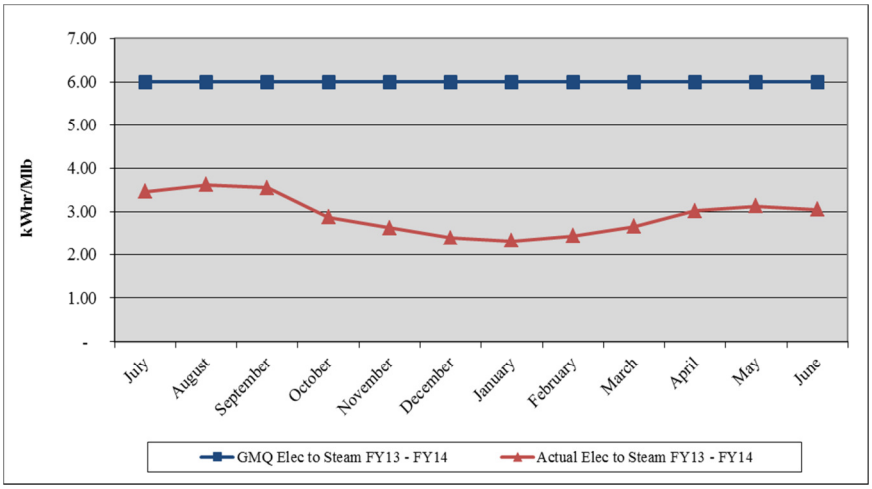

Figure 11. Steam Plant Electric Performance Guarantee for the Previous Twelve Months

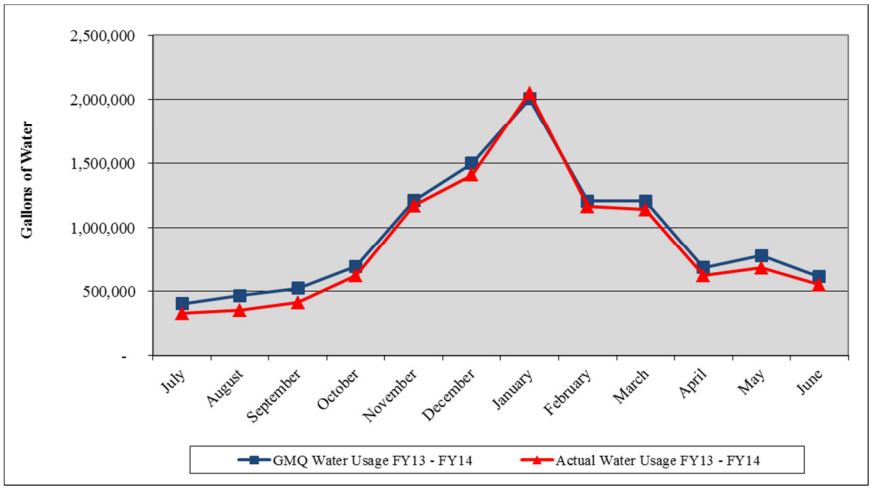

Figure 12. Steam Plant Water Performance Guarantee for the Previous Twelve Months

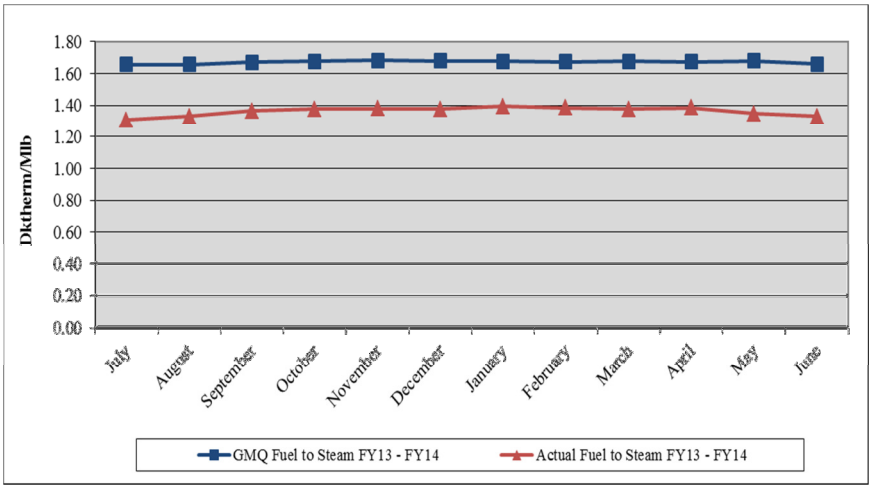

Figure 13. Steam Plant Fuel Performance Guarantee for the Previous Twelve Months

The current quarter experienced a 7.7% decrease in the steam plant electric consumption while experiencing a 2% increase in the electric conversion factor. The water consumption for the steam plant increased 21% this quarter as compared to the previous Fourth 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 decreased 1.5% 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 and the complete fiscal year. Additional parameters, such as cooling tower blow-down and peak demands are listed in this table, as well. Table 2 presents the Fourth Quarter comparisons of the Guaranteed Maximum Quantities (GMQ) of the criteria commodities (fuel, water and electricity).

Table 1. Fourth Quarter and Annual FY14 Production, Sales and Consumption Summary

Item	Unit	Fourth Quarter FY14	Fourth Quarter FY13	*Percent Difference		Total Year FY14	Total Year FY13	*Percent Difference
	days	91	91	0.00%		365	365	0.00%
Total Electric Use	kWhrs	16,370,976	16,069,747	1.87%		53,819,881	53,700,006	0.22%
Chilled Water	kWhrs	16,179,529	15,862,373	2.00%		52,713,452	52,677,334	0.07%
Steam	kWhrs	191,447	207,374	-7.68%		1,106,429	1,022,672	8.19%
Total Water Use	kgal	39,715	38,485	3.20%		133,842	134,544	-0.52%
Total Chilled Water	kgal	37,878	36,969	2.46%		123,452	122,208	1.02%
EDS Make-up	kgal	3,653	2,899	26.01%		14,788	10,873	36.01%
Cooling Towers	kgal	34,225	34,070	0.45%		108,668	111,335	-2.40%
Calc CT Evaporation	kgal	29,573	29,747	-0.58%		95,288	94,790	0.53%
CT Blowdown	kgal	4,652	4,323	7.61%		13,380	16,545	-19.13%
Calc # Cycles		6.36	6.88	-7.62%		7.12	5.73	24.30%
Steam	kgal	1,837	1,516	21.17%		10,390	12,336	-15.77%
Total Fuel Use	mmBTU	105,990	113,573	-6.68%		635,611	620,241	2.48%
Natural Gas	mmBTU	105,990	143,548	-26.16%		627,657	619,936	1.25%
Propane	mmBTU	0	25	n.a.		7,954	305	2507.87%
Condensate Return	kgal	7,762	8,887	-12.66%		46,971	41,990	11.86%
	lbs	63,304,893	72,480,223	-12.66%		383,085,169	342,460,452	11.86%
Avg Temp	°F	176.0	174.3	0.96%		171.4	169.3	1.28%
Sendout								
Chilled Water	tonhrs	19,783,100	20,199,000	-2.06%		66,268,200	65,404,588	1.32%
Steam	lbs	78,026,000	84,860,000	-8.05%		463,085,000	433,527,000	6.82%
Peak CHW Demand	tons	18,277	18,008	1.49%		18,277	18,008	1.49%
Peak Steam Demand	lb/hr	102,344	104,563	-2.12%		170,031	124,156	36.95%
CHW LF		49.56%	51.36%	-3.50%		41.39%	41.46%	-0.17%
Steam LF		34.91%	37.16%	-6.06%		31.09%	39.86%	-22.00%
Sales								
Chilled Water	tonhrs	18,409,647	19,272,990	-4.48%		61,768,221	62,537,600	-1.23%
Steam	lbs	62,670,106	69,384,222	-9.68%		410,083,610	374,366,126	9.54%
Losses								
Chilled Water	tonhrs	1,373,453	926,010	48.32%		4,499,979	2,866,988	56.96%
Steam	lbs	15,355,894	15,475,778	-0.77%		53,001,390	59,160,874	-10.41%
		19.68%	18.24%	7.92%				
Degree Days								
CDD		657	572	14.86%		1,817	1,791	1.45%
HDD		194	284	-31.69%		3,921	3,532	11.01%

*positive percent difference values imply an increase from FY13 to FY14

Table 2. Fourth Quarter and Annual FY14 Performance Guarantee Comparison for Steam and Chilled Water

GMQ Calculations	Unit	Fourth Quarter FY14	Fourth Quarter FY13	*Percent Difference		Total Year FY14	Total Year FY13	*Percent Difference
Steam								
GMQ Elec Conversion	kWhr/Mlb	6.00	6.00			6.00	6.00	
Electric Conversion	kWhr/Mlb	3.05	2.99	2.21%		2.70	2.73	-1.23%
GMQ Plant Efficiency	Dth/Mlb	1.671	1.663			1.673	1.688	
Plant Efficiency	Dth/Mlb	1.358	1.338	1.50%		1.373	1.431	-4.06%
Actual %CR		81.13%	85.41%	-5.01%		82.72%	78.99%	4.72%
Avg CR Temp	°F	176	174	0.96%		171	169	1.28%
GMQ Water Conversion	gal	2,075,721	1,745,587			11,280,223	12,840,664	
Water Conversion	gal	1,855,370	1,531,160	21.17%		10,493,900	12,459,360	-15.77%
Chilled Water								
GMQ Elec Conversion	kWhr/tonhr	1.055	1.055			1.055	1.055	
Electric Conversion	kWhr/tonhr	0.879	0.823	6.78%		0.853	0.842	1.32%
GMQ Water Conversion	gal/tonhr	5.25	5.25			5.25	5.25	
Water Conversion	gal/tonhr	2.06	1.92	7.26%		2.00	1.95	2.28%

*positive percent difference values imply an increase from FY13 to FY14

D. Operating Costs

The fixed operating costs for the DES include the management fee to CNE, debt service payments on the bonds and engineering and administration costs and are charged to the customers relative to their contract demand. The variable costs are dependent on the amounts of steam and chilled water produced and sold to the customers. These latter costs 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 system operating costs for FY14 to date are $19,723,343. This value represents approximately 91.1% of the total budgeted operating cost for FY14 and includes expenses to date that have been invoiced but were not paid at the time of this report. Additional invoices that would be charged to the Fourth Quarter have not been issued or paid at the time of this report. The customer revenues from the sales of steam and chilled water for FY14 are $18,526,227 which is approximately 94.1% of the budgeted amount. The MFA transferred to date is $1,958,300 (100% of budget). However, the actual MFA required cannot be accurately calculated due to the outstanding invoices.

Table 3. DES Expenses and Revenues to Date

Item		FY14 Budget	First Quarter Expenses	Second Quarter Expenses	Third Quarter Expenses	Fourth Quarter Expenses	Total Spending to Date	% of Budget
Operating Management Fee								
FOC:	Basic	$ 4,364,800	$ 1,061,719	$ 1,061,719	$ 1,061,719	$ 1,061,719	$ 4,246,876	97.30%
	9th Chiller	$ 40,500	$ 9,949	$ 9,949	$ 9,949	$ 9,949	$ 39,794	98.26%
	C/O 6A	$ 80,000	$ 19,641	$ 19,641	$ 19,641	$ 19,641	$ 78,565	98.21%
	C/O 6B	$ 70,100	$ 17,195	$ 17,195	$ 17,195	$ 17,195	$ 68,781	98.12%
	C/O 7	$ 28,100	$ 6,478	$ 6,478	$ 6,478	$ 6,478	$ 25,911	92.21%
	C/O 8	$ -						
Pass-thru Charges:	Chemical Treatment	$ 224,100	$ 34,745	$ 33,000	$ 36,490	$ 34,745	$ 138,981	62.02%
	Insurance	$ 30,300	$ -	$ -	$ -	$ 33,786	$ 33,786	111.50%
Marketing:	CES Sales Activity	$ -	$ -	$ -	$ -	$ -	$ -	n.a.
	Incentive Payments	$ -	$ -	$ 1,034	$ 3,102	$ 3,102	$ 7,238	n.a.
FEA:	Steam	$ -	$ 21,479	$ 41,455	$ 73,223	$ 27,837	$ 163,994	n.a.
	Chilled Water	$ -	$ 177,131	$ 76,916	$ 61,059	$ 111,874	$ 426,980	n.a.
Misc:	Metro Credit	$ -	$ (206,198)	$ (116,755)	$ (90,376)	$ (137,720)	$ (551,050)	n.a.
	ARFA	$ -	$ 15,420	$ 15,420	$ 15,420	$ 15,420	$ 61,679	n.a.
	Deferral	$ -	$ -	$ (81,651)	$ (134,282)	$ (139,711)	$ (355,644)	n.a.
	Subtotal - Man Fee =	**$ 4,837,900**	**$ 1,157,558**	**$ 1,084,400**	**$ 1,079,617**	**$ 1,064,314**	**$ 4,385,890**	**90.66%**
Reimbursed Management Fee + Chem Treatment			$ 1,366,591	$ 1,205,025	$ 1,172,829	$ 1,167,594	$ 4,912,038	0.00%
Metro Costs								
Pass-thru Charges:	Engineering	$ 10,100	$ 112	$ -	$ -	$ 1,849	$ 1,960	19.41%
	EDS R&I Transfers	$ 268,800	$ 67,200	$ 67,200	$ 67,200	$ 67,200	$ 268,800	100.00%
	Metro Marketing	$ 10,000	$ -	$ -	$ -	$ -	$ -	0.00%
	Project Administration	$ 17,500	$ -	$ -	$ -	$ -	$ -	0.00%
	Metro Incremental Cost	$ 530,200	$ 130,862	$ 91,384	$ 109,398	$ 90,802	$ 422,445	79.68%
Utility Costs:	Water/Sewer	$ 714,300	$ 187,860	$ 101,788	$ 76,839	$ 119,889	$ 486,375	68.09%
	EDS Water/Sewer	$ -	$ -	$ -	$ -	$ -	$ -	n.a.
	EDS Electricity	$ -	$ 18,294	$ 14,967	$ 13,547	$ 17,831	$ 64,639	n.a.
	Electricity	$ 6,585,000	$ 2,176,926	$ 782,620	$ 679,836	$ 1,524,367	$ 5,163,750	78.42%
	Natural Gas Consultant	$ 98,300	$ 4,753	$ 5,800	$ 7,360	$ 1,680	$ 19,593	19.93%
	Natural Gas Transport	$ -	$ 41,990	$ 73,520	$ 252,761	$ 58,089	$ 426,360	n.a.
	Natural Gas Fuel	$ 3,057,800	$ 327,008	$ 741,853	$ 1,166,166	$ 483,594	$ 2,718,621	88.91%
	Propane	$ -	$ -	$ -	$ 206,192	$ -	$ 206,192	n.a.
	Subtotal - Metro Costs =	**$11,292,000**	**$ 2,955,003**	**$ 1,879,132**	**$ 2,579,299**	**$ 2,365,301**	**$ 9,778,735**	**86.60%**
	Subtotal - Operations =	**$16,129,900**	**$ 4,112,561**	**$ 2,963,532**	**$ 3,658,917**	**$ 3,429,615**	**$ 14,164,625**	**87.82%**
Debt Service	2012 Bonds	$ 3,476,000	$ 867,688	$ 868,988	$ 868,988	$ 868,988	$ 3,474,650	99.96%
	2005 Bonds	$ 752,300	$ 262,342	$ -	$ 459,907	$ -	$ 722,249	96.01%
	2007 Bonds	$ 215,700	$ -	$ -	$ 215,700	$ -	$ 215,700	100.00%
	2008 Bonds	$ 214,400	$ -	$ -	$ 214,400	$ -	$ 214,400	100.00%
	2010 Bonds	$ 212,100	$ -	$ -	$ 212,100	$ -	$ 212,100	100.00%
	MCCC Fund	$ 748,000	$ -	$ -	$ 748,000	$ -	$ 748,000	100.00%
	Interest Revenue	$ (193,400)	$ (6,747)	$ (6,868)	$ (6,747)	$ (8,442)	$ (28,803)	14.89%
	MIP	$ -	$ -	$ -	$ 423	$ -	$ 423	n.a.
	Oper. Reserve Fund	$ 93,600	$ -	$ -	$ -	$ -	$ -	0.00%
	Subtotal - Capital =	**$ 5,518,700**	**$ 1,123,283**	**$ 862,120**	**$ 2,712,771**	**$ 860,545**	**$ 5,558,719**	**100.73%**
	Total =	**$21,648,600**	**$ 5,235,843**	**$ 3,825,652**	**$ 6,371,687**	**$ 4,290,160**	**$ 19,723,343**	**91.11%**
Customer Revenues								
	Taxes Collected		$ 90,505	$ 72,704	$ 89,179	$ 89,340	$ 341,728	n.a.
	Taxes Paid		$ 89,445	$ 77,599	$ 86,892	$ 89,340	$ 343,276	n.a.
	Penalty Revenues/Credits		$ (39,129)	$ (13,454)	$ (3,889)	$ 1,710	$ (54,763)	n.a.
	Energy Revenues Collected		$ 5,255,091	$ 4,084,421	$ 4,691,285	$ 4,551,741	$ 18,582,537	n.a.
	Revenues =	**$19,690,300**	**$ 5,217,021**	**$ 4,066,072**	**$ 4,689,683**	**$ 4,553,451**	**$ 18,526,227**	**94.09%**
	Metro Funding Amount =	**$ 1,958,300**	**$ 18,822**	**$ (240,419)**	**$ 1,682,004**	**$ (263,291)**	**$ 1,197,116**	**61.13%**

The DES serves 28 customers and 41 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. Customer Revenue Summary to Date

Building	Chilled Water				Steam		
	Total Cost	Consumption (tonhrs/yr)	Unit Cost ($/tonhr)		Total Cost	Consumption (Mlb/yr)	Unit Cost ($/Mlb)
Private Customers	$ 3,375,252	17,511,916	$ 0.1927		$ 1,589,949	97,408	$ 16.3225
State Government	$ 3,304,434	15,262,594	$ 0.2165		$ 2,145,493	122,183	$ 17.5597
Metro Government	$ 5,390,993	28,993,711	$ 0.1859		$ 2,776,421	190,483	$ 14.5757
New Customers	$ 3,131,523	15,991,485	$ 0.1958		$ 1,453,808	114,400	$ 12.7081
Total	**$ 12,070,679**	**61,768,221**	**$ 0.1954**		**$ 6,511,863**	**410,074**	**$ 15.8797**

Total Revenue	**$ 18,582,542**
True-up and Adjustments (Net)	**$ (56,315)**
Net Revenue	**$ 18,526,227**

III. EGF Operations

Items relating to the facility operations presented herein are derived from the monthly reports issued by CNE for FY14. Communication between TEG and CNE continues to be excellent, and CNE 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 a combustion test in May, the boilers tripped offline on two occasions. The lowest recorded header pressure during these trips was 72 psig, but no customer issues were reported.
- Excursions and disruptions in operations that have occurred throughout the year are included in the individual Monthly Operational Reports from CNE.

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 current quarter. 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.

Monthly safety meetings were held on MSDS and Chemical Safety, Fire Protection, Emergency Preparedness and Fire Extinguisher Operation.

CNE continues cross-training its maintenance employees to fill in as relief operators.

D. Personnel

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

E. Training

Staff training for this quarter consisted of the Health and Safety training discussed previously. CNE began cross training maintenance personnel to perform the tasks of the operators at the EGF in case of emergency or need.

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 condensate return averaged approximately 81% of the steam sendout during the quarter which represents a decrease of approximately 5% over the previous Fourth Quarter. The decrease in condensate return was due to finding hardness in the condensate which prompted CNE to begin dumping some of the condensate until the source of the hardness was determined. The source was determined to be from a leaking heat exchanger at a customer building that was isolated and repaired by the customer.
  - The steam system make-up has continued to decrease from previous years due to the repair and maintenance improvements of the EDS except for when hardness or high iron content is found coming from customer buildings.

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

G. Maintenance and EGF Repairs

CNE 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.

- The motor for the fire sprinkler system air compressor was replaced in April.
- The bearings on cooling towers #3, #7 and #4 were replaced.
- The strainer on condensate pump #6 was removed and cleaned.
- A tube leak was repaired on boiler #3.
- The PVC recirculation lines on cooling towers #8 and #12 were repaired.
- Chemical feed pumps were repaired.
- Trane replaced the purge unit on chiller #6B.
- Trane and CNE balanced the chiller condenser flows.
- Other minor repairs and maintenance were made during the quarter and are listed in the monthly reports issued by CNE.

H. EGF Walk-through

A quarterly Walk-through of the EGF was performed on June 30, 2014, by Kevin Jacobs, P.E. with TEG. This review involved a tour of the facility with the primary points of interest and concern noted herein.

- Many of the housekeeping items noted in the previous walk-through have been repaired or resolved.
- Some of the riser pipes in the cooling towers have been painted, but some repairs remain. CNE has dedicated itself to repaint these riser pipes as the tower basins are repaired and the fill is replaced. They estimate a complete restoration of these components over the next couple of winters. Cooling tower #13 showed a significant amount of corrosion which CNE plans on addressing in FY15.
- Other minor items remaining include:
    - Cobwebs have reformed in various places throughout the plant and on motor control center #4 located near the boilers; these should be removed. However, progress has been made in removing these cobwebs.

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

A. Fourth Quarter FY14 Open Projects

The following projects remained open at the end of the Fourth Quarter FY14.

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. This project will remain open and on-going.

2. DES090 – Manhole & Tunnel Insulation Repair (Revised from DES060)

Work associated with this project will be on-going as required.

3. DES091 – Thermal Storage and NES Time of Use Rates

A proposal is expected from a local programmer who may be able to implement the necessary program and programming changes to the CNE invoicing system to facilitate the necessary changes to allow DES to charge the customers their respective time of use rate for electricity used at the EGF.

4. DES 103 – Sheraton Hotel Expanded CHW Service

This project was closed during the Fourth Quarter FY14.

5. DES 106 – Chilled Water Modifications at the Metro Courthouse

Phases I and II of this project were designed during the Fourth Quarter. Phase I includes the addition of drain and back-wash connections at the Metro Courthouse plate and frame heat exchanger. These connections were necessary to facilitate the cleaning and backwashing of the heat exchanger. During the quarter, the chilled water flow rate through the heat exchanger began to decrease significantly. After investigation by TEG and CNE, it was determined that the unit required cleaning, which was performed by building personnel. The connections were added by CNE to assist Metro in future backwashing.

Phase II of this project is anticipated to be implemented during the Second Quarter FY15. This part of the project involves the addition of bypass piping around the heat exchanger to keep the flow of chilled water to the building when the unit is being cleaned in the future. Since this phase of the project will require an extensive shut-down of the building's cooling system, the Work will not begin until after the cooling season is over. The customer will determine if the cost and benefit warrants the installation.

B. Fourth Quarter FY14 Closed Projects

DES-077, 098, 100, 101, 102 and 103 were closed during the Fourth Quarter FY14.

C. Capital Projects Budget

The following table summarizes the costs and remaining balance of the DES capital projects based on reported expenditures to date. 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. Only the funds currently available are shown.

Table 5. Capital Projects Expense Summary

	DES Project #	Description	Total Budget	FY14 Spending to Date	Total Spent to Date	Remaining Balance
2010 Bond Projects						
	DES070	MH 6 to 23 Cond Line	$ 20,000	$ -	$ 527	$ 19,473
	DES071	Hermitage Hotel Ser Modifications	$ 20,000	$ -	$ 1,119	$ 18,881
	DES072	Sheraton Stm & Cond Line	$ 11,000	$ -	$ 10,462	$ 538
	DES091	NES Time of Use Electric Rate	$ 100,000	$ 2,857	$ 64,616	$ 35,384
		Total Closed Projects	$ 1,814,533	$ -	$ 1,814,533	$ -
		Metro Project Admin	$ -	$ -	$ -	$ -
		Project Man, Development, etc	$ 444,467	$ -	$ -	$ 444,467
		Total 2010 Bond	**$ 2,410,000**	**$ 2,857**	**$ 1,891,257**	**$ 518,743**
MCCC Construction Fund						
	DES077	Music City Convention Center Design/Const	$ 545,900	$ -	$ 453,281	$ 92,619
	DES077	MCCC Metering	$ 121,870	$ 10	$ 141,711	$ (19,841)
	DES077	Bell/Clark Construction Fund	$ 4,697,860	$ -	$ 4,267,623	$ 430,237
	DES098	Nashville Hyatt Service Connection	$ 300,000	$ 737	$ 250,294	$ 49,706
	DES100	MH-10 Roof Repair	$ 450,000	$ 419,953	$ 423,490	$ 26,510
	DES101	MH-1 Abandonment	$ 55,000	$ 24,788	$ 34,197	$ 20,803
	DES102	Customer Delta T Control Modifications	$ 30,000	$ 5,720	$ 5,720	$ 24,280
	DES103	Sheraton Metering Modifications	$ 275,000	$ 271,036	$ 271,036	$ 3,964
	DES106	Courthouse CHW Heat Exchanger	$ 10,000	$ 2,726	$ 2,726	$ 7,274
		Sub-Total Closed Projects	$ 686,197	$ -	$ 679,111	$ 7,086
		Metro Project Admin	$ 50,000	$ 17,899	$ 39,413	$ 10,587
		Project Man, Development, etc	$ 1,278,173	$ -	$ -	$ 1,278,173
		Total MCCC Construction Fund	**$ 8,500,000**	**$ 742,869**	**$ 6,568,602**	**$ 1,931,398**

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

Several EDS repairs and improvements were made during the Fourth 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 $208,525. Table 6 provides a summary of the FY14 expenditures and revenues to date associated with the R&I budget.

Table 6. Repair and Improvement Expenditure and Revenue Summary

Description	Date	Tracking #	Vendor	Expenditure	Transfers	Market Adjustment	Market Value	Balance
Value at end of FY13						**$ -**	**$ 51,892.81**	**$ 51,892.81**
May 2013 CNE R&I Services	8/14/2013	DES-1700	CNE	$ 11,540.17				
DES-095 Manhole B2-Vault leak repairs	8/14/2013	DES-1705	CNE	$ 8,825.00				
June 2013 CNE R&I Services	9/3/2013	N/A	CNE	$ 2,700.72				
July 2013 CNE R&I Services	9/23/2013	N/A	CNE	$ 5,974.59				
Sub-Total First Quarter				**$ 29,040.48**	**$ 67,200.00**	**$ -**	**$ 38,159.52**	**$ 38,159.52**
DES-101 Manhole 1	10/29/2013	N/A	CNE	$ 43,300.00				
DES-101 MH1 CNB R&I	10/29/2013	N/A	CNE	$ 3,326.66				
35965 - DES R&I 9/1	11/26/2013	DES-1762	CNE	$ 10,984.48				
August 2013 CNE R&I Services	11/4/2013	DES-1744	CNE	$ 6,379.18				
Sept 2013 CNE R&I Services	12/31/2013	N/A	CNE	$ 2,626.39				
Sub-Total Second Quarter				**$ 66,616.71**	**$ 67,200.00**	**$ -**	**$ 583.29**	**$ 583.29**
Oct 2013 CNE R&I Services	1/22/2014	DES-1787	CNE	$ 4,243.64				
Nov 2013 CNE R&I Services	2/26/2014	N/A	CNE	$ 3,781.88				
Dec 2013 CNE R&I Services	3/21/2014	DES-1811	CNE	$ 1,186.37				
Sub-Total Third Quarter				**$ 9,211.89**	**$ 67,200.00**	**$ -**	**$ 57,988.11**	**$ 57,988.11**
Feb 2014 CNE R&I Services	4/21/2014	DES-1823	CNE	$ 773.92				
Mar 2014 CNE R&I Services	5/29/2014	DES-1832	CNE	$ 5,937.46				
Apr 2014 CNE R&I Services	6/27/2014	DES-1850	CNE	$ 587.57				
Sub-Total Fourth Quarter				**$ 7,298.95**	**$ 67,200.00**	**$ -**	**$ 59,901.05**	**$ 59,901.05**
FY14 Year to Date				**$112,168.03**	**$268,800.00**	**$-**	**$ 208,524.78**	**$ 208,524.78**

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. A more detailed review of the condition of the EDS is presented in sub-section D of this report, "EDS Walk-through."

1. EDS Tunnel and Manhole Inspections
   a. Several traps were found not to be functioning properly; CNE needs to repair or replace these traps as soon as possible.
   b. Structural metal in the vaults and tunnels need to be cleaned and painted.
2. Other EDS Inspections
   a. Minor items are included in the CNE monthly reports.

C. Emergencies

No emergencies were reported during the quarter.

D. EDS Walk-through

Due to schedule conflicts, a walkthrough was not done during the Third Quarter FY14, therefore this quarter's walkthrough combined both the Third and Fourth Quarter reviews of FY14. The walkthroughs were conducted on July 15, 16 and 18, 2014. The manholes that were visited included Manholes A, B, B5, K, L, M, N1, N2, S5, S6, 15, the AA Birch Tunnel, the State Tunnel, the 4th Avenue Tunnel, the 7th Avenue Tunnel and the Broadway Tunnel. The following comments and observations are a result of these visits:

1. Manhole A
   a. There is mud and debris in the floor of this vault. The debris needs to be cleaned out; TEG will talk with CNE regarding the use of a contractor to clean the mud.
   b. Corrosion exists on the piping supports. These supports should be cleaned and painted to prevent additional corrosion. TEG will coordinate with CNE regarding the hiring of a contractor to clean and paint these supports. This vault should be included in the capital project to repair and prevent structural corrosion with a "high" priority rating.
   c. The trap is not functioning and needs to be repaired or replaced. In addition, there is not a strainer ahead of the trap or a check valve after the trap; these components need to be added to the trap piping when the trap is replaced.
   d. The entry ladder needs to be replaced.

2. Manhole B
   a. The insulation and lagging on the condensate isolation valve on the chilled water side of the manhole is in dis-repair; this insulation should be repaired. TEG will coordinate this with CNE.
   b. There is minor damage to the insulation jacketing on the chilled water piping; this should be repaired. TEG will coordinate this with CNE.
   c. Most of the insulation on the steam piping which feeds the Molloy Street steam line on the steam side of Manhole B is absent; it has come off the pipe and is in the floor of the manhole. This piping needs to be re-insulated. TEG will coordinate this with CNE.
   d. Corrosion is present on the piping supports. These supports should be cleaned and painted to prevent additional corrosion. This vault should be included in the capital project to repair and prevent structural corrosion with a "moderate" to "high" priority rating.
   e. The steam trap is not functioning; the trap should be repaired or replaced.
   f. There is mud in the floor of the manhole that should be removed. TEG will coordinate this with CNE.
   g. The ladder in the steam side of the manhole is corroded. The ladder should be cleaned and painted when the piping supports are addressed or replaced.

3. Manhole M
   a. The trap is not functioning; the trap should be repaired or replaced. In addition, there is no strainer ahead of the trap. When the trap is replaced the piping should be changed and a strainer installed upstream of the trap.

b. The link seal on the steam line penetration at the northern wall has been dislodged from the top portion of the pipe. CNE personnel have tried to re-position this linkseal without success. CNE should continue to monitor the linkseal and report if water infiltration or other complications arise.
c. There is some corrosion of the structural components in this manhole. This vault should be included in the capital project to repair and prevent structural corrosion with a "moderate" priority rating.
d. This manhole is extremely warm; CNE personnel should determine the origin of the excessive heat by checking for steam leaks; checking for heat infiltration from the piping wall penetrations, etc.
e. The slip joint insulation blankets in this manhole, by design, leave portions of the joints uninsulated; this might be contributing to the heat gain of the vault. The addition of insulation to these joints should be investigated. TEG will coordinate this with CNE.
f. The ladder should be replaced.

4. Manhole L
   a. John E Green Company (JEG) replaced several trap line globe valves with gate valves. The insulation that needed to be removed was left on the floor of the manhole and the piping remains un-insulated. CNE should address these warranty items immediately. This was noted in the 4th Quarter FY2012 Manhole Review Report dated October 26, 2012 and then again in the 4th Quarter FY2013 Manhole Review Report dated July 23, 2103.
   b. One of the three traps in this manhole was initially not functioning. CNE personnel were able to get it working prior to leaving this manhole.
   c. There is some corrosion of the structural components in this manhole. This vault should be included in the capital project to repair and prevent structural corrosion with a "moderate" rating.

5. Manhole K
   a. There is some mud in the floor of the manhole which was probably left from the May 2010 flood. This mud should be cleaned from the manhole. TEG will coordinate this with CNE.
   b. There is some corrosion of the structural components in this manhole. This vault should be included in the capital project to repair and prevent structural corrosion with a "moderate" rating.
   c. CNE personnel voiced concern about the condition of the interior southern wall at the steam penetration. Pictures from this review were compared with pictures from the last manhole review in July 2013 and no significant difference was detected.

6. Manhole N1
   a. No deficiencies were noted.

7. Manhole N2
   a. No deficiencies were noted.

8. Manhole S5
   a. There is some degradation to the insulation in this manhole. This manhole should be listed as a "Moderate" priority on the Manhole Insulation priority list developed by CNE.
   b. There is some structural distress of the concrete walls of this manhole. As the maintenance of the structure is the responsibility of the State, the structural integrity of the manhole should be monitored so the State can be informed if repairs become necessary. TEG will approach the State about a plan to re-furbish this structure.

9. Manhole S6
   a. Insulation is non-existent. Because of the small amount of piping that could be insulated in this manhole, the small size of the manhole and the absence of any valves or equipment that would require maintenance, it is not practical to insulate this piping.
   b. Because of the lack of serviceable equipment in this manhole, it is not necessary to inspect this manhole on a monthly basis; a yearly inspection would be adequate.

10. Manhole B5
    a. A flange leak at the steam strainer has been repaired. The insulation now needs to be restored on this strainer.
    b. No other deficiencies were noted.

11. Manhole 15
    a. The vent valve on the chilled water piping in this manhole was leaking (dripping). CNE personnel tightened the valve and it slowed the dripping but did not stop it completely. CNE personnel need to install a plug in the end of this valve to prevent this dripping as the water is getting into the pipe insulation.
    b. No other deficiencies were noted.

12. AA Birch Tunnel (includes Manholes D2 and D3)
    a. There are several locations throughout the tunnel which groundwater is entering the tunnel. This infiltration could result in detrimental effects to the tunnel's structural integrity. These tunnel sections have been evaluated by TEG's structural engineer and a solution has been designed. TEG will assemble a bid package to

obtain bids for this work and coordinate it with CNE.

b. The trap at the east end of the tunnel is not functioning – it is "blowing through"; this trap should be repaired or replaced.

13. State Tunnels
    a. There are several lights not working throughout the tunnel. CNE should inform the State and have them replace them.
    b. Several of the support C Channels have minor to moderate corrosion. This should be brought to the attention of the State for remediation.
    c. There are several locations, where the concrete tunnel structure has some minor to moderate cracking, spalling, exposed rusty rebar and/or shifting of roof structures. These problems exist at the following locations within the tunnel: N5, N7, N20, N31, N39, N47, N54, N61, N62, W42, W43, W44, W56, W59, W62, W75, E19, E26, E47, E51, E62, E66 and E69.
    d. There is a pinhole leak on a high pressure condensate welded joint at Column W74. This leak should be repaired. This leak was noted in the 10/29/13 prior report.
    e. The condensate expansion joint at Column W74 is leaking; this joint should be injected with sealant at the earliest convenience.
    f. The trap at Column W75 appears to be "blowing through". This trap should be investigated and repaired or replaced as required.
    g. The trap at Column E1 is not functioning. This trap should be investigated and repaired or replaced as required.
    h. One of the pumps on the condensate duplex pumping unit at Column N19 has a leaking seal and the pump is not functioning. This should be repaired as soon as possible.
    i. There is some mud and debris at the intersection of the west and north tunnel branches; this debris and mud should be removed from the tunnel.
    j. There is a lot of debris at location E1 - E2 that should be removed.
    k. The concrete roof at the southern end of the east tunnel is spalling badly and probably requires replacement. CNE should bring this issue to the State's attention.

14. Manhole 23
    a. Water is present in the entry area of this manhole; the drain needs to be cleaned again.
    b. There is some moderate corrosion in this manhole. This manhole is a "Moderate" priority on the "MH & Tunnel Structural Corrosion Prevention/Repair".
    c. The insulation on the lower portion of the dripleg is absent from a prior repair. This insulation should be replaced the next time manhole insulation repairs are done.

d. The steam expansion slip joint for the Union Street steam piping is leaking; this joint should be sealed as soon as it is viable.
e. The concrete around the manway opening is starting to spall. This should be monitored until repairs can be made.

15. 7th Avenue Tunnel
a. There is minor corrosion on structural steel location 7-81. This is a "Low" priority on the "MH & Tunnel Structural Corrosion Prevention/Repair".
b. The steam expansion joint at location 7-61 has a slight leak; CNE should continue to monitor this joint and have it sealed when the leak progresses enough to allow the sealing to hold.
c. The trap at location 7-61 does not appear to be functioning properly; this trap should be investigated and repaired or replaced as required.
d. The emergency light at location 7-50 is not working; this light should be repaired as soon as possible.
e. There is an appreciable amount of groundwater seepage at location 7-44; this should be monitored.
f. The slide/guide at location 7-44 is severely corroded and needs to be replaced. CNE should check all of the piping guides/slides to determine their condition. TEG will coordinate these repairs with CNE.
g. There is an appreciable amount of groundwater seepage at location 7-41; this should be monitored.
h. There is a light out at location 7-22; this light should be repaired as soon as possible.
i. The trap at location 7-22 does not appear to be functioning properly; this trap should be investigated and repaired or replaced as required.
j. There is corrosion on the structural piping supports at the Hume Fogg service connection (location 7-11). This area is a "High" priority on the "MH & Tunnel Structural Corrosion Prevention/Repair".
k. One of the chilled water service valves at this location is not insulated. This valve should be insulated the next time manhole/tunnel insulation repairs are done.
l. There is a lot of insulation and lagging debris at the bottom of the Hume Fogg vertical service shaft. This debris needs to be removed and the area cleaned.
m. There is groundwater dripping onto the piping in this vertical shaft which has penetrated the insulation/lagging of some of the piping. This has caused corrosion of the piping in this area. The piping in this shaft should be re-insulated and sealed to prevent groundwater infiltration; however, the access to this shaft to perform this work

is very limited. CNE personnel should meet with an insulator to determine the viability of having this piping re-insulated.

16. 4th Avenue Tunnel
    a. The steam valve insulation blanket at location 4-14 is in poor condition and partially removed from the valve. This blanket should be replaced the next time manhole/tunnel insulation repairs are done.
    b. The steam expansion joints at locations 4-45, 4-62 and 4-79 are leaking. CNE should continue to monitor these joints and have them sealed when the leaks progress enough to allow the sealing to hold.
    c. The traps at locations 4-46, 4-62, and 4-79 do not appear to be functioning properly. These traps should be investigated and repaired or replaced as required.
    d. The steam service valve to the Suntrust Building at location 4-61 is leaking; it is assumed that the packing is leaking. CNE should investigate and make the necessary repairs to this valve.
    e. The lights are out at locations 4-69, 4-70 and 4-76.

17. Broadway Tunnel
    a. There is groundwater seepage at the far west end of the Broadway Tunnel (location B-97) that has a very dark, almost black appearance. CNE should safely obtain some samples of this water (wear gloves, etc.) and have it tested to determine its content.
    b. The steam expansion joints at locations B-82 and B-65 are leaking. CNE should continue to monitor these joints and have them sealed when the leaks progress enough to allow the sealing to hold.
    c. The slip joint support structure/table at location B-65 is badly corroded. TEG will coordinate with CNE to investigate a repair procedure for this support.
    d. The area at location B-62/B-63 is not very well lit; a light fixture should be installed at this location.
    e. The trap at location B-50/B-49 does not appear to be functioning properly; this trap should be investigated and repaired or replaced as required. Also, the trap piping should be lowered so that it is below the bottom of the main pipe to improve its function.
    f. The trap strainer at location B-19 is installed downstream of the trap and it should be located upstream. There also should be a check valve installed between the trap and the condensate main piping.
    g. There is some minor debris in Manhole 18 that should be removed.
    h. Sump Pump #1 discharge piping has a leak in the bottom of the vertical standpipe and needs repair.

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 28 customers, comprised of 41 different buildings, connected to the EDS, including the Music City Center and Nashville Hyatt Place. Service to each of these buildings continues to prove satisfactory, and the responsiveness to customer issues is handled by CNE in an excellent and professional manner.

A. Marketing

The DES has placed a temporary hold on active marketing at this time due to the uncertainty of the actual steam and chilled water loads on the MCC. However, several potential customers have contacted the DES asking for service.

B. Customer Interaction

The CNE customer service representative (CSR) continues to respond to customer issues as they arise. Much of the communication involves minor problems with the customers' heating and cooling systems that are unrelated to DES service. Other more significant issues are summarized herein.

- The CSR coordinated several meetings between the customers, CNE, TEG and the contractors for particular projects that affected the steam, condensate and/or chilled water service to the customer.
- Several customer buildings were isolated during the quarter so that building personnel could make internal repairs.
- CNE coordinated meetings with customers in their search for water leaks during the quarter.
- CNE contacted a representative for the State's buildings to inform him that several of their buildings were not meeting their contractual Delta T requirements. The State will make adjustments where they can.
- Other minor issues and customer interactions are noted in the monthly CNE reports.

VII. Recommendations

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

- Corroded structural steel within the vaults and tunnels should be cleaned and painted or replaced; TEG will coordinate this effort with CNE.

- Insulation which is absent, or in disrepair, in the vaults should be addressed through either additional capital projects, which include work within these vaults, or through DES090.
- CNE should continue to monitor leaking expansion joints and have them sealed when the leaks progress enough to allow the sealing to hold.
- Steam traps which need repair or replacement should be addressed as soon as possible.