



Operations Monitoring Report

Second Quarter FY15

Prepared by:

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I. Executive Summary

A review of the fiscal year 2015 (FY15) Second 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 2015 to date, CNE has satisfactorily met all of the contract obligations to Metro and has had no contract violations.

For the Second Quarter FY15, the chilled water sales decreased approximately 16% over the previous Second Quarter (FY14). The Second Quarter FY15 saw a significant decrease in cooling degree days of approximately 33%. The peak chilled water demand for the current quarter was 14,515 tons, which is 5.5% lower than the previous Second Quarter.

Steam sendout for the current quarter decreased by approximately 12% over the previous Second Quarter, marked by a decrease in the number of heating degree days. Likewise, steam sales also decreased by approximately 7.3% over the previous Second Quarter. Steam system losses, as a percentage of sendout, increased, and the total losses increased approximately 8.2% over the previous Second Quarter. The peak steam demand for the current quarter was 136,218 pounds per hour, which represents an increase in the Second Quarter demand by approximately 1.3%.

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 lower than the guaranteed levels but continues to increase over previous years. The steam plant electric consumption increased marginally over the previous Second Quarter, and the amount of electricity per unit of sales increased by approximately 9.3%. The steam plant fuel efficiency has decreased marginally from the previous Second Quarter. The total water consumption for the steam and chilled water plants decreased approximately 3% from the previous Second Quarter marked by a 6.5% increase in the EDS make-up for the chilled water system and a 32% increase in the steam plant usage.

Work continued on DES Capital and Repair & Improvement Projects during the Second Quarter of FY15. Repair and Improvements to the EDS continue as scheduled. Construction was completed on DES-089 and DES-105 during the Second Quarter FY15. Construction is anticipated to be completed on DES-109 during the Third Quarter FY15. No projects were closed-out during the Second Quarter FY15.

The current fiscal year system operating costs to date are \$11,703,733. This value represents approximately 53% of the total budgeted operating cost for FY15. The customer revenues from the sales of steam and chilled water for FY15 (to date) are \$9,814,029 which is approximately 48% 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 FY15 is \$1,387,125 (75% of budget). However, the actual MFA required cannot be accurately calculated due to outstanding invoices.

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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 Second Quarter chilled water sales is shown in Figure 1. This data reflects a 15.9% decrease in sales for the current quarter over the same quarter of the previous fiscal year.

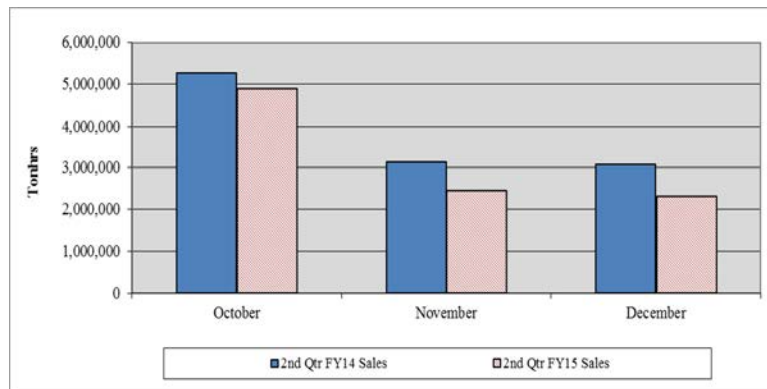


Figure 1. Second Quarter FY15 Sales Comparison

The peak chilled water demand for the current quarter was 14,515 tons, which represents a 5.5% decrease over the previous Second 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.

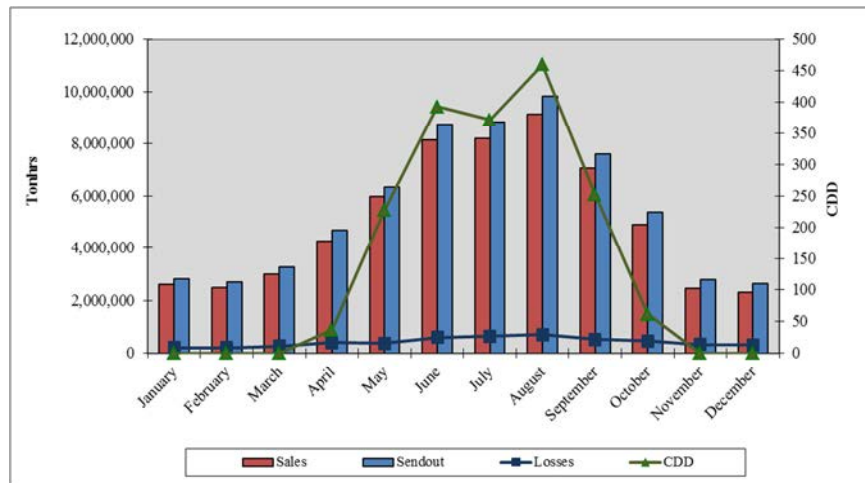


Figure 2. Chilled Water Sales, Sendout, Losses and CDD for the Previous Twelve Months

2. Losses

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

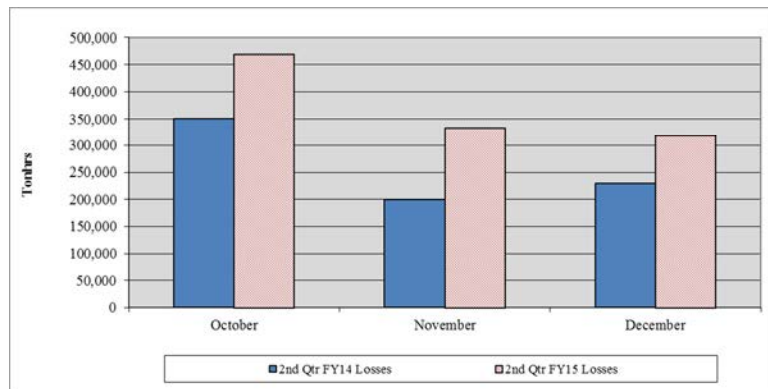


Figure 3. Chilled Water System Loss Comparison for the Second Quarter FY15

The EDS make-up increased by approximately 6.5% over the previous Second 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 44% over the previous Second Quarter. The make-up to the cooling towers decreased 7.9% during the quarter. The number of cycles of concentration in the condensing water circuit

experienced a 34.7% decrease during the current quarter. The overall city water make-up comparison for the chilled water system is shown in Figure 4.

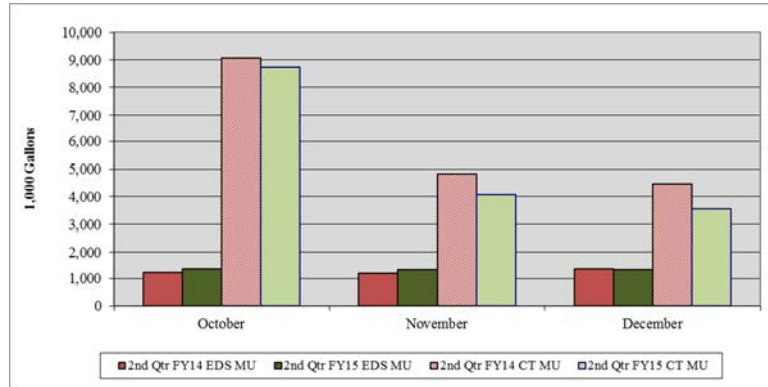


Figure 4. Chilled Water System City Water Usage Comparison

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.

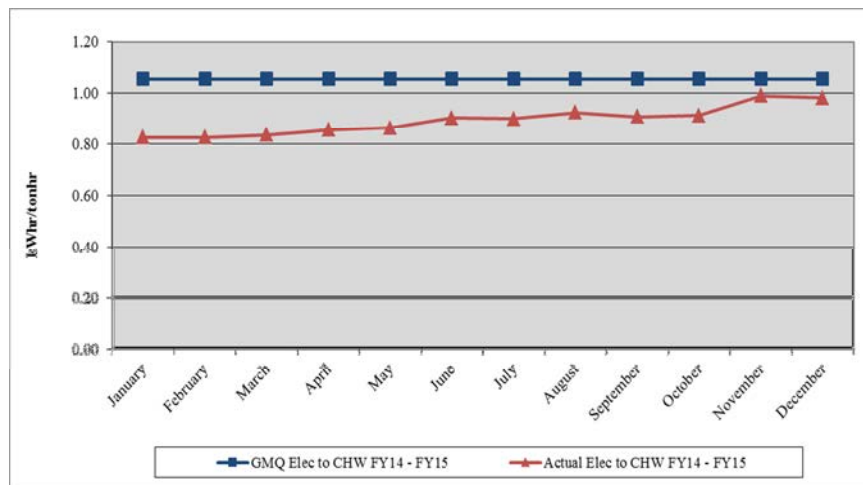


Figure 5. Chiller Plant Electric Performance Guarantee Comparison for the Previous Twelve Months

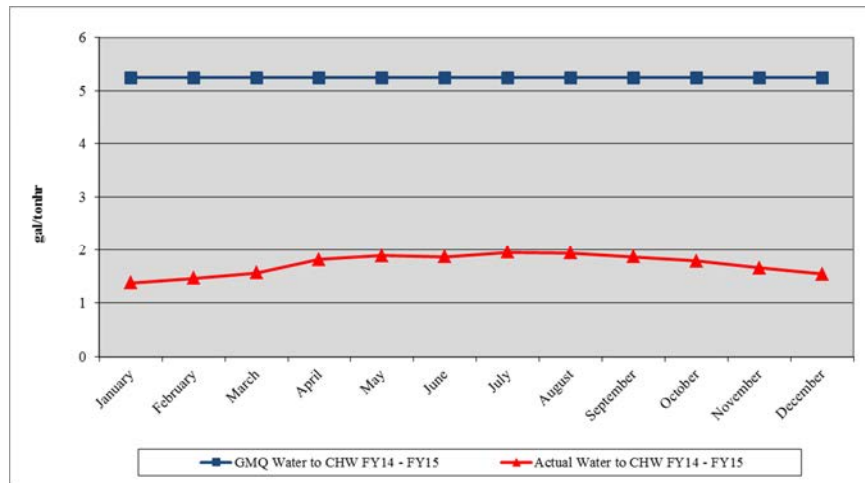


Figure 6. Chiller Plant Water Consumption Performance Guarantee Comparison for the Previous Twelve Months

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. However, the chiller plant electric usage continues to show a steady increase over previous years. This increase is believed to be due, in part, to a change in operation of the chiller plant adopted by CNE during the First Quarter that was to be addressed during the Second Quarter. The electric usage per unit of sales increased approximately 14.3% over the Second Quarter for FY14 (Figure 5). The Second Quarter FY15 saw the two lowest efficient months in the DES operational history.

The actual chilled water plant water conversion factor increased approximately 9.4% over the previous Second Quarter. However, the total consumption of city water for the chiller plant for the current quarter decreased approximately 7.9%.

B. Steam

1. Sales and Sendout

The steam sendout decreased by approximately 6% over the previous Second Quarter (FY14), and the sales also decreased by approximately 7%. The number of heating degree days decreased 1.6% over the previous Second Quarter. The steam system losses increased 15% over the previous Second Quarter. A comparison for the Second Quarter steam sales is shown in Figure 7.

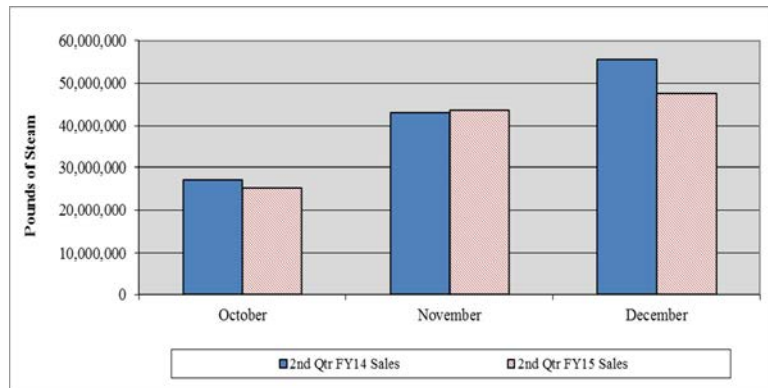


Figure 7. Steam Sales Comparison for the Second Quarter FY15

The peak steam demand for the current quarter was 136,218 pph, which reflects an approximate 1.3% increase in the peak steam production over the previous Second 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.

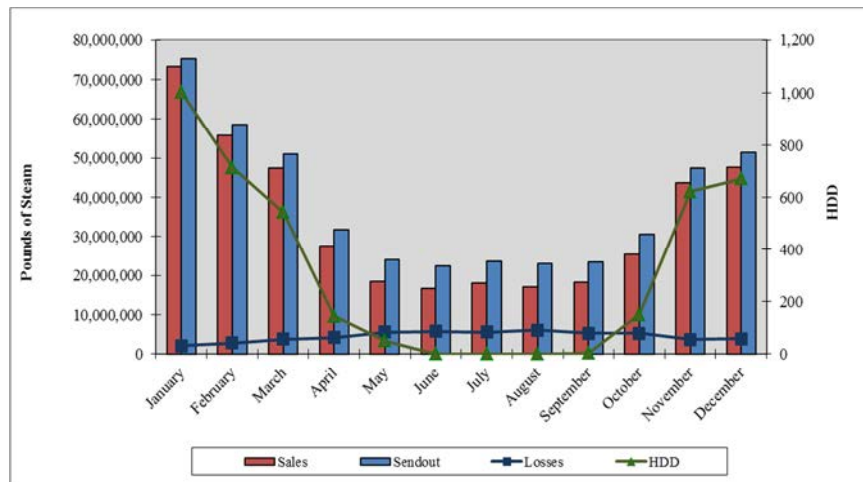


Figure 8. Steam Sales, Sendout, Losses and HDD for the Previous Twelve Months

2. Losses

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

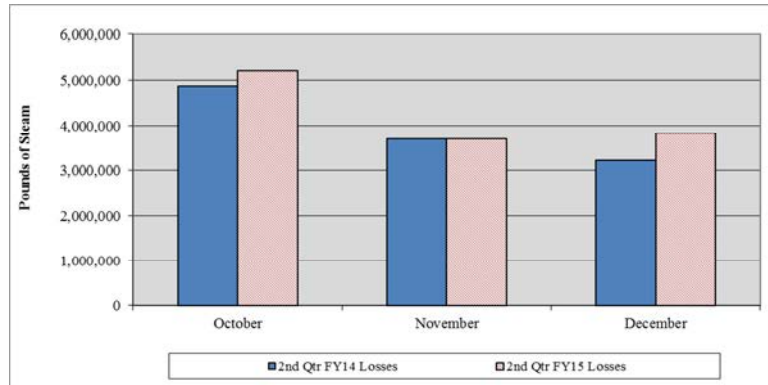


Figure 9. Second Quarter FY15 Steam System Losses

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 Second Quarter data in Figure 10.

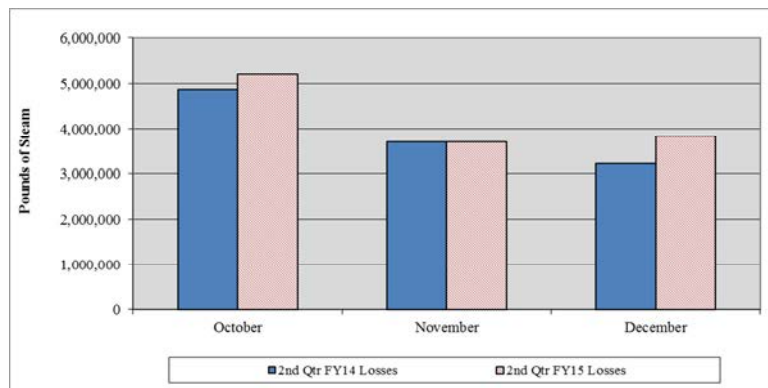


Figure 10. Second Quarter FY15 Steam System City Water Make-up Comparison

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.

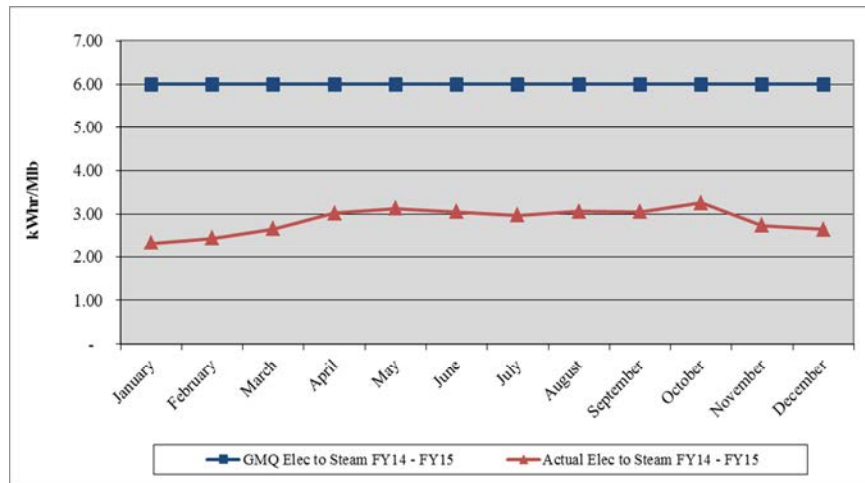


Figure 11. Steam Plant Electric Performance Guarantee for the Previous Twelve Months

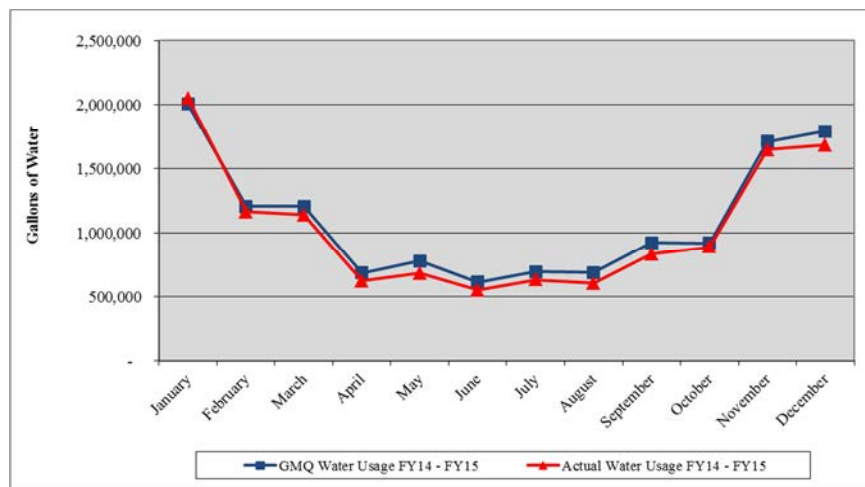


Figure 12. Steam Plant Water Performance Guarantee for the Previous Twelve Months

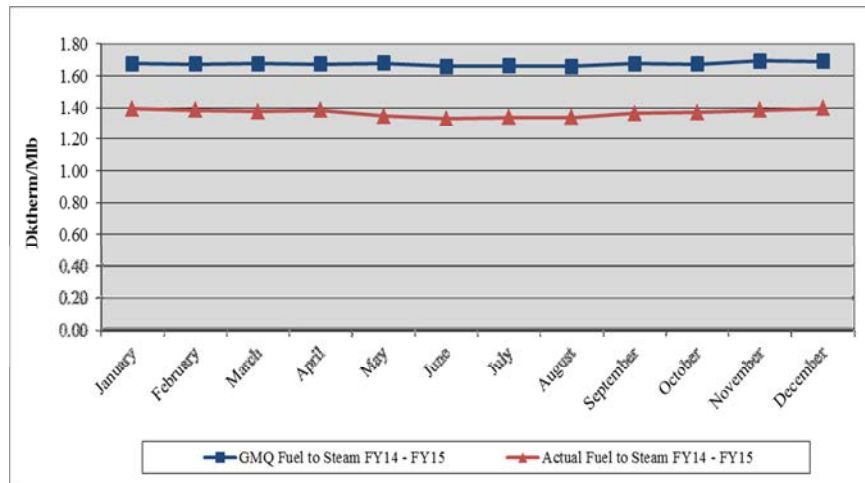


Figure 13. Steam Plant Fuel Performance Guarantee for the Previous Twelve Months

The current quarter experienced a marginal increase in the steam plant electric consumption while experiencing a 9.3% increase in the electric conversion factor. The water consumption for the steam plant increased 31.9% this quarter as compared to the previous Second 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 0.56% 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 Second Quarter comparisons of the Guaranteed Maximum Quantities (GMQ) of the criteria commodities (fuel, water and electricity).

Table 1. Second Quarter FY15 Production, Sales and Consumption Summary

Item	Unit	Second Quarter FY15	Second Quarter FY14	*Percent Difference
	days	92	92	0.00%
Total Electric Use	kWhrs	9,492,895	9,855,235	-3.68%
Chilled Water	kWhrs	9,165,469	9,531,774	-3.84%
Steam	kWhrs	327,426	323,461	1.23%
Total Water Use	kgal	24,532	25,278	-2.95%
Total Chilled Water	kgal	20,359	22,114	-7.94%
EDS Make-up	kgal	3,997	3,753	6.50%
Cooling Towers	kgal	16,362	18,365	-10.91%
Calc CT Evaporation	kgal	13,431	16,075	-16.45%
CT Blowdown	kgal	2,931	2,290	27.99%
Calc # Cycles		4.58	7.02	-34.72%
Steam	kgal	4,173	3,164	31.89%
Total Fuel Use	mmBTU	179,301	189,710	-5.49%
Natural Gas	mmBTU	179,203	189,652	-5.51%
Propane	mmBTU	98	58	n.a.
Condensate Return	kgal	12,021	13,916	-13.62%
	lbs	98,040,657	113,493,546	-13.62%
Avg Temp	°F	170.0	166.0	2.41%
Sendout				
Chilled Water	tonhrs	10,783,700	12,264,000	-12.07%
Steam	lbs	129,340,000	137,611,000	-6.01%
Peak CHW Demand	tons	14,515	15,353	-5.46%
Peak Steam Demand	lb/hr	136,218	134,500	1.28%
CHW LF		33.65%	36.18%	-6.99%
Steam LF		43.00%	46.34%	-7.20%
Sales				
Chilled Water	tonhrs	9,661,191	11,484,062	-15.87%
Steam	lbs	116,600,782	125,838,784	-7.34%
Losses				
Chilled Water	tonhrs	1,122,509	779,938	43.92%
Steam	lbs	12,739,218	11,772,216	8.21%
		9.85%	8.55%	15.13%
Degree Days				
CDD		62	93	-33.33%
HDD		1,442	1,466	-1.64%

*positive percent difference values imply an increase from FY14 to FY15

Table 2. Second Quarter FY15 Performance Guarantee Comparison for Steam and Chilled Water

GMQ Calculations	Unit	Second Quarter FY15	Second Quarter FY14	*Percent Difference
Steam				
GMQ Elec Conversion	kWhr/Mlb	6.00	6.00	
Electric Conversion	kWhr/Mlb	2.81	2.57	9.25%
GMQ Plant Efficiency	Dth/Mlb	1.687	1.680	
Plant Efficiency	Dth/Mlb	1.386	1.379	0.56%
Actual %CR		75.80%	82.47%	-8.09%
Avg CR Temp	°F	170	166	2.41%
GMQ Water Conversion	gal	4,413,304	3,400,635	
Water Conversion	gal	4,214,730	3,195,640	31.89%
Chilled Water				
GMQ Elec Conversion	kWhr/tonhr	1.055	1.055	
Electric Conversion	kWhr/tonhr	0.949	0.830	14.30%
GMQ Water Conversion	gal/tonhr	5.25	5.25	
Water Conversion	gal/tonhr	2.11	1.93	9.43%

*positive percent difference values imply an increase from FY14 to FY15

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 FY15 to date are \$11,703,733. This value represents approximately 53% of the total budgeted operating cost for FY15 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 Second 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

FY15 are \$9,814,029 which is approximately 48% of the budgeted amount. The MFA transferred to date is \$1,387,125 (75% 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	FY15 Budget	First Quarter Expenses	Second Quarter Expenses	Third Quarter Expenses	Fourth Quarter Expenses	Total Spending to Date	
Operating Management Fee							
FOC: Basic	\$ 4,374,300	\$ 1,076,159	\$ 1,076,159	\$ -	\$ -	\$ 2,152,317	
9th Chiller	\$ 41,000	\$ 10,084	\$ 10,084	\$ -	\$ -	\$ 20,168	
C/O 6A	\$ 80,900	\$ 19,908	\$ 19,908	\$ -	\$ -	\$ 39,816	
C/O 6B	\$ 70,900	\$ 17,429	\$ 17,429	\$ -	\$ -	\$ 34,858	
C/O 7	\$ 26,700	\$ 6,566	\$ 6,566	\$ -	\$ -	\$ 13,132	
C/O 8	\$ 13,000	\$ 2,873	\$ 2,873	\$ -	\$ -	\$ 5,747	
Pass-thru Charges: Chemical Treatment	\$ 151,500	\$ 60,541	\$ 40,990	\$ -	\$ -	\$ 101,531	
Insurance	\$ 31,200	\$ -	\$ -	\$ -	\$ -	\$ -	
Marketing: CES Sales Activity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Incentive Payments	\$ 12,400	\$ 3,139	\$ 3,139	\$ -	\$ -	\$ 6,279	
FEA: Steam	\$ -	\$ 24,860	\$ 42,244	\$ -	\$ -	\$ 67,104	
Chilled Water	\$ -	\$ 147,576	\$ 41,414	\$ -	\$ -	\$ 188,990	
Misc: Metro Credit	\$ -	\$ (220,970)	\$ (123,494)	\$ -	\$ -	\$ (344,464)	
ARFA	\$ -	\$ 15,630	\$ 15,630	\$ -	\$ -	\$ 31,259	
Deferral	\$ -	\$ -	\$ (17,564)	\$ -	\$ -	\$ (17,564)	
Subtotal - Man Fee =	\$ 4,801,900	\$ 1,384,765	\$ 1,258,872	\$ -	\$ -	\$ 2,643,637	
Reimbursed Management Fee + Chem Treatment		\$ 1,384,765	\$ 429,908	\$ -	\$ -	\$ 1,814,673	
Metro Costs							
Pass-thru Charges: Engineering	\$ 8,700	\$ 23,301	\$ 34,768	\$ 3,688	\$ -	\$ 61,757	
EDS R&I Transfers	\$ 275,100	\$ 70,350	\$ 71,925	\$ -	\$ -	\$ 142,275	
Metro Marketing	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	
Project Administration	\$ 27,900	\$ -	\$ -	\$ -	\$ -	\$ -	
Metro Incremental Cost	\$ 524,500	\$ 111,740	\$ 50,317	\$ 10,095	\$ -	\$ 172,152	
Utility Costs: Water/Sewer	\$ 724,600	\$ 201,426	\$ 110,046	\$ -	\$ -	\$ 311,472	
EDS Water/Sewer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
EDS Electricity	\$ -	\$ 19,544	\$ 13,448	\$ -	\$ -	\$ 32,993	
Electricity	\$ 6,574,600	\$ 2,487,218	\$ 756,635	\$ -	\$ -	\$ 3,243,853	
Natural Gas Consultant	\$ 99,600	\$ 4,000	\$ 5,120	\$ -	\$ -	\$ 9,120	
Natural Gas Transport	\$ -	\$ 30,100	\$ 82,374	\$ -	\$ -	\$ 112,475	
Natural Gas Fuel	\$ 3,657,600	\$ 410,315	\$ 795,227	\$ -	\$ -	\$ 1,205,541	
Propane	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Subtotal - Metro Costs =	\$ 11,902,600	\$ 3,357,993	\$ 1,919,860	\$ 13,784	\$ -	\$ 5,291,636	
Subtotal - Operations =	\$ 16,704,500	\$ 4,742,758	\$ 3,178,732	\$ 13,784	\$ -	\$ 7,935,274	
Debt Service							
2012 Bonds	\$ 3,476,900	\$ 869,146	\$ 869,313	\$ -	\$ -	\$ 1,738,458	
2005 Bonds -Self Funded	\$ 811,800	\$ 343,978	\$ 344,028	\$ -	\$ -	\$ 688,005	
2007 Bonds -Self Funded	\$ 210,000	\$ -	\$ 339,300	\$ -	\$ -	\$ 339,300	
2008 Bonds -Self Funded	\$ 208,900	\$ -	\$ 339,300	\$ -	\$ -	\$ 339,300	
2010 Bonds -Self Funded	\$ 207,300	\$ -	\$ -	\$ 339,300	\$ -	\$ 339,300	
MCCC Fund -Self Funded	\$ 731,000	\$ -	\$ -	\$ 339,300	\$ -	\$ 339,300	
Interest & Misc Revenue	\$ (175,800)	\$ (6,747)	\$ (8,458)	\$ -	\$ -	\$ (15,204)	
MIP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Oper. Reserve Fund	\$ 600	\$ -	\$ -	\$ -	\$ -	\$ -	
Subtotal - Capital =	\$ 5,470,700	\$ 1,206,377	\$ 1,883,482	\$ 678,600	\$ -	\$ 3,768,459	
Total =		\$ 22,175,200	\$ 5,949,135	\$ 5,062,214	\$ 692,384	\$ -	\$ 11,703,733
Customer Revenues							
Taxes Collected		\$ 109,142	\$ 86,298	\$ -	\$ -	\$ 195,440	
Taxes Paid		\$ 109,141	\$ 56,730	\$ -	\$ -	\$ 165,871	
Penalty Revenues/Credits		\$ (103,266)	\$ 702	\$ -	\$ -	\$ (102,564)	
Energy Revenues Collected		\$ 5,683,734	\$ 4,203,289	\$ -	\$ -	\$ 9,887,024	
Revenues =	\$ 20,325,700	\$ 5,580,469	\$ 4,233,560	\$ -	\$ -	\$ 9,814,029	
Metro Funding Amount =	\$ 1,849,500	\$ 368,666	\$ 828,654	\$ 692,384	\$ -	\$ 1,889,704	

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	\$ 1,958,099	9,862,299	\$ 0.1985	\$ 770,708	43,005	\$ 17.9214
State Government	\$ 1,785,076	7,655,771	\$ 0.2332	\$ 989,851	50,339	\$ 19.6636
Metro Government	\$ 3,133,302	16,537,399	\$ 0.1895	\$ 1,249,988	76,456	\$ 16.3492
New Customers	\$ 1,927,807	10,113,374	\$ 0.1906	\$ 721,411	52,605	\$ 13.7138
Total	\$ 6,876,477	34,055,469	\$ 0.2019	\$ 3,010,546	169,800	\$ 17.7300

Total Revenue	\$	9,887,023
True-up and Adjustments (Net)	\$	(72,995)
Net Revenue	\$	9,814,029

III. EGF Operations

Items relating to the facility operations presented herein are derived from the monthly reports issued by CNE for FY15. 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.

- Only one steam pressure excursion occurred on October while performing a combustion analysis. The steam pressure was restored to 150 psig from a low of 147 psig after forty-five minutes.
- Another steam pressure excursion occurred in November due to a surge in steam demand at the Music City Center after re-energizing their in-building steam system. The lowest recorded pressure was 140 psig and pressure was restored after forty-five minutes.
- The chilled water sendout temperature increased beyond the normal operating range for approximately thirty-six minutes on November 13th due to a failed differential pressure switch.
- 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

CNE had its first OSHA reportable accident in approximately three years during the quarter. However, the injury was not life-threatening and the employee was back to work the next day.

No environmental violations were reported during the quarter.

Monthly safety meetings were held on Storm Water Pollution Prevention and Spill Prevention Controls and Countermeasures, Steam System Safety and Safe Work Practices.

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 continues 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 75.8% of the steam sendout during the quarter which represents a decrease of approximately 8% over the previous Second Quarter.

- 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
 - During the quarter, the presence of some peculiar water chemistry at several of the customers' buildings prompted an investigation by TEG, CNE and their water treatment company. The source of problem continues to be investigated, but the effect appears to decrease the heat transfer potential at customer coils and heat exchangers, which may be affecting the system differential temperature.

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.

- Packing on two boiler feed pumps was replaced.
- A roof leak was repaired.
- A new feedwater control valve was installed.
- Two chemical feed pumps were repaired and a foot valve was replaced.
- The ignitor to boiler #4 was cleaned.
- Combustion analysis was performed on boilers #1 and #4.
- The display module on chiller #1 was replaced.
- The bypass piping on softener #1 was replaced.
- 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 January 6, 2015, 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.

- The computer monitor in the Metro office was found to no longer be working and was replaced by CNE.
- The #3 and #4 boiler natural gas control valves (Maxon valves) were noted in the log book as no working. Boiler #3 was noted as only being available on propane and not natural gas. The replacement valves were anticipated on the day of the walkthrough and installation was anticipated immediately.
- A rung is bent on the ladder between the main operating floor and the water treatment mezzanine.
- 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. Second Quarter FY15 Open Projects

The following projects remained open at the end of the Second Quarter FY15.

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. DES089 – AA Birch Tunnel Repairs

The AA Birch Tunnel houses the chilled water, steam and condensate return service piping that supplies the AA Birch Building. It is a 5-1/2 foot diameter tunnel bored through solid rock and varies from approximately 20 feet below the street surface to 40 feet below the street surface. Groundwater infiltration into the AA Birch Tunnel has caused some of the tunnel surface rock to loosen and fall off into the tunnel floor. Not only does this present a safety hazard to maintenance personnel, but, if left unchecked, can result in compromise of the tunnel structure.

This project involves the reinforcement of the upper half of the tunnels with rebar/wire mesh and shotcrete and the placement of drainage wicks and channels to direct the groundwater infiltration to the tunnel lower sidewalls and floor for drainage and collection. This project was bid during the First Quarter of FY15. Bids were received, the project was awarded and the work was completed during

the Second Quarter FY15. It is anticipated that this project will be closed out during the Third Quarter FY15.

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

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

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

A proposal has yet to be provided 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.

5. DES 105 – Vertical Tunnel Shaft Repairs at Suntrust Building

Chilled water and steam services are supplied to the Suntrust Building on 4th Avenue North from the 4th Avenue Tunnel. Part of the tunnel structure for this service includes a 40 foot tall vertical shaft from the 4th Avenue Tunnel. This shaft is bored through solid rock and due to groundwater infiltration, the rock has started to fall from the vertical shaft's surfaces. Not only does this present a safety hazard to maintenance personnel, but, if left unchecked, can result in compromise of the vertical shaft structure.

This project involves the reinforcement of the walls of the vertical shaft with rebar/wire mesh and shotcrete and the placement of drainage wicks and channels to direct the groundwater infiltration to the lower portion of the vertical shaft. It also involves similar reinforcement of a portion of the 4th Avenue Tunnel directly below this vertical shaft. This project was bid during the First Quarter of FY15. Bids were received, the project was awarded and the work was completed during the Second Quarter FY15. It is anticipated that this project will be closed out during the Third Quarter FY15.

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

Phase II of this project is anticipated to be implemented by building personnel and is contingent on funding of the work.

7. DES 107 – Manholes A, B and M Repairs and Improvements

Manholes A, B and M are located within the bounds of the West Riverfront Project which includes the construction of an amphitheater along the river at the old waste-to-energy plant site. There is some maintenance and repair work which needs to take place within these manholes prior to the opening of the West

Riverfront Park in July 2015. This project addresses these maintenance and repair items.

TEG is awaiting drawings from the City's Architect on work being done around these manholes; several requests have been made. Once these drawings are received, TEG will complete the design drawings for the maintenance and repair work in these manholes, bid the project and have the work completed.

8. DES 109 – Indigo Hotel Sparge Tube Addition

Steam and condensate service piping for Wells Fargo passes through the basement of the Indigo Hotel located at 310 Union Street. The prior occupant of the Indigo Hotel building was connected to the district steam system and there is a steam trap assembly that used to drain to a condensate collection system within the Indigo Hotel's basement. Because this condensate collection system is no longer in service, a condensate sparge tube needed to be added at this trap location in order to inject the trap's condensate directly into the condensate return piping. The design, bidding and award for this sparge tube addition was completed during the Second Quarter FY15. The construction and close-out of this project is anticipated to be completed during the Third Quarter FY15.

9. DES 110 – EGF Alternative Fuel

Due to the apparent unavailability of propane as the redundant fuel at the EGF over FY14's natural gas curtailment period, an investigation and preliminary design began during the Second Quarter for the possible installation of a #2 fuel oil system or additional propane storage tanks. The investigation, feasibility and cost-effectiveness of the alternatives continue to be investigated.

B. Second Quarter FY15 Closed Projects

There were no projects closed during the Second Quarter FY15.

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	FY15 Spending to Date	Total Spent to Date	Remaining Balance
2010 Bond Projects -49109					
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	\$ -	\$ 64,616	\$ 35,384
DES089	AA Birch Tunnel Repairs	\$ 150,000	\$ 8,053	\$ 8,053	\$ 141,947
DES105	Suntrust Shaft Repairs	\$ 150,000	\$ 2,944	\$ 2,944	\$ 147,056
Total Closed Projects		\$ 1,814,533	\$ -	\$ 1,814,533	\$ -
Metro Project Admin		\$ -	\$ -	\$ -	\$ -
Project Man, Development, etc		\$ 360,383	\$ -	\$ -	\$ 360,383
Total 2010 Bond		\$ 2,625,916	\$ 10,996	\$ 1,902,253	\$ 723,663
Customer Connection Fund -49107					
DES104	Time of Use/ Customer Billing	\$ 30,000	\$ 4,749	\$ 4,749	\$ 25,251
DES106	Courthouse CHW Heat Exchanger	\$ 10,000	\$ 6,928	\$ 9,654	\$ 346
Sub-Total Closed Projects		\$ 7,161,827	\$ 33,039	\$ 6,559,502	\$ 602,325
Metro Project Admin		\$ 50,000	\$ -	\$ 39,413	\$ 10,587
Project Man, Development, etc		\$ 1,248,173	\$ -	\$ -	\$ 1,248,173
Customer Connection Fund		\$ 8,500,000	\$ 44,716	\$ 6,613,317	\$ 1,886,682

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

Several EDS repairs and improvements were made during the Second 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 \$321,101. Table 6 provides a summary of the FY15 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	Net Market Adjustment	Market Value	Balance
Value at end of FY15							\$ 208,524.78	\$ 208,524.78
CNE May 2014 R&I Invoice	6/30/2014	DES-1755	CNE	\$ 606.59				
CNE July 2014 R&I Invoice	9/25/2014	DES-1784	CNE	\$ 1,302.60				
Sub-Total First Quarter				\$ 1,909.19	\$ 70,350.00	\$ -	\$ 68,440.81	\$ 68,440.81
DES-107: MH-A & B Rebuild	10/10/2014	DES-1791	TEG	\$ 361.10				
CNE Aug 2014 R&I Invoice	10/31/2014	DES-1795	CNE	\$ 4,604.68				
DES-107: MH-A & B Rebuild	12/1/2014	DES-1911	TEG	\$ 495.30				
DES 109: Indigo Hotel	12/1/2014	DES-1911	TEG	\$ 2,574.30				
CNE Sept 2014 R&I Invoice	12/2/2014	DES-1916	CNE	\$ 13,950.48				
CNE Oct 2014 R&I Invoice	12/19/2014	DES-1926	CNE	\$ 4,192.49				
Sub-Total Second Quarter				\$ 26,178.35	\$ 71,925.00	\$ -	\$ 45,746.65	\$ 45,746.65
Suntrust Shaft Repair (Dec 2014) DES-105	01/06/15		TEG	\$ 38.10				
MH A&B Mech Rebuild (Dec 2014)	01/06/15		TEG	\$ 838.20				
Tunnel Insulation Rework (Dec 2014)	01/06/15		TEG	\$ 571.50				
Indigo Hotel (Dec 2014) DES-109	01/06/15		TEG	\$ 163.20				
Sub-Total Third Quarter				\$ 1,611.00	\$ -	\$ -	\$ (1,611.00)	\$ (1,611.00)
Sub-Total Fourth Quarter				\$ -	\$ -	\$ -	\$ -	\$ -
FY15 Year to Date				\$ 29,698.54	\$ 142,275.00	\$ -	\$ 321,101.24	\$ 321,101.24

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. Some traps were found not to be functioning properly; CNE is continuing to repair or replace these traps during this quarter.
 - b. Structural metal in the vaults and tunnels need to be cleaned and painted.
 - c. Some minor insulation repairs are needed in some vaults.
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

This quarter's walkthrough was conducted in two segments. The first segment was conducted on November 12 and 13, 2014; the second segment was conducted on January 20, 21 and 23, 2015. The manholes that were visited included Manholes 2, 3, 4, 5, 6, 9,

10, 11, 12, 13, 16A, 18A, 22B, C, D, B2, B3, B4, B6, B7, B8, B9, B10, Viridian, S4A, C and U. The following comments and observations are a result of these visits:

1. Manhole 2
 - a. There was water present in this manhole and it required pumping before entry.
 - b. There is some minor insulation repair work that needs to be done in this manhole; the insulation end cap on the steam piping is starting to fall off and needs to be re-positioned and more securely attached to the pipe. CNE needs to address this.
 - c. Mud is starting to accumulate in the floor of this manhole, presumably from seepage between the walls and floor. Before the mud appreciably accumulates, CNE needs to address this.
2. Manhole 3
 - a. There was water present in this manhole and it required pumping before entry.
 - b. There are some hairline cracks in the concrete walls that should be monitored.
 - c. There is some minor debris in the manhole which should be removed.
 - d. There are some minor insulation lagging repairs which should be made the next time that manhole insulation repairs are scheduled.
 - e. The existing steam slip joint insulation blanket is in poor condition; this blanket should be replaced the next time that manhole insulation repairs are scheduled.
 - f. The trap was not cycling; CNE should investigate, repair or replace this trap as soon as possible.
3. Manhole 4
 - a. There was water present in this manhole and it required pumping before entry.
 - b. The paint on the entry ladder and some steel supports is peeling off. There is some moderate corrosion in this manhole.
 - c. The ceiling and sidewalls of this manhole interior are steel which remain from the original manhole. Concrete walls and roof were installed outside of these steel walls/ceiling when the manhole was rebuilt several years ago. The steel ceiling and ceiling members have corroded badly and portions could fall upon personnel if it is not removed soon. This manhole is a “High” priority on the “MH & Tunnel Structural Corrosion Prevention/Repair”. TEG will coordinate the repairs to this manhole with CNE.
 - d. The manhole vent is located directly above a steam pipe kicker/anchor. Because of this, rainwater drips directly onto this kicker/anchor. Flashing or additional piping should be installed to divert the rainwater to the floor without it falling on any of the manhole structural members.
4. Manhole 5
 - a. There was water present in this manhole and it required pumping before entry.
 - b. There are some minor insulation lagging repairs which should be made in this manhole the next time that manhole insulation repairs are scheduled.

5. Manhole 6

- a. There was water present in this manhole and it required pumping before entry.
- b. There is some spalling of the manhole's concrete wall at the east steam piping entry point that is only slightly worst since the last review. TEG will coordinate repairs for this with CNE.
- c. The end of the steam piping steel casing at the east wall slip joint is no longer attached to the steel casing which penetrates the wall. It is believed that during a shut down in the past, the steam piping contracted and this end portion became wedged onto the steam pipe. When the piping was re-energized, this end piece moved with the steam pipe and pushed the insulation blanket to the west. This end portion should be cut and removed from the steam pipe and the insulation blanket re-positioned onto the slip joint.
- d. Mud is starting to accumulate in the floor of this manhole, presumably from seepage between the walls and floor. Before the mud appreciably accumulates, CNE needs to address this.

6. Manhole 9

- a. There was a small amount of water in the manhole. The sump pump was operational however it appeared that the float was "sticking" and not allowing the pump to turn "on" and remove all of the water from the manhole floor. CNE personnel should inspect and repair this pump to allow removal of all water from the floor area.
- b. There is some corrosion on some of the piping supports and some of the paint is starting to flake off. These places should be cleaned, prepped and re-painted. TEG will coordinate this with CNE.
- c. Some cracking has occurred in the underside of the concrete opening which was cut into the northern wall of the "old" manhole. TEG has forwarded pictures to our structural engineer for comment. A site visit with the structural engineer may be required for further evaluation of this cracking.

7. Manhole 10

- a. There was a minor amount of water present in this manhole due to the slope of the floor.
- b. The hand wheel for the steam isolation valve that serves the Municipal Auditorium is absent. During the manhole review in October 2013, the absence of this hand wheel was noted and, supposedly, a new hand wheel was immediately ordered. CNE should install this new hand wheel or, if the hand wheel has been misplaced or lost, a new one should be ordered as soon as possible and installed on this valve.
- c. The steam service branch for St. Mary's consists of a vertical section of piping that includes two gate valves with a tee and drain between them. These valves should not be installed in a vertical position on a steam line; condensate can accumulate above these valves when they are closed which could result in water and/or steam hammer. The vertical piping is also out of plumb. An isolation valve should be added to the horizontal section of piping and the hand wheels

removed from the two vertical valves so that they cannot be operated. An outage for the St. Mary's Church should be scheduled during the summer of 2015 to accomplish this task or an outage of this portion of the distribution system so that the vertical valves can be removed and a new horizontal valve installed.

- d. There is some minor corrosion on the steam anchor; this manhole is a "Low" priority on the "MH & Tunnel Structural Corrosion Prevention/Repair".
8. Manhole 11
 - a. There was a small amount of water in this manhole which required pumping before entry.
 - b. The entry ladder consists of individual ladder rungs embedded into the concrete walls. This type of ladder rung can fail without warning and could result in personal injury. These rungs should be removed from the walls and a new ladder installed. Using the aluminum standard ladder detail provided by TEG, CNE should solicit bids for this work to be completed as an R&I project.
 - c. There is some moderate corrosion in this manhole. This manhole is a "Moderate" priority on the "MH & Tunnel Structural Corrosion Prevention/Repair".
 - d. Mud is starting to accumulate in the floor of this manhole. Before the mud appreciably accumulates, CNE needs to address this issue.
 9. Manhole 13
 - a. There was not any water present in this manhole.
 - b. The insulation jacketing at the very bottom of the dripleg is coming off. This should be repaired the next time manhole insulation repairs are scheduled.
 - c. The teflon pads on the kicker slide plates have fallen out of place. During the next shut-down of this section of piping, these pads should be re-positioned and a method devised to keep them in their proper position.
 - d. There is moderate corrosion in this manhole. This manhole is a "Moderate" priority on the "MH & Tunnel Structural Corrosion Prevention/Repair".
 - e. The trap was not working; CNE should inspect and repair or replace this trap as soon as possible.
 - f. There are several locations where concrete has spalled from the ceiling and concrete beams in the manhole and should be repaired. TEG is developing a methodology for this repair.
 10. Manhole 18A
 - a. There was no water present in the manhole.
 - b. There is some very minor corrosion on the structural metal components in this manhole. This corrosion should be cleaned and painted to prevent its propagation.
 11. Manhole D
 - a. There was water present in the manhole and it required pumping prior to entry.
 - b. All of 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”.

- c. There is some minor concrete spalling within this manhole. These areas should be repaired to prevent any further deterioration. TEG is developing a methodology for this repair.
- d. There is some minor piping insulation damage in this manhole. These repairs should be made the next time manhole insulation repairs are done.
- e. There is some debris in the manhole and the manhole should be cleaned.
- f. Water/steam hammer was occurring in the manhole and it appears that it is due to excessive condensate in the steam piping. The existing “sparge” station needs to be replaced with a more efficient unit that will eliminate this hammering. TEG will develop drawings for a new sparge tube to be installed as an R& I project.
- g. Mud is starting to accumulate in the floor of this manhole. Before the mud appreciably accumulates, CNE needs to address this.

12. Manhole D Sump

- a. No deficiencies to report.

13. Manhole B2

- a. This manhole had been pumped out 6 to 8 hours prior to this visit so there was not much water present, but there was a little.
- b. There is some corrosion 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” rating.
- c. There is some insulation repair needed in this vault; this vault should be included in the capital project to repair insulation with a “high” rating.
- d. There is moisture on the chilled water supply and return piping near the eastern wall penetrations. It is difficult to discern whether this moisture is from the groundwater infiltration or a leak in the chilled water piping casing. This should continue to be monitored.
- e. Some portions of the mortar which was placed at the joint between the upper half of the precast vault and the lower half has fallen off. It did not appear than anything had shifted so it is presumed that the mortar became unattached due to expansion and contraction. There was no evidence of groundwater infiltration at this joint, nor has there been a history of any groundwater seepage at this joint. Therefore, there is not a need to patch the places where the mortar has fallen. CNE should remove the fallen mortar from the vault and monitor this joint for future water leakage.

14. Manhole B3

- a. There was water present in this vault and it required pumping prior to entry.
- b. There is some corrosion 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” rating.

- c. There is some minor insulation repair needed in this vault; this vault should be included in the capital project to repair insulation with a “moderate” rating.
- d. There is some minor spalling of a concrete wall where it appears that rebar chairs were placed during the vault’s original construction. These spalled places should be patched. TEG will coordinate with CNE to have this done.
- e. There are several hairline cracks in the ceiling of this vault; these cracks should be monitored.

15. Manhole B4

- a. There was water present in this vault and it required pumping prior to entry.
- 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. There is some minor insulation repair needed in this vault; this vault should be included in the capital project to repair insulation with a “moderate” rating.
- d. There are several hairline cracks in the ceiling of this vault; these cracks should be monitored.

16. Manhole B6

- a. There was not any water in this manhole.
- b. There was a lot of dirt in the floor of the manhole; CNE should address this issue.
- c. On the strainer upstream of the trap, there was a wet spot beneath the blowdown valve indicating that this valve may have a small leak. No dripping water was observed. CNE should monitor this valve.

17. Manhole B7

- a. There was a minor amount of water in this manhole but it did not require pumping.
- b. The insulation on the sparge tube has fallen off; it appears that it was only held in place with caulking. This insulation should be re-positioned and an aluminum strap installed to keep it in place and then re-caulked.

18. Manhole B8

- a. There was a minor amount of water in this manhole.
- b. There are some hairline cracks in the ceiling; these should be monitored.

19. Manhole B9

- a. There was some water present in this manhole and it required pumping.
- b. There are some hairline cracks in the ceiling of this vault. These cracks should be monitored.
- c. The hand wheel on the strainer blowdown valve downstream of the trap has fallen off. CNE recently purchased a new service truck and there were not any tools on the truck to re-install this hand wheel. CNE should re-install this hand wheel as soon as possible.

- d. One of the nuts on the entry ladder was loose. CNE recently purchased a new service truck and there were not any tools on the truck to tighten it. CNE should tighten this nut upon their next visit to this manhole.

20. Manhole B10

- a. There was some water present in this manhole and it required pumping.
- b. The piping kicker teflon pads on the Music City Convention Center steam service line have fallen out. These pads should be repositioned and re-attached.

21. Viridian Manhole

- a. There was water in the manhole and it required pumping.
- b. No deficiencies to report.

22. Manhole 16A

- a. No deficiencies to report.

23. Manhole 22B

- a. The vent on the steam piping casing to the library is absent. A new pipe nipple with a valve and check valve needs to be installed on this pipe casing.
- b. The drain on the steam piping casing to the library is absent. The existing plug needs to be removed and a drain and drain valve added.
- c. There is some minor insulation repair needed in this vault. This vault should be included in the capital project to repair insulation with a “minor” rating.

24. Manhole S4A

- a. There are several cracks in the concrete sidewalk above this manhole; these cracks are probably due to turning traffic driving on the concrete when making turns; the condition of this concrete was reported to Metro Public Works.
- b. There are hairline cracks in the western wall of this manhole. These cracks should be monitored.
- c. The trap was not functioning properly. CNE should inspect this trap and repair or replace it as soon as possible. When this is done, a blow down valve needs to be added to the strainer upstream of the trap so the strainer can be blown down.

25. Manhole U

- a. There was no water present in this manhole.
- b. There is some corrosion on the bottom portion of the ladder in this manhole. The ladder should be cleaned and painted or replaced.

26. Manhole 12

- a. There was no water present in this manhole.
- b. There is a hairline crack in the ceiling of this manhole; this crack should be monitored.

- c. There is some minor corrosion in this manhole on the anchor bases. This corrosion should be removed and the anchor painted to prevent any further corrosion.
- d. Initially the trap was not working in this manhole. CNE personnel were able to get it working prior to leaving the manhole.

27. Manhole C

- a. There was water present in this manhole and it required pumping before entry.
- b. The link seals on the water line which passes through the vault are leaking slightly. These link seals should be tightened.
- c. Initially the trap wasn't working; CNE personnel were able to get it working prior to leaving the 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 28 customers, comprised of 41 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 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. Several potential customers have contacted the DES asking for service; however, they have been informed that DES will not be in a position to commit any additional capacity until the the First Quarter of FY16 at the earliest.

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.

- A chilled water outage was planned, organized and scheduled for January 4, 2015.
- Faulty heat exchangers at the Hermitage Hotel and Nashville Public Library were discovered prompting the isolation of steam to the Library until repairs could be made. Condensate was placed to drain at the Hermitage. These heat exchangers were repaired during the quarter (by building personnel) and services were restored.
- CNE met with personnel from the State of Tennessee to discuss the operations of their buildings.

- CNE met with several private customers to discuss the operations of their buildings.
- A water leak at the James K Polk building was discovered by building personnel and reported to CNE since they believed the leak to be from the chilled water system. CNE investigated and could not find the source of the leak.
- Other minor issues and customer interactions are noted in the monthly CNE reports.

VII. Recommendations

Based on the review of the Second 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 DES-090.
- The steam traps which need repair or replacement should be addressed as soon as possible.
- Additional investigation is required to determine the source and solution for the fouling issue with the chilled water.