



**Metro District Energy System Advisory Board  
Regularly Scheduled Meeting of**

**August 16, 2018**

**Minutes of Meeting**

**The meeting was held at the Energy Generation Facility at 90 Peabody Street Nashville, TN 37210**

**Facilitators: Dan Coyle, DES Project Contract Administrator and Kevin Jacobs, Thermal Engineering Group (TEG)**

**Board Members Present:**

Freddie O'Connell  
Brian Taylor  
Eric Swartz  
Talia Lomax-O'dneal  
Alan Robertson  
Jim Thiltgen (on behalf of James E. Harbison)  
Laurel Creech (*on behalf of Nancy Whittemore*)

**Others Present:**

Tim Hestle, CNE  
Dan Coyle, TEG  
Kevin Jacobs, TEG  
Bob Lackey, DES Liaison  
John Schaffer, CNE  
Tom Eddlemon, Metro  
Karl Marietta, FVB  
Scott Potter, Metro Water Services  
Amanda Deaton-Moyer, Metro Water Services  
Jason Byars, MAS Energy

---

The meeting was called to order by the Chair and began at 10:00 A.M.

With no additions, comments or edits to the previous meeting's minutes, a motion was made to approve the minutes and seconded. The Board voted and approved the minutes for the May 17, 2018 meeting.

At the request of the Chair, Mr. Jacobs proceeded with the presentation to the Board.

Mr. Jacobs reviewed the Customer Cost Comparison table for the previous twelve month period. On an aggregate basis for the previous twelve (12) months, the steam consumption and chilled water total costs were down. The unit steam cost is down because consumption is up. The chilled water usage decreased by 6.5%. Natural gas prices continue to stay low compared to previous years. FY17 gas prices were very similar to FY18.

Mr. Jacobs reviewed the DES Contractor Performance for FY18, which included the efficiency and performance tables for steam electric consumption, steam gas consumption, steam water consumption, CHW electric consumption, and CHW water consumption. Mr. Jacobs explained the contractor's performance monitoring criteria as identified on the Power Point presentation with the use of the green,



yellow and red dots noted on the slides. The green dots indicate excellent performance, the yellow dots indicate satisfactory performance, where some improvement may be necessary, and the red dots indicate poor performance. Constellation's performance continues to remain excellent in all areas.

Mr. Jacobs reviewed the Water Treatment. There is some weather related temperature variability on the amount of condensate returned. Although it is part of the agreement with customers that they must return their condensate, some customers are unable to return the condensate. Constellation does investigate and assist customers with repairs to leaks that may be in their systems once they become known as a result of an increase in iron or hardness in the condensate. The amounts for the fuel portions of the FEA earned by CNE vary each month due to the equation set in the ARMA.

Constellation does a good job of maintaining the water chemistry. The issue with the biologicals in the chilled water system has been eliminated. The presence of biologicals in the water sampling at customer sites and at the EGF has been essentially non-existent.

There have been leaks found in the chilled water system. The leak originally found on Charlotte Avenue at 3<sup>rd</sup> was repaired but an additional leak may be present on 3<sup>rd</sup> Avenue due to chilled water infiltration at the CJC construction site. Chilled water continues to leak into the JKP, and CNE and TEG are investigating the source of the leak.

Mr. Jacobs reviewed the EGF (Energy Generating Facility) walkthrough and all areas are good.

Mr. Coyle reviewed the EDS (Energy Distribution System) walkthroughs. The quarterly physical walkthrough of the plant indicates it is very well maintained. The Energy Distribution System's vaults and tunnels are inspected once yearly by reviewing partial sections quarterly. The areas reviewed in the most recent quarter looked relatively good. There is room for improvement by reducing water infiltration into the vaults and addressing the corrosion of metal components within the vaults. Mr. Coyle discussed options to mitigate water infiltration and the corrosion of metal components in the vaults and tunnels. Progress is being made with new coatings on the metal components.

Mr. Jacobs continued with Natural Gas Purchasing review. The Steam Sendout was higher than what was budgeted but the fuel usage was lower. No propane was purchased for the fiscal year to date. The fuel usage was well below budget due the plant operating at a high efficiency. The plant efficiency was at 1.365 mmBTU (million BTU's) per Mlb of steam and the unit cost of fuel was at \$3.468 mmBTU, which is approximately 11.1% less than budget. The costs are expected to be lower in FY19. The pre-contingency budgeted cost for FY18 was approximately \$3.90 per mmBTU, and approximately \$3.50 per mmBTU is the current price range delivered. For FY18, the actual fuel usage was below budget. The price contingencies are included if there are any unanticipated fluctuations in the market. The values shown in the presentation do not include contingencies.

Mr. Coyle continued with the Actual and Projected Gas Cost Comparison History. Mr. Jacobs explained although there has been some small amount of hedging in FY18, and some hedging is expected in the future; gas prices have been decreasing. Current prices are expected remain below budget for FY18 and decrease even more in FY19. Mr. Jacobs and Mr. Coyle explained the graph in the presentation included propane and transportation costs. The red line on the chart notes market unit prices; the blue line notes actual unit costs in previous months and the expected unit costs in future months. The green line notes the budgeted unit costs without contingencies.

Mr. Jacobs continued with FY18 Costs to Date report. All expenditures appear to be consistent with expectations and within budget. 100% of the Debt Services has been paid. The Fixed Operating Costs (FOC) paid to Constellation was approximately 99.32% of the budget through the 4th quarter. The non-energy expenditure was approximately 88.73% of the budget. The water expenditure was approximately 99.60% of the budget. The natural gas base expenditure, including the FEA and gas consultant, was approximately 86.44% of the budget. None of the \$787,200 natural gas contingency budget has been used



for FY18. The electric expenditure was approximately 90.02% of the budget. Total expenses were approximately 91.10% of the budget and total revenues were approximately 87.75% of the budget. All of the Metro Funding Amount for the fiscal year has been transferred.

Mr. Jacobs continued with FY19 Budget report. Debt Services will have a minor decrease of less than 1% over FY18. The Fixed Operating Costs (FOC) will increase approximately 2.30%. The non-energy expenditure will be approximately 2.37% higher than in FY18. The water costs are budgeted to be 15.80% higher than in FY18. However, the fuel and electricity budgets are lower than the previous year. Natural gas contingency budget will be 3.71% higher. Total expenses will decrease by 2.33% with a similar reduction in total revenues. Metro Funding Amount will decrease by 2.96%. Board members and Mr. Jacobs discussed fiscal year 2019 budget.

Mr. Jacobs continued with the Capital Expenditure Update report (as of 06/30/18). Mr. Jacobs gave \$245,997 as the amount remaining of available funds to date for FY18. The fund money is mostly allocated for FY18 with no money going into FY19. However, this amount does not include the monthly addition of approximately \$24,000 to the R&I Fund.

The 49109 (2010 Bond Fund) remaining balance has \$107,917. Bond fund 49107 has \$33,795 remaining.

Mr. Jacobs reviewed the Active Capital Projects Review report.

DES 124 - CJC Redevelopment - the building is under construction, but the AA Birch tunnel repairs will be needed. These repairs will be made once the building roof has been constructed on the new Criminal Justice Center building.

DES 124.4 - CJC Reconnection was completed and is waiting on the instrument installation by the contractor. The building's contractor has indicated that they would need service by July 2018, which they did not meet.

DES 133 - 5<sup>th</sup> and Broadway Development- Draft contract issued to Oliver and McMillian (OMSE) for review. DES and OMSE are working on the easement to provide ventilation and DES tunnel access from new parking garage.

DES 133.1 – The site blasting is completed. DES seismographs have been removed; repairs are needed due to damage caused by the blasting. A vibration contractor was hired to assist DES during the blasting period.

DES 133.2 – The project included the stand-by equipment, rented chillers and boiler on-site at the Bridgestone Arena. This equipment was removed in February. This equipment was provided in case the blasting at the 5<sup>th</sup> and Broadway site damaged the tunnel or service to the Bridgestone was interrupted. Service to the Bridgestone was not interrupted.

DES 1033.3 – Tunnel Reinforcement – Reinforcement of the DES Broadway tunnel was completed Dec 2017. Additional repairs are needed and are projected to be started in FY19 depending on the funds available to DES.

DES 135 - A chilled water leak was discovered at 3<sup>rd</sup> Ave near Charlotte Ave and was repaired. There is at least one other leak that is believed to be near 5<sup>th</sup> Ave and Union, but the exact location has not been found. Once the 3<sup>rd</sup> Ave leak was repaired, the average flow of 80 GPM decreased to approximately 27 GPM. CNE will resume search for the 5<sup>th</sup> Ave leak after the cooling season.

DES 139 – DES Options Report Draft under review.

DES 143 – Manholes N1, N2 and S6 insulation and Repair is on hold awaiting Capital approval.

DES 144 – Manholes 6 repair- Piping structural steel cleaning, painting and replacement is in design.

DES 147 – 3<sup>rd</sup> Ave Insulation Repair – utility contractor damaged DES steam piping insulation; work completed during 4<sup>th</sup> Qtr. FY18; cost substantiation being reviewed; DES to be reimbursed

DES 148- Site I Development – Blasting began in May 2018 and is expected to be completed by the end of September 2018. CNE and TEG are monitoring the blasting with seismographs at the EGF and have developed an Emergency Response Plan.

DES 149- Repairs to the hot spot discovered on 1<sup>st</sup> and Molloy have started and are expected to be completed by 4<sup>th</sup> quarter FY18.



**Metro Nashville**  
DISTRICT ENERGY SYSTEM

DES 150- Federal Courthouse and 7<sup>th</sup> Ave Tunnel – Blasting for this site is anticipated in the fall of 2018. There is potential for damage to DES tunnel on 7<sup>th</sup> Ave. DES has developed an Emergency Response Plan to continue to provide service to affected customers should any interruption in service occur.

Karl Marietta (FVB) gave a presentation regarding the District Energy System Program Options Report.

Without further discussion, and upon a motion, the meeting was adjourned at 11:40 A.M.

The next Board Meeting will be held Thursday, November 15, 2018 at 10:00 A.M.

Prepared by: Starla Friedmann

**Starla Friedmann, Board Recording Secretary  
Board**

Date: 15 Nov. 2018

Approved: Freddie O'Connell

**Freddie O'Connell, Chair, DES Advisory**

Date: 15 Nov 2018

Approved: Bob Lackey

**Bob Lackey, DES Liaison**

Date: 15-Nov 2018