



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

May 17, 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
Nicholas Woollen
Eric Swartz
Laurel Creech (*on behalf of Nancy Whittemore*)
Steve Berry (*on behalf of Talia Lomax-O'dneal*)

Others Present:

Tim Hestle, CNE
Dan Coyle, TEG
Kevin Jacobs, TEG
Bob Lackey, DES Liaison

The meeting was called to order by the Chair and began at 10:04 A.M.

The Board welcomed the new Recording Secretary, Starla Friedmann.

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 February 15, 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 was up due to a colder winter and chilled water total costs were down. The unit cost for chilled water increased 6%. Lower consumption increases unit costs since a portion of the customer rates are independent of consumption and escalate each year.

Mr. Jacobs reviewed the Historical Unit Cost of Chilled Water. The table covered information from July 2013 to March 2018. The historic average customer cost increased only 6% over the period due primarily to the change in electric cost. More chilled water is consumed in the summer than the winter, thus total costs are higher in the summer.

Mr. Jacobs review the Historical Unit Cost of Steam performance table. The table covered information from July 2013 to March 2018. The historic average customer cost for steam decreased 35%. The lower cost of gas resulted in the lower cost of steam over this period. The average cost of gas is currently around \$3.00 per dekatherm.



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. The average condensate return from the customers is approximately 80% which is excellent. There is some weather related temperature variability on the amount of condensate returned. Mr. Taylor asked if there were any incentives to the customer to return condensate. Mr. Jacobs answered with the incentive is to educate the customer that condensate drives down their cost. Although it is part of the agreement with customers that they must return their condensate, the buried condensate piping from a couple of customers is damaged, and those customers are unable to return the condensate. Constellation does investigate and assist customers with repairs to leaks that may be in their return lines once they become known.

Constellation does a good job of maintaining the water treatment and pipes. The issue with the biologicals in the chilled water system has been eliminated. The remote sampling for biologicals at customer sites has not been measurable.

Mr. Jacobs and Mr. Coyle reviewed the EGF (Energy Generating Facility) walkthrough and all areas are good. Mr. Jacobs and 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. Board members, Mr. Coyle and Mr. Jacobs discussed options to mitigate water infiltration and the corrosion of metal components in the vaults and tunnels. Progress is being made with new coating on the metal components in some locations, and CNE and TEG continue to monitor the status of the corrosion.

Mr. Jacobs continued with Natural Gas Purchasing review. The Steam Sendout costs were higher than what was budgeted but the usage was lower. No propane was purchased for the fiscal year to date. The fuel usage was close to budget due the plant operating at a high efficiency. The plant efficiency was at 1.366 mmBTU (million BTU's) per Mlb of steam and the unit cost of fuel was at \$3.489 mmBTU, which is approximately 10.6% 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. The expectation is to remain below budget for FY18. 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 explain 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. Board members discussed gas prices and supply.

Mr. Jacobs continued with FY18 Costs to Date report. All expenditures appear to be consistent with expectations and within budget. Approximately 84% of the Debt Services has been paid. The Fixed Operating Costs (FOC) paid to Constellation was approximately 75% of the budget through slightly past the 3rd quarter. The non-energy expenditure was approximately 69% of the budget. The water expenditure was



approximately 75% of the budget. The natural gas base expenditure, including the FEA and gas consultant, was approximately 70% of the budget. None of the \$787,200 natural gas contingency budget has been used for 3rd quarter FY18. The electric expenditure was approximately 63% of the budget. Total expenses were approximately 70% of the budget and total revenues were approximately 65% of the budget. All of the Metro Funding Amount for the fiscal year has been transferred.

Mr. Lackey gave an update on the FVB retained by Metro to review options for DES future goals. Metro has received a comprehensive draft report analyzing the options. The Metro Finance department has reviewed the report; the Mayor's office is expected to schedule a meeting in the near future to discuss the report with the Consultants, representatives of the Mayor's office and the Finance Department. Chair O'Connell asked if by the next DES Board Meeting a recommendation will be available. Mr. Lackey confirmed recommendations will be available by the next DES Board Meeting.

Mr. Jacobs continued with the Capital Expenditure Update report (as of 04/20/18). Mr. Jacobs gave \$439,863 as the amount remaining of available funds to date for FY18. Mr. Jacobs noted that there had been unexpected costs due to the blasting at 5th Avenue and Broadway. Funds for monitoring and repair were required for damages due to the blasting. The fund money is mostly allocated for FY18 with no money going into FY19, but, does not include the monthly addition of approximately \$23,000 to the R&I Fund.

The Chair asked if there was any type of insurance coverage or liability to DES on the blasting damage. Mr. Lackey responded with the issue of the blasting has been discussed with the Metro Legal Department.

The 49109 (2010 Bond Fund) remaining balance has \$25,889. Bond fund 49107 has \$278,911 remaining. A total of \$439,863 remains available for distribution system related projects.

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.

DES 133 - 5th 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 5th and Broadway site damaged the tunnel or service to the Bridgestone was interrupted. Service to the Bridgestone was not interrupted.

DES 133.3 – 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 3rd Ave near Charlotte Ave and was repaired. There is at least one other leak that is believed to be near 5th Ave and Union, but the exact location has not been found. Once the 3rd Ave leak was repaired, the average flow of 80 GPM decreased to approximately 27 GPM. CNE will resume search for the 5th 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 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.



Metro Nashville
DISTRICT ENERGY SYSTEM

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

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

DES 130- Manhole B3 has been repaired, and DES has been reimbursed from the contractor responsible for damage.

DES 138- Manhole D has been repaired.

DES 141- EGF Cameras – Cameras have been installed at DES for monitoring outside activities.

DES 145- Manholes 9, 11 and K have been repaired.

Without further discussion, and upon a motion, the meeting was adjourned at 11:00 A.M.

The next Board Meeting will be held Thursday, August 16, 2018 at 10:00 A.M.

Prepared by: Starla Friedman

Jamie Hunter, Board Recording Secretary

Date: 8/16/18

Approved: Freddie O'Connell

Freddie O'Connell, Chair, DES Advisory Board

Date: 16 Aug 2018

Approved: Bob Lackey

Bob Lackey, DES Liaison

Date: 16-August 2018