



**Metro District Energy System Advisory Board
Regularly Scheduled Meeting of
May 18, 2017**

Minutes of Meeting

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

Facilitators: Harry Ragsdale, DES Project Contract Administrator and Kevin Jacobs, Thermal Engineering Group

Board Members Present:

Freddie O'Connell
Brian Taylor
Alan Robertson
Yuri Cunza
Jim Thiltgen (*on behalf of James E Harbison*)
Tom Eddlemon (*on behalf of Talia Lomax-O'dneal*)
Alexandra Ewing (*on behalf of Nancy Whittemore*)

Others Present:

Tim Hestle, CNE
Kevin Jacobs, TEG
Bob Lackey, DES Liaison
Harry Ragsdale, TEG
Jamie Hunter, DES Advisory Board Secretary

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

There being no additions, comments or edits to the minutes, the Chair made a motion to approve, it was seconded. The Board voted and approved the February 16, 2017 minutes.

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

Mr. Jacobs and Mr. Ragsdale reviewed the Customer Cost Comparison table for the previous twelve month period. On an aggregate basis for the previous twelve (12) months, the steam/chilled costs were down. There was an increase in aggregate cooling consumption by about 5%. The sale of steam for the recent months has been low in comparison to the last five (5) years.

Mr. Jacobs and Mr. Ragsdale reviewed the historic efficiency performance tables for chilled water (CHW) consumption, electric consumption, steam water consumption, steam electric consumption, steam gas consumption, and chemical costs. The historic average chilled water unit costs were down and the historic chilled water (CHW) electric costs were down by 13%. The Chair asked the probability of the low cost trend continuing. Mr. Ragsdale responded with examples including efficiency that could affect the cost. Mr. Ragsdale briefly explained the differences in water efficiencies of an existing plant and older equipment verses a new plant with newer equipment and technology.

Mr. Jacobs and Mr. Ragsdale discussed the historic water cost associated with make-up water from cooling tower blowdown process. Mr. Ragsdale explained how the billing for steam and chilled water is divided.



The Chair asked if the split billing had any impact on customers. Mr. Ragsdale clarified how the customers are billed objectively but the process will be reviewed for better accuracy.

Mr. Jacobs reviewed the Historic Steam Fuel Costs as good and below budget. Mr. Jacobs reviewed the Historic Chemical Costs budget as good. The increased cost in FY15 was due to a change in contractor. Mr. Jacobs noted the costs of the chemicals are reimbursable by the customer.

Mr. Jacobs and Mr. Ragsdale reviewed the DES Contractor Performance for the FY17 including efficiency performance tables for steam electric consumption, steam gas consumption, steam water consumption, chilled water (CHW) electric consumption, and CHW water consumption. The contractor's performance continues to remain good in all areas.

Mr. Ragsdale, Mr. Jacobs and Board members discussed equipment longevity. Mr. Ragsdale explained equipment typically last about 30 years with good maintenance. Mr. Jacobs noted chillers do not last as long but all equipment is being well maintained by Constellation. The Chair asked what would initiate the necessity to review the capital expense of replacing equipment. Mr. Ragsdale answered with discussion of the Co-Generation project; the cost reduction, the efficiency, and the benefits it would generate. Mr. Jacobs noted it is not cost effective at this time to replace the chillers.

Mr. Jacobs and Mr. Ragsdale continued with Water Treatment. Mr. Ragsdale explained the process of treatment of the hardness and biologicals in the water. Various customers are being monitored and although there are still some biologicals in the chilled water the issues have been greatly improved.

Mr. Jacobs and Mr. Ragsdale reviewed the EGF (Energy Generating Facility) walkthrough. The quarterly physical walkthrough of plant indicates it is very well maintained. The Energy Distribution System's Vaults and Tunnels are inspected once yearly by reviewing partial sections quarterly and those walked through in the most recent quarter look relatively good. There is room for improvement by reducing water infiltration and addressing the corrosion of metal components. The cost to maintain the system is approximately \$500,000. Customers pay approximately \$300,000 per year for maintenance and improvements. The city contributes about 12%.

Mr. Jacobs and Mr. Ragsdale continued with Natural Gas Purchasing review. As of March 31st, 2017 the steam send-out was 15% less than budgeted. Mr. Jacobs reviewed FY17 Gas Spending & Budget Comparison. Mr. Ragsdale explained the five year averages of usage for all customers are taken as a basis and then a contingency is added for weather and price. The price contingencies are in case there are fluctuations in the market. Mr. Jacobs continued with the FY18 Actual and Projected Gas Cost Comparison is \$5.02 per mmBTU, including contingency.

Mr. Jacobs continued with FY17 Costs to Date report. All expenditures appear to be consistent with the expectations and within budget. The expenditures are at about 75%-80% of the budget through the 3rd quarter. The non-energy expenditure is at about 85% of the budget. The water expenditure is at about 72% of the budget. The gas base expenditure includes the FEA and gas consultant and is at about 78% of the budget. None of the gas contingency has been used. The electric expenditure is at about 65% of the budget. The total expenditure is at about 73% of the budget and the total revenues are at about 70% of the budget.

Mr. Jacobs continued with the FY17 Cost and Budget comparison. The cooling tower make-up water blowdown has increased by 15% for FY17 compared to FY16. The increase is due to the conductivity of the incoming raw city water. The gas and electric are under budget making the total remaining contingency thru the 3rd quarter under budget; in comparison to the FY16 where the CHW sales were up 5.4% thru Quarter 2 and 4.2% for the fiscal year, the total water was up 3% thru Quarter 2 and 3% for FY, and the steam water was up 3% thru Quarter 2 and 22% for the fiscal year.



Mr. Jacobs continued, the FY18 Budget is based on a five (5) year average of consumptions, and has not been approved.

The Chair asked to hear the Other Board Members before next agenda items.

Mr. Lackey provided an update to the Board on the RFQ for the Third Party Review of DES Options. Mr. Lackey indicated three (3) qualified firms had proposed; HGA Architects located in Milwaukee, Wisconsin, FVB Energy located in Bloomington, Minnesota, and RDA Engineering Services located in Atlanta, Georgia.

After completion of the evaluation process FVB Energy was selected and provided a notice of intent to award pending successful contract negotiation. A meeting with FVB Energy has been scheduled for May 31st 2017, which is after the allotted time for all other proposers to appeal the selection.

Mr. Lackey proceeded to discuss Executive Order 015 and gave a brief summary of the changes. Changes included membership terms, the addition of a new private customer member to replace the downtown member, and changes to the selection criteria for the Metro Council Member representative. The Chair made a motion to approve the recommended revisions to Executive Order 015, the motion was seconded and being no further discussion, the Board voted and approved.

Mr. Lackey asked for the Chair's review and signature of a Memorandum of Understanding (MOU) with the Metro Sports Authority. Mr. Lackey noted the MOU provides DES access to Sports Authority property to place a fence around a DES manhole that provides DES service to Nissan Stadium. Under the MOU, DES agrees to be responsible for constructing, operating and maintaining the fence enclosure as described.

Mr. Jacobs continued with the Capital Expenditure Update report; the R&I fund has a remaining balance of \$19,769. The 49109-2010 Bond Fund has \$119,164 remaining and bond fund 49107 has \$1,310,910 remaining. The bond fund 49116 for the DES CHP project is on hold. There is \$1,449,843 available for expenditure on distribution system related projects.

Mr. Jacobs reviewed the Active Capital Projects Review report stating DES 061 - MH & Tunnel Steel Corrosion Repair and Prevention project is ongoing. DES 111 – Cogeneration - Combined Heat Power is on hold. DES 124 - CJC Redevelopment noting that the demolition phase has been completed and is in design phase by others. DES 130 – Manhole B3 Repair is completed and anticipated to be closed in 4th Quarter 2017. Mr. Jacobs continued with DES 134 -Union Street Service Reconnection is completed. Mr. Jacobs continued with DES 135 is a CHW leak in the construction phase. DES 137 – Addition of CHW Valves at Cordell Hull. Construction for DES 137 is completed and anticipated to be closed in 4th Quarter 2017. Mr. Jacobs continued with DES 138 Manhole D Repair to be bid and awarded construction is anticipated to start in 4th Quarter 2017.

Mr. Jacobs continued with Capital Projects in Close-out/Closed. DES 121 Misc. Manhole Repairs, DES Manhole 13 Structure Repairs, DES 128 – Manhole 12 Steam Anchor Repair and DES 129 Manhole 22B Repair are all closed.



Without further discussion, and upon a motion, the meeting was adjourned at 11:13 A.M.

The next Board Meeting will be held Thursday, August 17, 2017 at 10:00 A.M.

Prepared by: Jamie Hunter
Jamie Hunter, Board Recording Secretary

Approved: Freddie O'Connell
Freddie O'Connell, Chair, DES Advisory Board

Date: 17 Aug 2017

Date: 17 Aug 2017

Approved: Bob Lackey
Bob Lackey, DES Liaison

Date: 17 Aug 2017