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Department of Utilities
Wastewater Treatment Plant
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TO: Chairperson Joe Martin and Members of the Utilities Committee

CC: AWWTP Operations Supervisor Robert Kennedy

FROM: Utilities Director Chris Shaw

DATE: May 15, 2015

RE: *Award sole source Oil Cooler Upgrade to Siemens Energy Inc. in the amount of \$22,277.12*

BACKGROUND:

A 2011 Capital Improvement Project (CIP) for \$744,000 was approved for improvements to the Appleton Wastewater Treatment Plant's (AWWTP) Aeration System. The largest piece of equipment that was purchased was a Siemens turbine blower. The blower relies on turbine principles to induct and distribute air into tanks and channels. The air is required in order to support microlife that respire and consume pollutants.

The aeration system improvements have been successful and energy savings alone are estimated at \$150,000 annually. There exists one improvement that is being recommended which is to the turbine oil cooling system. Currently, the oil cooler system relies on a heat exchange between the plant's reclaimed final effluent (RFE) and the turbine's cooling oil. This design was due to the good quality of RFE produced at the AWWTP. Since installation, the RFE filtering system flows have been problematic. The turbine receives reduced cooling water flows which increases oil temperatures and has repeatedly shut down the turbine.

PROPOSED SOLUTION:

It is the consensus of the manufacturer, engineer and AWWTP maintenance staff to use the original equipment manufacturer (OEM) design (i.e., OEM oil cooler system) to maintain oil temperature within the turbine. I am in agreement with this assessment. As a note, RFE is used throughout the plant for similar cooling purposes.

The Siemens turbine blower is a sophisticated piece of equipment that relies on internal sensors and computer programming to maintain overall system performance. The system is also under warranty through 2014 and adding other than OEM equipment can impart

risk on potential warranty claims. Due to these circumstances, I would prefer not to seek another manufactured system or have one fabricated. I propose that the OEM equipment be directly purchased and installed by Siemens. Having the OEM equipment and installation ensures that the turbine is properly maintained and warranty integrity will not be degraded.

RECOMMENDATION:

It is recommended that the Utilities Committee award a sole source to Siemens Energy Inc. for an Oil Cooler System Upgrade in the amount of \$22,277.12. If you have any questions regarding this project please contact Chris Shaw ph: 832-5945