

ITEM #: 18  
DATE: 02-13-24  
DEPT: ELEC

**COUNCIL ACTION FORM**

**SUBJECT:       REPLACEMENT BUCKETS FOR COMBUSTION TURBINE #1 MOTOR  
CONTROL CENTER**

**BACKGROUND:**

Electric Services is currently performing a CIP project to replace outdated operational controls on Combustion Turbine #1 and #2 (CT1 and CT2). **While developing the specifications and reviewing the current infrastructure, it was determined that the current Motor Control Center (MCC) used for CT1 must also be updated. The existing MCC utilizes a proprietary communications protocol that is no longer supported by the manufacturer and replacement parts are difficult to locate, with only used parts available.**

**Replacement of the MCC will necessitate the replacement of the electrical "buckets".** A bucket is a housing that contains communications and controls equipment to start/stop and monitor the status of a single piece of equipment used by the power generating unit.

City staff, along with AP4, the consultant for the CT Controls Upgrade project, prepared a scope of work to procure engineering services to develop a design for the MCC retrofit. The MCC Retrofit project was awarded to Zachry Group. **Zachry Group helped the City determine the two most cost-effective paths to make the required changes to the MCC buckets:**

**Option 1: Retrofit equipment within each of the 23 buckets needing updates, or**

**Option 2: Replace 20 existing buckets with new buckets that contain the required equipment and fit within the existing MCC, and swap communications modules in the remaining three buckets.**

During initial discussions, Zachry Group proposed consulting directly with the original MCC manufacturer, Eaton Cutler-Hammer (now known as Eaton), to accomplish Option 2. **Because Eaton is the OEM, it is able to provide bucket replacements that fit the existing cabinet spaces and are compatible with the existing infrastructure of the MCC, while maintaining warranties for all equipment in the MCC.**

**Zachary estimates the cost of both options to be comparable. However, Option 1 (retrofitting each bucket) is complex work that is very labor intensive and comes with a higher risk of scope creep and unanticipated costs. Option 1 also threatens the unit reliability due to much longer lead times, not using equipment standard to the rest of the unit, and no equipment warranty because of retrofitting equipment from different manufacturers. Therefore, staff proposes pursuing Option 2 (replacing 20 existing buckets with new buckets, and swap communications modules in the remaining three buckets).**

**City staff received a quotation from Eaton for the replacement buckets in the amount of \$149,732.28.** The quotation includes 20 new replacement buckets that contain the required updated equipment and fit within the existing MCC, and parts to update communications on three additional buckets. The quotation is only for equipment, as Eaton does not perform installation. The City will need to separately bid the labor portion of the project to install the new MCC buckets. A project budget including these additional costs is shown below:

<b>Expenses:</b>		<b>Funding Sources:</b>	
Design (AP4)	\$149,670	CT Generation Improvements CIP (Current)	\$750,000
Design (Zachry Group)	\$96,000	CT Generation Improvements CIP (FY 2024/25)	\$600,000
Control Equipment & Installation (Estimate)	\$1,650,000	RDF Bin Renovation Project Avail. Balance	\$902,480
Replacement Buckets (This Action)	<b>\$149,732.28</b>		
Bucket Installation (Estimate)	\$23,500		
<b>TOTAL</b>	<b>\$2,068,902.28</b>	<b>TOTAL</b>	<b>\$2,243,330</b>

**The approved FY 2023/24 CIP includes a balance of \$750,000 to update the controls on both Combustion Turbines. The proposed 2024/25 CIP contains an additional \$600,000 for a total amount of \$1,350,000. After receiving input from the project consultant, AP4, it is estimated that an additional \$149,732.28 will be needed to cover all expenses. Funding to supplement these additional costs will come from savings from the RDF Bin Renovation project, which contains an available balance of \$902,480 as a result of a highly favorable construction bid, as outlined above in the table.**

**ALTERNATIVES:**

1. Waive the City’s purchasing policy requirement for formal bidding procedures and award a contract to Eaton Corporation, of Chicago, Illinois, in the amount of \$149,732.28
2. Do not award a contract at this time.

**CITY MANAGER'S RECOMMENDED ACTION:**

During the CT1 Controls Upgrade Project, staff learned that it will be necessary to replace MCC buckets in order to complete the project. The most effective and reliable option for replacing the buckets is to work with the original equipment manufacturer. Opening the specifications to other equipment suppliers would require a complex redesign of the MCC and extensive labor to retrofit a majority of the existing equipment. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, as described above.