

ITEM #: 21  
DATE: 08-08-23  
DEPT: ELECTRIC

**COUNCIL ACTION FORM**

**SUBJECT:**           **ENGINEERING SERVICES FOR GAS TURBINE-1 MOTOR  
CONTROL CENTER RETROFIT FOR POWER PLANT**

**BACKGROUND:**

The City operates two combustion turbines as secondary sources of power generation. The two combustion turbines are located approximately one mile east of the Steam Electric Plant. One of the combustion turbines is Gas Turbine-1 (GT1). GT1 is a dual-fuel capable Pratt & Whitney simple-cycle aeroderivative gas turbine which drives a Worthington expander coupled to an Electric Machinery air-cooled generator. GT1 was placed into service in 1972 and has a rated capacity of 18,000 kilowatts (18 MW).

The switches, valves, and other electrical components that operate GT1 are controlled from a centralized Motor Control Center (MCC). The MCC for GT1 was last upgraded in 2009. The communications protocol selected in the upgrade is proprietary to the manufacturer and is now obsolete. Electric Services has had several issues with communications to the MCC, which has affected unit reliability. There have also been issues with getting spares for obsolete parts.

The City also is currently performing a combustion control system upgrade for both of the combustion turbines, using AP4 as the engineering firm. AP4 does not have the capability to provide MCC engineering. It has become apparent that retrofitting the GT1 MCC controls and communication at the same time as the combustion control system upgrade project is required to assure success of both projects and improve reliability.

On June 8, 2023, a Request for Proposals (RFP) document was posted to AmesBids. On July 6, 2023, two proposals were received. Proposals were evaluated on experience, qualifications, suitability and clarity of the response, proposed timeline, and the Consultant's ability to prove the quality of services that best meets the needs of the City. Price was not a scored factor.

Two proposals were received. Staff determined the proposal from Sargent & Lundy, LLC, Chicago, IL was not responsive. The proposal from Zachry Engineering Corporation, Omaha, NE, in the amount of \$96,000, demonstrated an acceptable project understanding and presented qualified professionals for the project at an acceptable price.

The FY 2023/24 budget includes \$600,000 for the completion of Combustion Turbine #1 Controls Upgrades.

**ALTERNATIVES:**

1. Award a contract to Zachry Engineering Corporation, Omaha, NE, for Engineering Services for GT1 MCC Retrofit in an amount not to exceed \$96,000.
2. Award to another firm.
3. Reject all proposals.

**CITY MANAGER'S RECOMMENDED ACTION:**

The engineering design of the Combustion Turbine #1 MCC retrofit must be completed to ensure the success of the Combustion Turbine Controls Update project. The correct approach and timely delivery of the design is paramount. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as stated above.