

COUNCIL ACTION FORM

SUBJECT: ENGINEERING SERVICES FOR RETURN-TO-SERVICE REPAIR OF GT1 COMBUSTION TURBINE

BACKGROUND:

The City's GT1 Combustion Turbine is a 19 megawatt generating unit necessary for the City's reserve capacity requirement. It is used primarily to alleviate local and regional transmission system stability and reliability problems. The unit entered service in 1972.

In July of 2013, the first stage compressor of the engine catastrophically failed while operating, which wrecked the engine and caused significant collateral damage. A significant amount of work needs to be performed to return the combustion turbine to service. Since the amount of work is deemed to exceed the state of Iowa's "public improvement" project threshold of \$130,000, by state code the City must have an engineer licensed in Iowa prepare plans and specifications for the work. **This council action is for the approval of an engineer to perform the necessary engineering of plans and specifications for the work that needs to be performed to return GT1 Combustion Turbine to service.**

The repair and return to service of GT1 is a part of an insurance claim, whereby the City must first satisfy a \$350,000 deductible. The remaining costs associated with repairing the damage from the wreck and returning the unit to service will eventually be covered by insurance.

The work to return GT1 Combustion Turbine to service is divided into the following three scopes of work categories:

- 1) Repair or replacement of the inlet sound attenuation enclosure, plus the replacement the evaporative cooler. The evaporative cooler is a system which cools the air entering the engine making the air denser. As the air increases in density, the greater the amount of air the engine can compress and convert into thrust, which results in greater engine output.
- 2) Repair of the original engine or replacement with a refurbished engine, plus the repair or replacement of the engine's support equipment (damaged by the failure of the engine's 1st stage compressor), plus the restoration of the engine's control system, and the installation of the engine along with the necessary connections for it to be ready to operate.
- 3) Repair and/or replace the engine's exhaust plenum and silencer.

The engineering firm will produce separate plans and specifications for each of the three categories listed above.

Back in 2010, the City contracted with Black & Veatch (B&V) Corporation of Overland Park, Kansas, for a very similar scope of work. B&V's scope of work was limited to creating plans and specifications for the maintenance overhaul repair or replacement of GT1's engine (which at that time was undamaged other than wear and tear and age).

In an attempt to utilize the relevant work that B&V has already performed, the City contacted B&V and requested an expanded proposal for performing the scopes of work as described above. B&V provided a proposal to the City on a "time and material" basis for an estimated \$188,000 to accomplish the work.

City staff recommends contracting with Black & Veatch Corporation for this engineering work based on their history and acquired knowledge of GT1 as a result of the related engineering performed in 2010. **Staff also recommends that the City Council waive the City's purchasing policies requiring competitive proposals to provide for selection of this firm.**

Funding for this work will be charged to the Capital Improvements Plan (CIP) project entitled "Gas Turbine #1 Engine Replacement and Generator/Turbine Inspection and Overhaul," which has a current balance of \$1,348,455.

ALTERNATIVES:

1. Waive the City's purchasing policy requirement for competitive proposals and award a contract to Black & Veatch Corporation of Overland Park, Kansas, on a time and material (T & M) basis for an estimated total cost of \$188,000 for the engineering services including the development of plans and specifications (along with project cost estimates) necessary to return GT1 Combustion Turbine to service.
2. Reject all bids and direct staff to rebid.

MANAGER'S RECOMMENDED ACTION:

It is important that GT1 be repaired and available for service prior to next summer, due to the high price of capacity, which is escalating rapidly due to the retirement of fossil-fired generating units as a result of impending environmental regulations. Therefore, time is of the essence for this work. With their prior and closely related work history on this unit, Black & Veatch are in a unique position to respond quickly and expedite this work.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as stated above.