

ITEM#: 16
DATE: 01-10-23
DEPT: W&PC

COUNCIL ACTION FORM

SUBJECT: WPC METHANE GENERATOR ENGINE NO. 2 MAINTENANCE

BACKGROUND:

The Water Pollution Control Facility (WPCF) uses methane-fueled engines utilizing gas produced in the anaerobic digestion process. Heat is captured from the methane engines to maintain the temperature of the digesters. At the same time, the engines power electrical generators to offset approximately twenty percent of the electrical demand for plant operations.

The methane generator engine's manufacturer recommends eight-year cycles between overhauls due to the nature of gas produced by the anaerobic digestion process. The gas is referred to as "sour gas" and is harsher on the engines than natural gas because of impurities such as hydrogen sulfide and siloxanes.

Methane Generator Engine No. 2 (MG-2) is original to the plant and was installed in 1988. MG-2 was last overhauled in 2013 and is now in need of repair. Since the last overhaul, a project to replace Methane Generator Engine No. 1 with a boiler was completed. During that project, MG-2 was damaged, and an emergency repair was completed by Interstate Power Systems. The repair was sufficient at the time, but the engine is now showing decreased efficiency and needs a full overhaul with the replacement of main components such as cylinders 1, 3, and 8. Additionally, the exhaust gas heat exchanger has not been functional for several years which has decreased the efficiency of this system. Currently, MG-2 is out of operation due to the required maintenance, resulting in higher electrical costs for WPCF and the inability to fully utilize the methane.

On September 27, 2022, Council awarded a contract to Interstate Power Systems of Altoona, Iowa, in the amount of \$99,597. Included with that contract were the parts and labor to overhaul MG-2 and the labor associated with replacing the heat exchanger.

On November 4, 2022, Interstate Power Systems notified City staff that they would no longer be able to fulfill all terms of the contract. Staffing changes would no longer allow Interstate Power Systems to provide technicians with adequate expertise to complete the overhaul of MG-2 or replacement of the exhaust gas heat exchanger. Interstate Power Systems had already ordered the necessary parts for the overhaul and has offered to provide them at cost to the City. **This would benefit Interstate by removing the expensive parts from their inventory and would benefit the City by eliminating long lead times for delivery of the parts by a new contractor.**

A Change Order is necessary to remove the labor from the original contract and to account for core charges on a water pump and remanufactured heads. Core charges are incentives for the City to return the old parts to Interstate Power Systems so they can be remanufactured and resold. They are considered deposits that will be paid by the City upon delivery of the new parts and will be refunded when the old parts are returned to Interstate Power Systems for remanufacturing and resale.

City staff has reviewed the costs for the individual parts and compared them to cost information available from other vendors. The costs are in line with the other vendors and staff believes taking delivery of the parts at this time will prevent supply chain delays in the future. A summary of the changes is included below.

Original Contract Amount	\$99,597.00
Change Order #1	
Labor for MG-2 overhaul and heat exchanger replacement	(\$58,933.95)
Core Charges – Water Pump/Remanufactured Heads	\$7,495.55
Core Charge Credit	(\$7,495.55)
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Revised Contract Amount	\$40,663.05

City staff is currently developing plans and specifications to solicit bids for the labor to complete the overhaul of MG-2 and replace the exhaust gas heat exchanger, utilizing the parts purchased through Interstate.

ALTERNATIVES:

1. Approve Change Order No. 1 deducting \$58,933.95 from the contract with Interstate Power Systems of Altoona, Iowa.
2. Do not approve the change order at this time.

CITY MANAGER’S RECOMMENDED ACTION:

Interstate Power Systems is no longer able to provide competent technicians for the overhaul of Methane Generator Engine No. 2 or replacement of the exhaust gas heat exchanger. They have offered to still provide to the City the parts they already have in their possession. City staff believes procuring the necessary parts at this time will expedite repairs in the future following a new competitive solicitation for labor. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, as described above.