

**COUNCIL ACTION FORM**

**SUBJECT:**           **METHANE GENERATOR ENGINE NO. 2 MAINTENANCE**

**BACKGROUND:**

The Water Pollution Control Facility (WPCF) utilizes combined heat and power by operating methane generator engines from gas produced as a byproduct of the anaerobic digestion process. The methane generator engines, in turn, supply heat to maintain the temperature of the digesters and offset approximately twenty percent of the electrical costs for plant operations.

The methane generator engine's manufacturer recommends 8-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.**

The methane generator engines are unique and require specialized knowledge and expertise that has been demonstrated by Interstate Power Systems. **They have performed several economical upgrades to the cogeneration system, and the cost for the proposed work is consistent with previous repairs. Staff has discussed this project with Purchasing to confirm it meets the single source purchasing requirements. For these reasons, staff is recommending single sourcing this work through Interstate Power Systems.**

**Expenses:**

Generator Overhaul (parts & labor)	\$ 91,247
Heat Exchanger Replacement (labor only)	\$ 8,350
Total Maintenance Costs	\$ 99,597

**The adopted CIP includes \$250,000 for maintenance associated with the cogeneration system.**

**ALTERNATIVES:**

1. Authorize the procurement of single-source methane generator engine services, in accordance with the adopted Purchasing Policies, and award a contract to Interstate Power Systems of Altoona, Iowa, in the amount of \$99,597.
2. Do not approve the procurement for single-source methane generator engine services and seek proposals from a competitive bid process.
3. Do not take any action at this time and provide direction to staff on the future of the engines.

**CITY MANAGER'S RECOMMENDED ACTION:**

The methane generator engines are critical infrastructure for offsetting electrical costs at the WPCF. Currently, MG-2 is not functioning leading to increased electrical costs. It is important to complete these repairs in a timely manner to allow electrical cost savings. Interstate Power Systems has provided exceptional service in the past and staff is confident in their ability to complete this project at an appropriate cost.

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