



COMMISSION FILE NO: 24-140-11 **DATE INTRODUCED:** November 4, 2024

INTRODUCED BY: Executive Director (Signature on File in the Office of the Commission)

REFERRED BY COMMISSION CHAIRPERSON TO: Operations Committee

RELATING TO: Contract J06075C34, GE Turbine Starting Engine Conversion at Jones Island Water Reclamation Facility

SUMMARY:

The Commission is requested to authorize the Executive Director to execute on behalf of the District Contract J06075C34, GE Turbine Starting Engine Conversion at Jones Island Water Reclamation Facility (JIWRF), to Blade Runner Turbomachinery Services, LLC, (BRTS) in the amount of \$385,800. BRTS is the sole source supplier of these services.

JIWRF has four electrical power sources – two feeds from We Energies (Harbor and Dewey), three Solar turbines (using landfill gas or natural gas), and a single natural gas-powered turbine (GE turbine). Due to various limitations of each power source, all four sources may be used either individually or in combination to provide adequate reliability for plant operations, particularly during wet weather. The GE turbine is generally used as a backup source of power generation to the Solar turbines using landfill gas; however, it is often used during wet weather when the inline storage system (ISS) pumps are used. The GE turbine has higher output capacity as compared to the Solar turbines, and the Solar turbines are unable to meet peak plant demand when the ISS pumps are used. In addition, using the GE turbine instead of We Energies as a power source avoids expensive peak demand charges that We Energies levies. It is vital to keep the GE turbine in reliable condition, so it is available when needed to provide reliable power for plant operations and to avoid expensive demand charges.

ATTACHMENTS: BACKGROUND KEY ISSUES RESOLUTION
FISCAL NOTE S/W/MBE OTHER _____

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10-18-24

COMMITTEE ACTION: _____ **DATE:** _____

COMMISSION ACTION: _____ **DATE:** _____

SUMMARY (Cont'd)

Contract J06075C34, GE Turbine Starting Engine Conversion at Jones Island Water Reclamation Facility

The GE turbine is a General Electric Frame 5 turbine generator that was installed in 1972 and has been in service for 52 years. To start the turbine, a 1972 Cummins diesel engine is used to bring the turbine rotor and accessory pumps up to speed. The District has been unable to locate and procure replacement parts for the diesel engine. The engine has not been overhauled for nearly 15 years, and the condition of the internal components of the engine is unknown. This leaves the District at risk of being unable to use the GE turbine, as the diesel engine is the only means to start it.

District staff contacted the original equipment manufacturer of the existing starting engine, that stated that it no longer makes parts for and does not offer a modern replacement of the existing engine. District staff also contacted several other diesel engine sales and service centers that specialize in obsolete diesel driven equipment. All indicated that there is no modern diesel engine that will work for this application.

Once it was determined that no modern diesel engine will fit this unique application, District staff contacted BRTS, as they had performed a major overhaul of the GE Turbine in 2023. BRTS indicated that they possess two Detroit Diesel model 12V-71 engines from a similar vintage GE turbine which may work for the District's application. District staff consulted with Pond & Lucier, a firm that the District frequently uses for turbine inspections and has intimate knowledge of the District's turbine. It was determined that the Detroit Diesel engines are a match for the District's application. Additionally, this model engine is still supported by the Detroit Diesel. Given these circumstances, District staff proposes a contract with BRTS to provide the District with an overhauled Detroit Diesel engine.

Under this contract, BRTS will:

- Perform a major overhaul on one of the Detroit Diesel starting engines.
- Disconnect and remove the existing diesel starting engine.
- Install the newly overhauled Detroit Diesel starting engine.
- Provide the District with the other Detroit Diesel engine to be used as a spare.

The duration of this contract is 90 days.

RESOLUTION

Contract J06075C34, GE Turbine Starting Engine Conversion at Jones Island Water Reclamation Facility

RESOLVED, by the Milwaukee Metropolitan Sewerage Commission, that the Executive Director is authorized to execute Contract J06075C34, GE Turbine Starting Engine Conversion at Jones Island Water Reclamation Facility, with Blade Runner Turbomachinery Services, LLC, in the amount of \$385,800.