

Business Item

Environment Committee



Committee Meeting Date: July 23, 2024

For the Metropolitan Council: August 14, 2024

Business Item: 2024-169

Metropolitan Water Resource Recovery Facility (WRRF) Steam Turbine Generator Sole Source Contract 24P199

District(s), Member(s):	District 13, Council Member Chai Lee
Policy/Legal Reference:	FM 14-2 Expenditures for the Procurement of Goods, Services, and Real Estate Policy
Staff Prepared/Presented:	John Tierney, Mechanical Maintenance Manager, Maintenance and Security, 651-602-8307 Stephen Norton, Principal Engineer, Plant Engineering, 651-602-1551
Division/Department:	Environmental Services / Treatment Services; Maintenance and Security

Proposed Action

That the Metropolitan Council authorize the Regional Administrator to execute a sole source contract 24P199 with Siemens-Energy to provide goods and services for the Metropolitan WRRF steam turbine generator in an amount not to exceed \$3,500,000.

Background

The G7 steam turbine generator located in the solids management building at the Metropolitan WRRF generates electricity from heat energy recovered from the incineration process. The energy recovered from the steam turbine generator reduces purchased electricity and offsets carbon emissions from fossil-fuel-based electricity. The G7 steam turbine generator, which was taken down for a five-year preventative maintenance inspection, requires rehabilitation to be brought back online.

Tuthill Energy Systems furnished the original G7 steam turbine generator system (turbine, generator, and controls) and was competitively procured in 2000. Tuthill Energy Systems was bought by Dresser Rand in 2005, and Siemens-Energy in 2015. Siemens-Energy is the current original equipment manufacturer (OEM).

A preventative maintenance inspection on the turbine found internal corrosion / erosion, and bowed rotor shaft. The work for the turbine repair is being completed under Metro Plant Steam Turbine Sole Source Contract 23P036 with Siemens-Energy to provide replacement parts, repair, installation, and commissioning services in an amount not to exceed \$2,000,000. Business Item 2023-83 was approved by the Council on April 26, 2023.

This sole source contract with Siemens-Energy will complete the following:

1. G7 Generator Replacement – A third-party inspection found a damaged rotor pole. The inspection company and the Council's engineering consultant both recommend replacement of the existing generator with a new generator due to the high cost of repair, risk of future failure, and compatibility with the Metropolitan WRRF's electrical load requirements.

2. G7 Controls Replacement – The current G7 controls are roughly 20 years old and near the end of service life. The current Allen Bradley SLC programmable logic controller (PLC) is unsupported, and no spare parts are available. The recommendation is to replace the current G7 steam turbine generator system controls.
3. Five Year Service Contract (G7 and G9) – A service contract is needed to maximize the reliability of the steam turbine generators at the Metropolitan WRRF. The service contract includes the following:
 - Planning and coordination of inspections and providing spare parts.
 - Four annual steam turbine inspections, two generator inspections, and one major overhaul for the G7 steam turbine generator.
 - Four annual steam turbine inspections and one major overhaul for the G9 steam turbine generator.

A sole source contract with Siemens-Energy is recommended for the following reasons:

- Siemens-Energy is the OEM.
- Siemens-Energy is best suited to provide unit responsibility for the G7 steam turbine generator and controls.
- Using non-OEM components would require re-engineering and greater risk not meeting form, fit, and function of original components.
- Siemens-Energy is best suited to provide a service contract that maximizes run time.

The cost of the goods and services to be completed under this sole source are outlined below:

• Furnish, Install, and Commission	
○ G7 Generator Replacement	\$1,800,000
○ G7 Controls Replacement	\$300,000
• Five Year Service Contract (G7 and G9)	<u>\$1,400,000</u>
	\$3,500,000

The price of parts and services are comparable to typical industry costs and have been determined to be fair and reasonable.

Rationale

The execution of goods and services contract in excess of \$500,000 requires Council approval.

Thrive Lens Analysis

This action advances the Thrive Outcome of Stewardship by efficiently and effectively preserving our regional wastewater treatment plant assets.

Funding

Funding is provided in the authorized capital program.

Small Business Inclusion

The Office of Equity and Equal Opportunity did not establish a goal for this contract as this procurement utilizes an approved Sole Source.

