
File #: 2023-2915

Agenda Date: 4/26/2023

Agenda Item No: 13.

FROM: Robert Thompson, General Manager
Originator: Mike Dorman, Acting Director of Engineering
SUBJECT:

ENGINE AND GENERATOR OVERHAULS AT PLANT NO. 1 AND 2, CONTRACT NO. J-135B

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

Approve the addition of funds to include generator overhauls as part of the construction contract with Cooper Machinery Services LLC for the Engine and Generator Overhauls at Plant Nos. 1 and 2, Contract No. J-135B, in the amount of \$1,637,117 (5.6%), for a total construction contingency of \$4,573,220 (15.6%).

BACKGROUND

In the early 1990s, Orange County Sanitation District (OC San) installed eight internal combustion engines manufactured by Cooper Bessemer at the Central Generation (CenGen) facilities at Plant Nos. 1 and 2 to generate electricity using digester gas. During normal operating conditions, the CenGen facilities supply approximately 60% of the electricity at Plant No. 1 and 95% of the electricity at Plant No. 2.

In July 2022, a construction contract was awarded to Cooper Machinery Services LLC for Engine and Generator Overhauls at Plant No. 1 and 2, Contract No. J-135B. The work under this contract overhauls four engines and refurbishes five generators.

RELEVANT STANDARDS

- Protect OC San assets
- Maintain a proactive asset management program
- 24/7/365 treatment plant reliability
- Comply with environmental permit requirements
- Use all practical and effective means for resource recovery

PROBLEM

The original contract provided for five generators to be sent to the factory to be tested, cleaned, and minor repairs to be performed at the same time their respective engines are being overhauled. While performing repairs to the first two generators of this project, it was found the rotors and stators both

needed to be rewound, which was beyond the original scope of work. During a visual inspection, the stator and rotor windings had heavy carbon buildup with some visible insulation damage in one of the generators. Field winding tests showed signs of insulation deterioration with one stator winding failing the test. Generator cable leads were also found to be cracked and the generator bearings required refurbishment. Due to these issues, the two generators were rewound and refurbished to restore original function with the Board-approved contract contingency.

The remaining three generators are in similar condition and have similar run hours as the first two generators and it is anticipated that steam cleaning and baking as required by the original contract will not be an effective solution to extend the useful life of the generators.

PROPOSED SOLUTION

Approve additional funds in the amount of \$1,637,117 for the three remaining generators to be rewound and refurbished to ensure their function and reliability, and to ensure the work performed can be covered under warranty.

TIMING CONCERNS

The third generator is scheduled to return to the factory for cleaning in May 2023, so the additional work must be authorized before to prevent schedule impact or additional costs.

RAMIFICATIONS OF NOT TAKING ACTION

If the recommended action is not approved, the factory will clean and test the generators as required by the existing contract. If defects found in the prior two units are found in the next three units, the units will need to be rewound similar to the first two units. The cost to clean, bake, and test the units will be lost. The intent of this project is to rebuild the engines and generators to provide another 25 years of service, so staff recommends the added service to ensure the generator can match the projected engine life. In addition, OC San could face potential SCAQMD permit violations.

PRIOR COMMITTEE/BOARD ACTIONS

July 2022 - Awarded a Sole Source Service Contract to Cooper Machinery Services LLC for Engine and Generator Overhauls at Plant No.1 and 2, Project No. J-135B, for a total amount of not to exceed \$29,361,029; and approved a contingency of \$2,936,103 (10%).

March 2021 - Awarded a Sole Source Service Contract to Cooper Machinery Services LLC to provide a Central Generation Engine No. 1 Overhaul at Plant No.1, per Proposal 210204-839, for a total amount of not to exceed \$3,705,932; and approved a contingency of \$741,186 (20%).

ADDITIONAL INFORMATION

The overhaul of two generators, including the rewinding, has been successfully completed and both generator/engine sets are in operation as of March 2023 under the current contract with Cooper Machinery Services LLC.

Although the approved contract contingency is sufficient to complete the work, it will exhaust the contingency remaining and leave very little funds for unforeseen work needed when completing the overhaul of the remaining engines.

CEQA

The project is exempt from CEQA under the Class 1 categorical exemptions set forth in California Code of Regulations Section 15301.

FINANCIAL CONSIDERATIONS

This request complies with authority levels of OC San's Purchasing Ordinance. This item has been budgeted (Adopted Budget, Fiscal Years 2022-2023 and 2023-2024, Section 8, Page 42, Central Generation Engine Overhauls at Plant No. 1 and 2, Project No. J-135) and the budget is sufficient for the recommended action.

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Presentation

SN:tk