



Orange County Sanitation District

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BOARD OF DIRECTORS

Agenda Report

File #: 2019-796

Agenda Date: 4/22/2020

Agenda Item No: 2.

FROM: James D. Herberg, General Manager
Originator: Kathy Millea, Director of Engineering

SUBJECT:

PLANT NO. 2 CENTRAL GENERATION STEAM TURBINE REHABILITATION, PROJECT NO. MP-105

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

- A. Approve a Change Order to the Sole Source Purchase Order with Dresser-Rand for the Central Generation Steam Turbine Rehabilitation at Plant No. 2, for an additional amount not to exceed \$238,796 plus applicable taxes and shipping, for a total amount not to exceed \$484,220 plus applicable taxes and shipping; and
- B. Decrease contingency from \$49,085 (20%) to \$12,271 (5%).

BACKGROUND

The Orange County Sanitation District (Sanitation District) operates eight Central Generation engines between both treatment plants. The engines generate approximately two-thirds of the power demand and the majority of the process heat used in the solids digestion process. The Plant No. 2 facility also includes a steam turbine to make up to 1 MW of additional electrical energy from waste engine exhaust heat.

RELEVANT STANDARDS

- Maintain a proactive asset management program
- Use all practical and effective means for recovering energy

PROBLEM

In March 2018, the Board of Directors approved a sole source purchase order with Dresser-Rand, the successor company to the original steam turbine manufacturer, to complete an assessment and standard overhaul. Staff had anticipated that if the turbine's rotor was in poor condition, a spare rotor in the Sanitation District warehouse could be used to complete the rebuild. After removal and disassembly of the steam turbine, Dresser-Rand's assessment found the rotor in the turbine could not be reliably refurbished. Also, it was subsequently determined that the Sanitation District's spare rotor in its warehouse had already been used and could also not be reliably refurbished. To provide a

functional steam turbine system, a new rotor is needed, along with additional repairs identified by the disassembly assessment.

PROPOSED SOLUTION

Approve a change order for the purchase of a new rotor and additional repairs identified by the assessment. The original purchase order was for \$245,424. The proposed Change Order is for an additional \$238,796 for a total of \$484,220. Now that the assessment is complete, the original approved contingency can be reduced from 20% to 5% to match the reduced uncertainty of the remaining work.

TIMING CONCERNS

Without the additional repairs and replacement of the rotor, the steam turbine system could not be operated and annually 3.1 million kWh of electric power would not be captured.

RAMIFICATIONS OF NOT TAKING ACTION

Failure to take action will reduce electricity generation, resulting in an annual cost of approximately \$125,000 for additional electricity purchases.

PRIOR COMMITTEE/BOARD ACTIONS

December 2018 and May 2019 - Approved modifications to the Sanitation District's standard Terms and Conditions following negotiations with Dresser-Rand.

March 2018 - Approved a Sole Source Purchase Order to Dresser-Rand for the assessment and standard overhaul of the Steam Turbine at Plant No. 2, for an amount not to exceed \$245,424, including applicable tax and freight, and a contingency of \$49,085 (20%).

ADDITIONAL INFORMATION

The Plant No. 2 steam turbine has been in operation for approximately 175,000 hours, with 70,000 hours (approximately 8 years) since the last overhaul. A thorough assessment of the steam turbine and supporting safety systems was needed to identify, address, and correct any deficiencies.

CEQA

The project is exempt from CEQA under the Class 1 categorical exemptions set forth in California Code of Regulations Sections 15301 because the project involves repairs, replacement, and/or minor alteration of existing facilities involving no expansion of use or capacity. A Notice of Exemption was filed with the OC Clerk-Recorder on June 4, 2019 after the Sanitation District's Board of Directors approved the assessment and standard overhaul.

FINANCIAL CONSIDERATIONS

This request complies with authority levels of the Sanitation District's Purchasing Ordinance. This item has been budgeted in the FY19/20 Budget Update, Operations and Maintenance (Line Item:

Repairs and Maintenance, Page 47).

ATTACHMENT

The following attachment(s) may be viewed on-line at the OCSD website (www.ocsd.com) with the complete agenda package:

N/A

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