

## Agenda Report

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

**SUBJECT:**

**ELECTRICAL POWER DISTRIBUTION SYSTEM IMPROVEMENTS, PROJECT NO. J-98**

**GENERAL MANAGER'S RECOMMENDATION**

RECOMMENDATION:

- A. Approve a Professional Services Agreement with SEL Engineering Services, Inc. to provide final design, programming, testing, commissioning, and training for a load-shedding system and electrical power protective relay system for Electrical Power Distribution System Improvements, Project No. J-98, for a total amount not to exceed \$1,296,878; and
- B. Approve a contingency of \$129,687 (10%).

**BACKGROUND**

The electrical distribution systems at Plant Nos. 1 and 2 are critical to ensure power supply to all Orange County Sanitation District (Sanitation District) plant facilities at all times. The electrical distribution system includes distribution centers, power buildings, and electrical rooms throughout the plants. These facilities use switchgear and automatic transfer switches to distribute Southern California Edison (SCE), Central Generation System (Central Generation), and standby generator power.

**RELEVANT STANDARDS**

- 24/7/365 treatment plant reliability

**PROBLEM**

Plant No. 1 does not have an automated load-shedding system in place. In the event of an SCE outage, electrical maintenance staff at Plant No. 1 must reconfigure the electrical system located throughout the plant. If non-critical loads are not switched off in time, Central Generation is unable to maintain the load and shuts down. After a shutdown, staff must manually initiate restarting of equipment in a particular sequence to avoid overloading of the Central Generation. This is a time-consuming and inefficient means of operating the electrical distribution system, particularly during emergency events.

Plant No. 2 is in the process of adding an automated load-shedding system to much of the plant under a separate project. Electrical Power Distribution System Improvements, Project No. J-98, will extend the load-shedding system to the remainder of Plant No. 2.

Implementation of load-shedding and protective relaying systems requires specific expertise in programming, high-speed network design, and configuration to guarantee the system performance. Timing and system performance are essential to quickly shed loads before Central Generation is overloaded and to reduce arc flash hazards using high speed relay-to-relay communications. The load-shedding controller also has proprietary logic at the core of its function that only Schweitzer can configure.

## **PROPOSED SOLUTION**

Award a Professional Services Agreement to Schweitzer to provide qualified staff with extensive experience in designing, programming, configuring, testing, and commissioning load-shedding and protective device systems.

## **TIMING CONCERNS**

The Professional Services Agreement is required to complete final network and communications design and detailed drawings for use by the professional design services consultant on the project and programming, and factory testing of the load-shedding system for the project construction contract. A delay in issuing this Professional Services Agreement may impact the schedule and costs of the project.

## **RAMIFICATIONS OF NOT TAKING ACTION**

If no action is taken, a load-shedding system could not be implemented. The electrical distribution system at Plant No. 1 would remain vulnerable to SCE outages causing disruption of service to process areas.

## **PRIOR COMMITTEE/BOARD ACTIONS**

March 2018 - Authorized staff to specify Schweitzer Engineering Laboratories as the sole source provider for current and future projects, equipment, materials, and services for electrical power system protective relays and load-shedding systems at Plant Nos. 1 and 2.

## **ADDITIONAL INFORMATION**

In 2018, the Board approved Schweitzer as the sole source provider for load-shedding and protective relay systems for projects such as this. The first of these sole source agreements was issued to Schweitzer under Outfall Low Flow Pump Station, Project No. J-117B, to implement a load-shedding system at Plant No. 2.

Staff worked with Schweitzer to develop the detailed professional services scope of work to ensure that the required elements met the needs of the project. A review of the preliminary and final proposed level of effort was conducted based on the Sanitation District's experience programming control systems and performing factory testing and field commissioning. Based on this review, staff

determined the negotiated fee to be fair and reasonable for these services.

## **CEQA**

The project is exempt from CEQA under the Class 1, 2, and 3 categorical exemptions set forth in California Code of Regulations Sections 15301, 15302, and 15303. These three sections are exempt from CEQA projects involving repair, replacement, and or minor alteration of existing facilities that have no expansion of use or capacity, replacement of existing utilities, and installation of small new equipment. A Notice of Exemption will be filed with the OC Clerk-Recorder after the Sanitation District's Board of Directors approves the Professional Design Services Agreement.

## **FINANCIAL CONSIDERATIONS**

This request complies with authority levels of the Sanitation District's Purchasing Ordinance. This item has been budgeted, (Budget Update FY19-20, Appendix A, Page A-8). The project budget is sufficient for the recommended action.

## **ATTACHMENT**

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

- Professional Services Agreement

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