Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

File #: 2023-2959 **Agenda Date:** 12/6/2023 **Agenda Item No:** 5.

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

SUBJECT:

PROCESS SIMULATION MODEL DEVELOPMENT FOR THE CENTRAL GENERATION FACILITIES, PROJECT NO. PS21-07, SPECIFICATION NO. CS-2023-1404BD

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

A. Approve a Professional Services Agreement with Intelliflux Controls, Inc. to provide Process Simulation Model Development for the Central Generation Facilities, Project No. PS21-07, Specification No. CS-2023-1404BD, for a total amount not to exceed $150,308; and

B. Approve a contingency of $15,030 (10%).

BACKGROUND

The Central Power Generation Facilities (CenGen) at the Orange County Sanitation District (OC San) Reclamation Plants No. 1 and No. 2 have been in operation since 1993, providing power and heat to support overall facility operation. At the heart of these facilities are stationary reciprocating internal combustion engine-generator sets (gensets) - three at Plant No. 1 and five at Plant No. 2. To support the operation of the gensets and downstream process, various types of equipment such as pumps, heat exchangers, pressure vessels, piping, and valves are required. Having been in operation for approximately 30 years, CenGen has adapted with time as modifications have been made to support its operation.

RELEVANT STANDARDS

- 24/7/365 treatment plant reliability
- Maintain a proactive asset management program
- Commitment to safety & reducing risk in all operations
- Maintain a culture of improving efficiency to reduce the cost to provide the current service level or standard
- Use all practical and effective means for resource recovery

PROBLEM

CenGen system complexity, equipment degradation, and process changes over the past 30 years has resulted in challenges when determining how to best operate the system, properly maintain equipment, and optimize overall performance for current and future conditions. Current operation and maintenance methods do not optimize resources, costs, or energy production and cannot be improved upon without further study.

PROPOSED SOLUTION

Prepare separate engineered simulation process models (digital twins) of CenGen at Plant No. 1 and Plant No. 2. Each model will encompass all major and associated processes that start or end at CenGen including the hot water and chilled water loops, associated boilers and chillers, and other related processes that influence CenGen. These digital twins will provide methods to record and track equipment performance, reveal system weaknesses, identify areas of improvement, and better predict asset condition and failure potential before it occurs.

TIMING CONCERNS

Operational savings may not be achieved, operational improvements cannot be realized, and equipment performance cannot be evaluated until the completion of this study.

RAMIFICATIONS OF NOT TAKING ACTION

Not completing this study will result in no change to the current operation of the CenGen facilities.

PRIOR COMMITTEE/BOARD ACTIONS

N/A

ADDITIONAL INFORMATION

Consultant Selection:

OC San requested and advertised for proposals for Process Simulation Model Development for the Central Generation Facilities, Project No. PS21-07, Specification No. CS-2023-1404BD, on July 20, 2023. The following evaluation criteria were described in the RFP and used to determine the most qualified Consultant.

CRITERION	WEIGHT
1. Qualifications & Experience of Firm	25%
2. Staffing & Project Organization	20%
3. Work Plan	20%
4. Presentation	15%
5. Cost	20%

Two proposals were received on August 29, 2023, and evaluated in accordance with the process set forth in OC San's Purchasing Ordinance by a pre-selected Evaluation Team consisting of the following OC San staff: Engineering Supervisor, Principal Information Technology Analyst, Engineer (Project Engineer), and Engineer.

The Evaluation Team first reviewed and scored the proposals based upon the criteria listed above, other than cost.

Rank	Proposer	Qualifications of the Firm (Max 20%)	Staffing and Project Organization (Max 25%)	Work Plan (Max 20%)	Subtotal Score (Max 65%)
1	Schneider Electric USA, Inc.	18%	21%	16%	55%
2	IntelliFlux Controls, Inc.	17%	18%	17%	52%

Both Schneider Electric USA, Inc. and IntelliFlux Controls, Inc. were invited to provide a presentation to the evaluation committee. The presentations were conducted on October 11, 2023. Following the presentations, the Evaluation Team ranked the firms based on both the proposals and presentations using the evaluation criteria and weighting listed above.

Rank	Proposer	Subtotal Score (Max 65%)	Presentation (Max 15%)	Total Score without Cost (Max 80%)
1	Schneider Electric USA, Inc.	55%	12%	67%
2	IntelliFlux Controls, Inc.	52%	12%	64%

Both proposals were accompanied by a sealed cost proposal. Both cost proposals were opened.

Rank	Proposer	Subtotal Score (Max 65%)	Presentation (Max 15%)	Cost (Max 20%)	Total Weighted Score (Max 100%)
1	IntelliFlux Controls, Inc.	52%	12%	20%	84%
2	Schneider Electric USA, Inc.	55%	12%	7%	74%

Both firms were requested to submit a Best and Final Offer (BAFO) by October 26, 2023. Both firms submitted a BAFO on the date identified above. Following the BAFO, the Evaluation Team ranked

the firms based on proposals, presentations, and BAFOs using the evaluation criteria and weighting listed above.

Rank	Proposer	Subtotal Score (Max 65%)	Presentation (Max 15%)	Cost (Max 20%)	Total Weighted Score (Max 100%)
1	IntelliFlux Controls, Inc.	52%	12%	20%	84%
2	Schneider Electric USA, Inc.	55%	12%	6%	73%

Review of Fee Proposal and Negotiations:

Proposer	Amount
Intelliflux Controls, Inc.	$150,308
Schneider Electric USA, Inc.	$470,830

Staff recommends approving a Professional Services Agreement to Intelliflux Controls, Inc. for $150,308. A contingency of 10% is recommended in case unanticipated changes are needed.

CEQA

This is not a project as defined by CEQA, therefore CEQA does not apply.

FINANCIAL CONSIDERATIONS

This request complies with the authority levels of OC San's Purchasing Ordinance. This item has been budgeted (Budget Update, Fiscal Year 2023-2024, Appendix A, Page A-9, Planning Studies Program, Project No. M-STUDIES) and the budget is sufficient for the recommended action.

ATTACHMENT

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

- Professional Services Agreement

BT:tk