



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

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DATE: February 15, 2017

SUBJECT: Findings for Carmen Powerhouse Turbine-Generator Overhaul and Design-Build Process

OBJECTIVE: Invitation to Comment on the Process to Obtain Board Approval for the Use of an Alternative Procurement Process

Overview

The Carmen Powerhouse turbine-generator overhaul is a project that requires design, fabrication, and construction of a complex system of highly specialized mechanical and electrical components. The industry standard approach for successfully integrating this type of complex system from design through construction is to package the entire project for performance by a single contractor. This approach is commonly used because collaboration with the contractor during design enables an owner to optimally balance equipment costs, power generation, and the effective operating range for the turbine-generator system.

This approach is categorized as a “design-build” type project, which requires an Alternative Procurement process. EWEB staff must obtain Board approval to proceed with issuing a competitive request for proposals (RFP) that will lead to the development of a design-build contract. RFP proposal evaluation will rely on weighted criteria including equipment cost, value of anticipated power production, and contractor experience.

Discussion

Because of the electro-mechanical complexities of this project and the highly-specialized expertise needed for successful implementation, the design-build process is considerably more beneficial than using the conventional design-bid-build process and is the industry standard process for this type of work. EWEB peers, including the Army Corps of Engineers, Hydro Quebec, and Tennessee Valley Authority commonly use this approach for their turbine-generator overhauls.

A design-build process is also often used for complex and custom projects, where the manufacturer of the new equipment is also best equipped to perform the detailed design. Proposers may include a single contractor for all services or may be comprised of a team of contractors working under a prime contractor. When the design-build process is used, the contractor is responsible for the entire project, including the detailed turbine-generator design and implementation of the design. Benefits to this process are summarized below.

- It is highly beneficial to have the construction-phase contractor, and the engineer responsible for detailed design, on the same team. This arrangement not only helps foster value engineering perspectives, it alleviates concerns with design coordination, contractual liability, equipment selection, and early equipment procurement, which can lead to substantial cost savings for EWEB and its customers.
- The design-build process allows for contractor selection using a Request for Proposals process that encourages objective selection, including identified qualitative and quantitative criteria (e.g. value engineering, experience, quality product, and price.) The RFP process helps to ensure that quality and safety standards meet EWEB requirements. If a traditional design-bid-build was used, only the lowest bid could be selected.
- The RFP will be advertised nationally to ensure competitive proposals.

Quality assurance for EWEB preferences, design, and workmanship will be achieved through the employment of a consultant experienced with similar projects. The consultant will work with the EWEB Engineering Department staff to develop performance specifications, which will be the foundation of the Request for Proposals.

The design, fabrication, and implementation of this project is expected to take between 18 and 30 months. The latest engineering estimate of the contract value is approximately \$14 million. Once the design-build team is selected, EWEB will work with them to value engineer, optimize scope, and ensure that all project costs effectively deliver the necessary safety and equipment reliability improvements.

This Public Notice is being posted as an invitation to the business community and the general public to share their comments and concerns regarding the utilization of this alternative procurement process during the Public Comments segment of the March 7, 2017 EWEB Board of Commissioners meeting.

Board Action

EWEB Staff have requested Board approval of a Design-Build Alternative Procurement process to select a contractor using a Request for Proposals process at the March 7, 2017 Board meeting.

If there are any questions or if more information is needed, please contact Sandra Hahn, 541-685-7163; Sandra.Hahn@eweb.org.

EWEB Board Consent Calendar Request

For Contract Awards, Renewals, and Increases

The Board is being asked to approve a **Design-Build Alternative Contracting process** to select a contractor, utilizing a competitive RFP, for **the detailed design and refurbishment of a Carmen turbine generator.**

Board Meeting Date: March 7, 2017

Project Name/Contract#: 013-2017 Carmen Powerhouse Turbine Generator Refurbishment

Primary Contact: Mel Damewood Ext. 7145

Purchasing Contact: Sandra Hahn Ext. 7163

Contract Amount:

Original Contract Amount: \$ no amount process approval only

Additional \$ Previously Approved: \$ NA

Invoices over last approval: \$ NA

Percentage over last approval: NA %

Amount this Request: \$ N/A

Resulting Cumulative Total: \$ N/A

Contracting Method:

Method of Solicitation: Alternative Contracting Process

If applicable, basis for exemption: EWEB Rule 5-0600

Term of Agreement: Through Spring 2020

Option to Renew? No

Approval for purchases "as needed" for the life of the contract NA

Proposals/Bids Received (Range): NA

Selection Basis: NA

Overview

The Carmen Smith Project is in the process of FERC re-licensing and preparing to operate for at least 40 more years. Much of the major powerhouse generating equipment has been in service since 1963 and is operating past its expected life. EWEB's current strategy is to overhaul of one of the two turbine-generator units and refurbish the second unit as an upfront capital cost saving measure that improves the net present value of the Project. The overhauled generator will become the primary unit. Staff plans to replace the turbine runner and rewind the generator for the primary unit in order to maintain reliability of the Project, increase power generation efficiency, and meet performance demands over a wider operating range. Auxiliary equipment will be replaced as needed to assure an additional 40 years of reliable service.

The second unit will serve as a back-up to the primary unit until power prices or other factors warrant a similar overhaul. The back-up unit may also operate during periods of higher power market value. The overall outcome of the project is delivery of a primary generating unit that is capable of operating much more frequently over a wider operating range and for greater hours than either unit does currently.

The current Capital Improvement Budget reflects the expectation that construction and the majority of expenses will occur in 2020 for substantial completion by the end of the same year. Due to the long lead time of this equipment and complex design, a contract for the work should be in place by late 2017. Funds for this unit overhaul work, estimated at up to \$14 million, are included in the Carmen-Smith

Relicensing CIP. The overall CIP expenditures at the Carmen Powerhouse are anticipated to total approximately \$66 million.

The turbine-generator overhaul is a project that requires design, fabrication, and construction of a complex system of highly specialized mechanical and electrical components. The industry standard approach for successfully integrating this type of complex system from design through construction is to package the entire project for performance by a single contractor. This type of approach is categorized as a design-build project, which requires an Alternative Procurement process using qualitative and quantitative criteria to select a proposer based on the best overall value. In contrast, the standard "design-bid-build" process awards to the lowest bidder based on a specific design.

The design-build approach is commonly used because collaboration with the contractor during design enables an owner to optimally balance equipment costs, power generation, and the effective operating range of the turbine-generator system. EWEB peers, including the Army Corps of Engineers, Hydro Quebec, and Tennessee Valley Authority, commonly use this collaborative approach for their turbine-generator overhauls.

Per requirements for using an Alternative Procurement process, EWEB staff must obtain Board approval to proceed with issuing a competitive request for proposals (RFP) that will lead to the development of a design-build contract. Proposal evaluation will rely on weighted scoring criteria including but not limited to equipment cost, equipment efficiency across the required operating range, and contractor experience. After completing the competitive RFP process, staff will inform the Board of the evaluation results and request approval of the highest-rated proposal.

A Public Notice has been posted, allowing the business community and the general public to share their comments and concerns regarding the utilization of this process during the Public Comment segment of the March 7, 2017 Board meeting.

ACTION REQUESTED:

Management requests the Board approve a Design-Build Alternative Procurement process to select a contractor, utilizing a competitive RFP for the detailed design and rehabilitation of the Carmen turbine-generator unit. This is a planned project, (no significant cost in 2017), planning estimate of \$66 million is contained in the LTFP for overall Carmen Plant improvements.

SIGNATURES:

Project Coordinator: _____

Manager: _____

Purchasing Manager: _____

Executive Officer: _____

Board Approval Date: _____