



- Board of Directors
Engineering and Operations Committee

3/13/2012 Board Meeting

8-11

Subject

Appropriate \$5.43 million; and award \$3.67 million procurement contract to James Leffel & Co. for the Yorba Linda Power Plant Turbine-Generator (Approp. 15446)

Description

This action awards a procurement contract to provide a new 5-megawatt (MW) turbine and generator at the Yorba Linda Power Plant, which is located on the Yorba Linda Feeder at the inlet to the Robert B. Diemer Water Treatment Plant.

Timing and Urgency

In January 2012, the new ozone contactors were placed into service at the Diemer plant. As a result, the water level at the inlet to the plant rose by several feet, rendering the existing Yorba Linda Power Plant inoperable and suspending power generation at the facility. The power plant has historically generated \$1 million to \$2.5 million in revenue annually. Procurement of a replacement turbine which will accommodate the new hydraulic conditions is the first step in returning the power plant to service.

This project has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria, and is categorized as an Infrastructure Upgrade project. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2011/12.

Background

The Yorba Linda Feeder conveys a blend of untreated water from the State Water Project and the Colorado River Aqueduct to the Diemer plant. Due to its high delivery pressure, flow from the Yorba Linda Feeder is controlled through the Yorba Linda Pressure Control Structure and the Yorba Linda Power Plant, both of which are located onsite at the Diemer plant. The Yorba Linda Power Plant has a generation capacity of 5 MW, and has been a reliable source of revenue for Metropolitan. Since its completion in 1981, the power plant's annual revenue has reached \$2.5 million, depending on distribution system operations.

Prior to the addition of ozonation facilities to the Diemer plant, the Yorba Linda Power Plant's existing Pelton wheel turbine was positioned above the operating water surface of the Diemer plant. The turbine functioned as a horizontal water wheel which would generate power as it dissipated excess energy in the Yorba Linda Feeder. The addition of ozone contactors under the Diemer Oxidation Retrofit Program (ORP) has recently impacted the hydraulic profile of the plant. As a result, the water level entering the Diemer plant is approximately eight feet higher than before the contactors were constructed. Consequently, the water level at the existing Pelton wheel turbine has risen sufficiently to submerge the rotor, requiring flows to be bypassed around the power plant. Replacement of the Pelton wheel with a modern Francis-type turbine will permit the Yorba Linda Power Plant to return to service with a turbine which can accommodate the new hydraulic conditions.

In May 2008, Metropolitan's Board authorized final design to replace the existing turbine-generator. In order to expedite construction while incorporating Metropolitan's operational and control needs into the design of this

specialized equipment, the turbine and generator will be prepurchased by Metropolitan and delivered to the Diemer plant for later installation under a separate construction contract.

When this project is complete, the electricity generated by the turbine will directly supply the power needs of the Diemer plant, with surplus power to be sold under existing power sale agreements. It is expected that the Yorba Linda Power Plant would generate \$1.5 million to \$2.3 million in revenue annually with the new turbine.

Yorba Linda Power Plant Modifications – Procurement (\$5.43 million)

Request for Proposals (RFP) No. 969 to provide a 5-MW turbine-generator at the Yorba Linda Power Plant was released on July 5, 2011. Due to the specialized nature of hydroelectric power equipment, the best-value method of procurement was selected for this project, in accordance with Metropolitan's Administrative Code. Use of this procurement method allowed incorporation of long-term guaranteed power generation and past project references into the selection process; provided the ability to negotiate business terms individually with equipment vendors, many of which are located outside the United States; and encouraged design innovation. The RFP included evaluation criteria for scoring and ranking the proposals based on capital cost and power generation efficiency; vendor experience and qualifications; and the specific features of each vendor's technical proposal. The scope of the procurement contract includes designing and furnishing a custom 5-MW turbine, generator, controls and all appurtenances to retrofit the Yorba Linda Power Plant, including fabrication of all components, integration of the control system, acceptance testing, spare parts, services of startup engineers, performance testing, and commissioning of the turbine.

Five proposals were received and opened on October 3, 2011. As shown in [Attachment 2](#), using the scoring criteria defined in the RFP, the top ranked proposal was submitted by James Leffel & Company (Leffel) in the amount of \$3.67 million. The Leffel proposal met all requirements of the RFP, and represents the best overall value to Metropolitan. Leffel's top ranking was based on its highest combination of cost/efficiency, experience and previous customer evaluations, and proposed equipment design. Staff recommends awarding a procurement contract to Leffel in the amount of \$3.67 million. Because Leffel does not maintain a business presence in California, Metropolitan will pay the \$284,425 of sales and use taxes directly to the state. The resulting total procurement cost is \$3,954,425, while the engineer's estimate was \$4 million. No Small Business Enterprise participation level was established for this contract due to the limited number of potential bidders for a manufactured product of this nature.

The equipment will be custom-designed by the vendor based on Metropolitan's operational requirements, the physical constraints of the existing power plant structure, hydraulic and control requirements, and the proposed turbine design. Additional final design work is required by Metropolitan staff to accommodate specific electrical, mechanical, and control system features of Leffel's design into the existing facility. These activities include design of the anchoring system to the existing structure, accommodation for maintenance access, system hydraulic modeling, and integration with the adjacent Yorba Linda Pressure Control Structure.

This action appropriates \$5.43 million and awards a \$3.67-million procurement contract to James Leffel & Company to provide a new turbine-generator for the Yorba Linda Power Plant. In addition to the amount of the contract, the requested funds include \$284,425 in California sales and use taxes, providing a total procurement cost of \$3,954,425. The requested funds also include: \$396,575 for fabrication inspection and functional testing; \$204,000 for final design activities by Metropolitan staff; \$171,000 for project management and contract administration; \$257,000 for review of submittals, responses to requests for information, and preparation of record drawings; and \$447,000 for remaining budget. Metropolitan staff will perform fabrication inspection, with assistance from local fabrication inspection firms located in the vicinity of Leffel's factory in Ohio. For this project, the anticipated cost of fabrication inspection and support is approximately 8.5 percent of the procurement cost.

Fabrication of the turbine and generator is expected to take approximately 18 months. Staff will return to the Board in 2013 for award of a construction contract for installation of the equipment.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2011/12 capital expenditure plan. See [Attachment 1](#) for the Financial Statement, [Attachment 2](#) for the Abstract of Proposals, and [Attachment 3](#) for the Location Map.

This project is included within capital Appropriation No. 15446, the Yorba Linda Power Plant Modifications Program. This project is consistent with Metropolitan's goal for sustainability by continuing to generate clean hydropower for use at the Diemer plant.

Project Milestones

Mid-2013 – Board award of construction contract for installation of the turbine-generator

October 2013 – Delivery of turbine and generator

Early 2014 – Completion of construction

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121: General Authority of General Manager to Enter Contracts

Metropolitan Water District Administrative Code Section 8149: Best Value Procurement

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve the funding, design, minor alterations and replacement of existing public facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under two Categorical Exemptions (Class 1, Section 15301 and Class 2, Section 15302 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$5.43 million; and
- b. Award \$3.67 million procurement contract to James Leffel & Company for a turbine-generator at the Yorba Linda Power Plant.

Fiscal Impact: \$5.43 million in budgeted funds under Approp. 15446

Business Analysis: This option will provide the best overall value to Metropolitan, and will expedite the return of the Yorba Linda Power Plant back into service, generating expected revenue of \$1.5 million to \$2.3 million annually.

Option #2

Do not award the procurement contract and re-advertise in an attempt to receive more favorable proposals.

Fiscal Impact: Unknown

Business Analysis: This option may or may not result in more favorable proposals, would delay the return of the Yorba Linda Power Plant to service, and would forego the generation of power revenue.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer,
Engineering Services

2/21/2012

Date



Jeffrey Lightinger
General Manager

2/29/2012

Date

Attachment 1 – Financial Statement

Attachment 2 – Abstract of Proposals

Attachment 3 – Location Map

Ref# es12615215

Financial Statement for Yorba Linda Power Plant Modifications Program

A breakdown of Board Action No. 3 for Appropriation No. 15446 for modification of the Yorba Linda Power Plant¹ is as follows:

	Previous Total Appropriated Amount (May 2008)	Current Board Action No. 3 (Mar. 2012)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 434,000	\$ -	\$ 434,000
Final Design	1,691,000	204,000	1,895,000
Owner Costs (Program mgmt., contract admin.)	717,000	171,000	888,000
Submittals Review & Record Drwgs.	-	257,000	257,000
Fabrication Inspection	-	299,000	299,000
Materials & Supplies	2,000	15,000	17,000
Incidental Expenses	26,000	42,575	68,575
Professional/Technical Services	193,000	40,000	233,000
Equipment Use	-	-	-
Contracts			
James Leffel & Co.	-	3,670,000	3,670,000
Sales & Use Taxes ²	-	284,425	284,425
Remaining Budget	432,000	447,000	879,000
Total	\$ 3,495,000	\$5,430,000	\$8,925,000

Funding Request

Program Name:	Yorba Linda Power Plant Modifications Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15446	Board Action No.:	3
Requested Amount:	\$ 5,430,000	Capital Program No.:	15446
Total Appropriated Amount:	\$ 8,925,000	Capital Program Page No.:	333
Total Program Estimate:	\$ 23,799,000	Program Goal:	I-Infrastructure Upgrade

¹ The total amount expended to date on the Yorba Linda Power Plant Modifications project is approximately \$1.75 million.

² Since the contractor has no business presence in California, sales and use taxes will be paid directly to the California Board of Equalization.

The Metropolitan Water District of Southern California

Abstract of Proposals Received on October 3, 2011 at 3:00 P.M.

Request for Proposals No. 969

To Provide a 5-MW Turbine-Generator at Yorba Linda Power Plant

The project consists of furnishing a new 5-MW turbine-generator, controls and all appurtenances to retrofit the Yorba Linda Power Plant, including fabrication of all components, integration of the control system, acceptance testing, spare parts, services of startup engineers, performance testing, and commissioning of the turbine.

Engineer's Estimate: \$4,000,000

Respondent	Respondent's Proposed Contract Cost*	Total Contract and Inspection Costs**	10-year Evaluated Net Revenue***	Scores for Net Revenue (Out of 80)	Score for Technical Proposal (Out of 5)	Score for Qualifications and References (Out of 15)	Total Score
James Leffel & Company	\$3,954,425	\$3,967,625	\$40,367,676	78.15	4.00	11.85	94.00
Hydrotech Engineering	\$3,142,184	\$3,209,234	\$40,469,677	80.00	3.50	10.00	93.50
SBIW, Inc.	\$5,122,227	\$5,187,277	\$40,870,643	76.61	3.33	12.68	92.62
Gilbert Gilkes & Gordon, Ltd.	\$5,789,430	\$5,828,680	\$39,809,466	72.96	3.00	12.29	88.25
GE Energy	\$6,166,474	\$6,184,224	\$39,297,862	71.10	4.08	11.71	86.89

* Includes sales and use taxes of 7.75 percent imposed by the state of California

** Adjusted contract cost based on inspection costs incurred due to fabrication location (see table below)

*** Calculated value based on projected power generation revenue and the adjusted contract cost

Respondent	Bidding Office	Turbine Fabrication	Generator Fabrication
James Leffel & Company	Springfield, OH	Springfield, OH	Mansfield, OH
Hydrotech Engineering	Salt Lake City, UT	China	China
SBIW, Inc.	San Ramon, CA	China	Spain
Gilbert Gilkes & Gordon, Ltd.	England	England	Mansfield, OH
GE Energy	Concord, CA	Deming, WA	Brazil

Yorba Linda Power Plant

