

RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: JULY 25, 2016

ITEM NO: 9

SUBJECT: PROFESSIONAL SERVICES AGREEMENT, FROM REQUEST FOR PROPOSAL 1564, WITH SCHNEIDER ELECTRIC USA, INC. OF SAN DIEGO, CA, FOR THE SUBSTATION SWITCHGEAR UPGRADE PROJECT FOR \$4,349,740 AND APPROVAL OF WORK ORDER NO. 1601400 FOR \$5,530,000

ISSUES:

The issues for Board of Public Utilities consideration are: 1) the approval of a Professional Services Agreement from Request for Proposal (RFP) 1564 to the lowest responsive and responsible proposer, Schneider Electric USA, Inc. of San Diego, CA, for the Substation Switchgear Upgrade Project; and 2) the approval of Work Order No. 1601400.

RECOMMENDATIONS:

That the Board of Public Utilities:

1. Approve a Professional Services Agreement in the amount of \$4,349,740 to Schneider Electric USA, Inc. of San Diego, California, for the Substation Switchgear Upgrade Project; and
2. Approve Work Order No. 1601400 in the amount of \$5,530,000.

BACKGROUND:

On September 4, 2015, the Board of Public Utilities received a report of Riverside Public Utilities' (RPU) proposed electric infrastructure projects for FY 2015/16 that were estimated at \$500,000 or more. The purpose of the report was to provide the Board an overview of the projects and highlight the significance of those projects. One of the projects identified was the upgrade of substation switchgear units that provide service to approximately 26,000 customers.

Switchgear units are large metal enclosures containing equipment that switches, controls, and protects distribution circuits and are physically located at electrical substations, which are neighborhood power centers. Typical equipment housed inside the Switchgear includes circuit breakers, protective relays, meters, auxiliary controls, and automation equipment. RPU owns and operates a total of 61 switchgear units. The average age of RPU's switchgear units is approximately 40 years old. Many of the components within these switchgear units have reached the end of their useful life.

RPU staff assessed and identified ten switchgear units in the distribution system that require upgrades based on the equipment condition, personnel safety, maintenance concerns, and system reliability. All of the ten switchgear units utilize antiquated electromechanical relays. One aspect of the proposed upgrades to all ten switchgear units is the replacement of electromechanical relays with high-technology microprocessor based relays. This technological advancement is also recommended in RPU's Electric System Master Plan. Microprocessor based relays are precise, reliable, and are able to integrate with modern automation systems. In addition, microprocessor based relays provide arc flash protection

features which enhances personnel safety in confined spaces, such as switchgear units. The new relays also provide comprehensive data reports that assist staff in analyzing abnormal events. These capabilities are helpful in supporting RPU's regulatory compliance requirements.



Switchgear with new microprocessor-based relays



Switchgear with old electromechanical relays

In addition to the relay replacement, four of these switchgear units also require more extensive rehabilitation. They have outdated air-circuit breakers that have reached the end of their service life. The breakers require frequent maintenance and expose workers to potentially hazardous conditions during operation and maintenance. Air-circuit breakers will be replaced with modern vacuum circuit breakers which require less maintenance and are considerably safer to operate and maintain.

These four switchgear units also have significant insulation deterioration on the electrical bus and disconnect devices that are difficult to operate creating operational and safety concerns. The work will include re-insulating the electrical bus, and replacing the disconnect switches. The table below identifies the substations, switchgear units, and the scope of work at each.

Substation	Switchgear Name	Relay Replacement	Complete Rehabilitation
Freeman	SWGR 1	X	
Freeman	SWGR 3	X	X
Freeman	SWGR 4	X	X
Freeman	SWGR 5	X	
Freeman	SWGR 6	X	
Mountain View	SWGR 3	X	X
Mountain View	SWGR 4	X	X
Mountain View	SWGR 6	X	
Springs	SWGR 1	X	
Springs	SWGR 2	X	

This project is very labor intensive and requires highly specialized technical knowledge, equipment, and experience to safely upgrade this equipment within an energized substation. Staff evaluated equipment life-cycle costs for these switchgear units and determined upgrading the existing units was more cost effective than outright replacement. Staff also determined that the most cost effective means of performing this type of work is through a turnkey service where the vendor provides both the materials and labor under the direction and inspection of RPU's staff.

This project supports the infrastructure replacement and advanced technology objectives of the Utility 2.0 plan. For the Riverside electric distribution system, the project will increase the number of modern microprocessor based relays from 20% to 39%, and increase the number of modern vacuum circuit breakers from 60% to 68%. Staff recommends upgrading the switchgear units and associated equipment to improve the reliability of electric service, improve operational safety, and reduce ongoing operational and maintenance costs.

On December 16, 2015, staff issued a Request for Proposal (RFP 1564) through the Purchasing Department for a turnkey service including labor and material for the Substation Switchgear Upgrade Project. Five vendors submitted proposals on February 16, 2016. The evaluation panel deemed Schneider Electric USA, Inc. to be the lowest responsive and responsible proposer and their price was within the engineer's estimate of \$4,500,000. The proposal evaluation results are shown in the table below:

Vendors	Base Proposal Amount with Taxes	Rank
1. Schneider Electric USA, Inc.	\$4,349,740	1 st
2. TRC	\$6,508,841	2 nd
3. Baker Electric	\$7,252,412	3 rd
Electric Power Systems International Inc.		Non-Responsive
Geveden Industrial		Non-Responsive

➤ *Engineer's Cost Estimate* \$4,500,000

Project management, design review, inspection, circuit switching, factory acceptance testing and commissioning efforts will be completed by RPU staff. The total capital expenditure for the Substation Switchgear Upgrade Project, including all costs for equipment, materials, engineering, and testing, are as follows:

Work Order Breakdown	Sub-total	Percent of Total
RPU Engineering, Construction Management	\$620,000	11%
RPU Operations Labor	\$560,260	10%
Schneider Electric Agreement	\$4,349,740	79%
Work Order Total	\$5,530,000	100%

The Purchasing Services Manager concurs that the recommended actions comply with the City of Riverside's Purchasing Resolution No. 22576.

FISCAL IMPACT:

The total capital expenditure for Work Order No. 1601400 is estimated to be \$5,530,000. Sufficient funds are available in Public Utilities' Capital Account No. 6130000-470616.

Prepared by: Pat Hohl, Utilities Assistant General Manager/Energy Delivery
 Approved by: Girish Balachandran, Utilities General Manager
 Approved by: John A. Russo, City Manager
 Approved as to form: Gary G. Geuss, City Attorney

Certifies availability of funds: Laura Chavez-Nomura, Utilities Assistant General Manager/Finance

Attachment: 1. Professional Services Agreement with Schneider Electric USA
 2. Presentation

