



TELEPROTECTION AND SUBSTATION AUTOMATION INFRASTRUCTURE UPGRADE PROJECT

Riverside Public Utilities

Board of Public Utilities
December 13, 2021

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BACKGROUND

1. Teleprotection is a key technology for protecting the integrity of sub-transmission lines and the voltage stability of the electric grid.
2. Teleprotection devices use communication channels to exchange information between substation transmission relays.
3. The transmission relays use this information to detect faults on transmission lines and clear faults at very high speed, minimizing system damage and maintaining system stability.



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BACKGROUND

4. RPU currently utilizes a legacy Synchronous Optical Network (SONET) as a platform for teleprotection.
5. The SONET system was installed in the early 1990s.
6. The SONET platform has reached its end of life and will soon no longer be supported by the manufacturer.
7. To minimize any disruption of current operations, RPU is planning on upgrading the existing teleprotection system with a newer platform.



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BACKGROUND

8. RPU operations and engineering evaluated different solutions.
9. JunglePax (JPAX) system is the most cost effective and reliable option for managing mission critical operations that are compatible with RPU's infrastructure.
10. JPAX is purpose built for utility teleprotection applications.
11. The JPAX will provide added capabilities and improve system efficiencies.



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DISCUSSION

1. The scope of work includes upgrading the existing teleprotection equipment at 11 substations.
2. The engineering design contemplated for this project will be performed by RPU staff.
3. The construction work, testing, and commissioning will be performed by RPU field forces.



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BID RESULTS

1. Staff reviewed the bids and deemed OneSource Distributors to be the lowest responsive and responsible bidder.
2. The bid was within the engineer's estimated amount of \$480,000. The bids are summarized in the table below:

Vendors	City Location	Bid Amount	Rank
OneSource Distributors	Oceanside, CA	\$458,525.38	1
Royal Industrial Solutions	Riverside, CA	\$470,422.15	2
Anixter	Corona, CA	\$ 477,267.08	3



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PROJECT BREAKDOWN

Project and Fiscal Breakdown		
Work Type	Performed By:	Amount (\$)
Project Management and Engineering	RPU staff	\$10,000
Electrical Work & Testing	RPU staff	\$30,000
Material and Parts	OneSource Distributors	\$458,525
Contingency		\$40,000
Work Order Total:		\$538,000
Anticipated Start Date:		March 2022
Anticipated Duration:		4 months



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STRATEGIC PLAN ALIGNMENT

This item contributes to Strategic Priority No. 6 Infrastructure, Mobility and Connectivity and **Goal 6.2**

1. **Community Trust** – The replacement of teleprotection system will improve the reliability of the electric system, which help build community trust and result in the greater public good.
2. **Equity** – RPU PU endeavors to provide safe and reliable electric service to all its customers. The entire telprotection system will be upgraded. Since RPU's electric system is an interconnected network, investments made to maintain individual parts of the system improve the reliability of the overall system, thereby providing an equitable benefit to all customers.
3. **Fiscal Responsibility** – This item represents fiscal responsibility through the selection of the lowest project bid, providing optimal project efficiency, and effectively utilizing funding for the project.
4. **Innovation** – Upgrading teleprotection infrastructure is part of the effort to modernize the grid to make it more innovative and more resilient through the use of cutting-edge technologies, equipment and automation systems that communicate together to deliver reliable and efficient electric power.
5. **Sustainability & Resiliency** – Upgrading system protection infrastructure will improve the ability the system capability and reliability in detecting and clearing faults quickly to minimize damages to the electric system.

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RECOMMENDATIONS

That the Board of Public Utilities:

1. Award Bid No. Sub-851 for Teleprotection and Substation Automation Infrastructure Upgrade Project to OneSource Distributors, of Oceanside, California, in the amount of \$458,525.38; and
2. Approve Work Order No. 2202600 in the amount of \$544,378.

