

PLAZA SUBSTATION SWITCHGEAR 4 REMOVAL AND 66KV BUS DIFFERENTIAL UPGRADE PROJECT

Riverside Public Utilities

Board of Public Utilities
April 10, 2023

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BACKGROUND

- RPU Electric System was originally designed as 4kV distribution system
- 2. 2010 Electric System Master Plan recommends to convert remaining 4kV lines to 12kV
- 3. In 2022, 4kV rated power equipment was decommissioned at the Plaza Substation
- 4. Project benefits include, but not limited to improved reliability, increased capacity, and replaced aging infrastructure



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BACKGROUND

<u>Protective Relaying Equipment:</u>

- 1. Ensure proper performance of system reliability, safety and maintenance
- 2. Provide fast isolation of affected sections during abnormal conditions
- 3. 2010 Electric System Master Plan recommends the replacement of older relays with modern digital relays



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BACKGROUND

Plaza Substation:

- In 2022, 4kV decommissioned equipment is currently housing 66kV bus protection electromechanical relays
- 2. To effectively remove this 4kV equipment, the relays must be replaced and installed in a different location



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DISCUSSION

Scope of Work – 4kV removals:

- 1. Demolishing and disposing 4kV rated Transformer T4 and Switchgear No. 4 at Plaza Substation
- 2. All associated equipment, circuits, structures, and conduits will be removed



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DISCUSSION

Scope of Work - 66kV Relay Upgrade:

- Remove 66kV bus protection electromechanical relays housed in Switchgear 4
- 2. A new microprocessor relay panel will be installed in the control building to replace the removed equipment
- 3. RPU staff will perform procurement, engineering design, construction, testing, and commissioning



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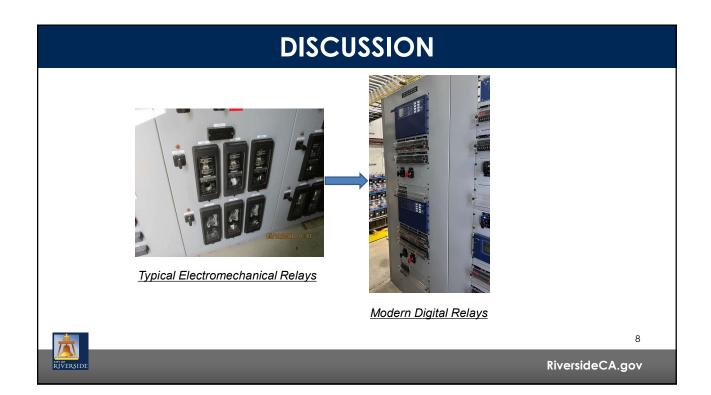


4kV Rated Equipment to Remove at Plaza Substation

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Work Type	Performed By:	Amount
Project Management and Engineering	RPU Engineering Staff	\$70,000
Construction	RPU Substation Electricians	\$110,000
Testing and Commissioning	RPU Test and SCADA	\$30,000
Equipment and Material		\$40,000
Project Contingency (10%)		\$25,000
Work Order Total:		\$275,000
Anticipated Start Date:		April 2023
Anticipated Duration:		18 weeks

STRATEGIC PLAN ALIGNMENT



Strategic Priority 6 - Infrastructure, Mobility and Connectivity

Goal 6.2 – Maintain, protect, and improve assets and infrastructure within the City's built environment to ensure and enhance reliability, resiliency, sustainability, and facilitate connectivity.

Cross-Cutting Threads



Community Trust



Fiscal Responsibility







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RECOMMENDATION

That the Board of Public Utilities approve the capital expenditure for Work Order No. 2312723 in the amount of \$275,000 which includes all design, construction, procurement, testing, commissioning, and construction support for upgrading the 66kV bus differential protection system and removing Transformer T4 and Switchgear 4 at Plaza Substation.



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