



SUBSTATION AUTOMATION SYSTEMS (SAS) UPGRADE PROJECT

Public Utilities

BOARD OF PUBLIC UTILITIES
FEBRUARY 26, 2018

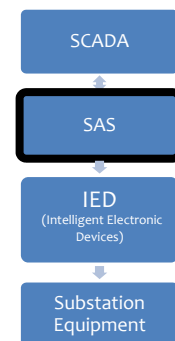
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BACKGROUND

Substation Automation Systems (SAS) are:

1. An **integration** of electronic equipment;
2. A centralized system that provides **control** and **monitoring capabilities** to remote authorized users; and
3. The **foundation block** for SCADA, ODMS, etc.



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BACKGROUND

Manned Substation



Pre 70s

Remote Terminal Units (RTU)



70s-2000s

Communication Based



Proposed

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EXISTING SUBSTATION AUTOMATION

- Operational real time data – Real time status, alarms, control and loading of power system
- System Operators manage and operate remotely the electrical network
- Supervisory Control and Data Acquisition (SCADA)



PROJECT SCOPE

1. Grid **Modernization**
2. **Replace** old SAS equipment with new programmable hardware at 12 substations (Phase 1)
3. Construction duration: 10 months starting June 2018

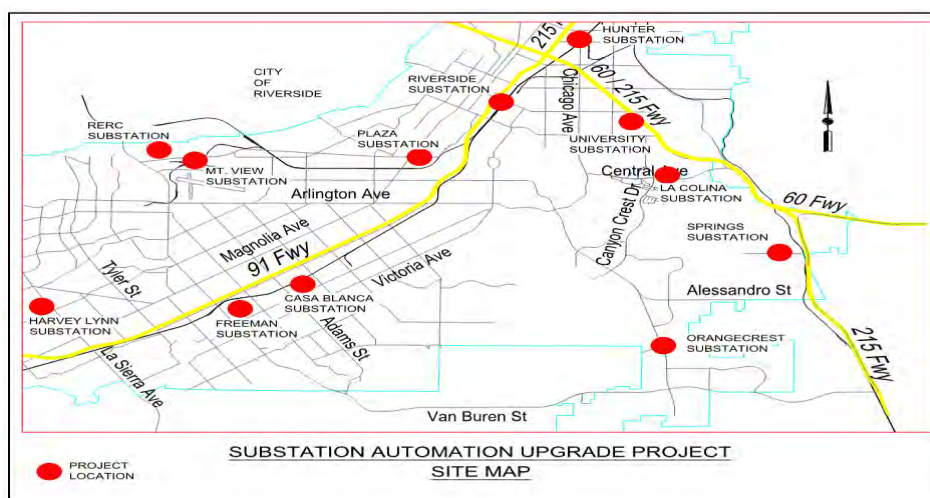


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PROJECT MAP



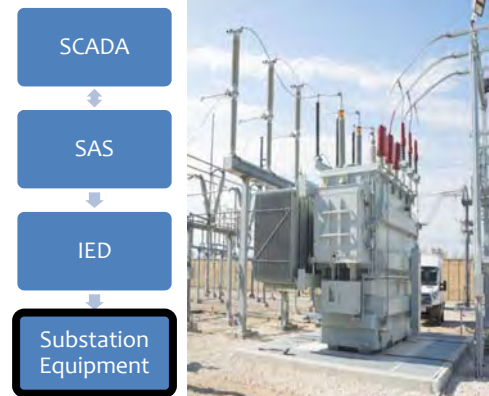
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SUBSTATION ASSETS

- **Critical** to the reliability of the electric grid
- Failure **impacts significantly more customers** than distribution equipment
- **Expensive replacement** for failure in service
- **Long lead** equipment



BENEFITS OF UPGRADE

- An advanced SAS will assist our system to:
 - **Leverage** technology and digital communication
 - **Prolong** the asset's life
 - **Prevent** costly failure in service
 - **Improve** operational efficiency and reliability
 - **Optimize** the integration of IEDs

DISCUSSION – CONTRACT BIDS

1. **Seven** vendors were invited to bid on the project
2. **Six** vendors submitted bids
3. **Royal Industrial Solutions** was the **lowest** responsive and responsible bidder

Vendors	Proposal Amount	Local Preference Adjustment	Evaluation
1. Royal Industrial Solutions	\$789,344.19	\$749,879.98	Lowest Local Responsive Bidder
2. Anixter	\$764,594.93	NA	2 nd
3. OneSource Distributors	\$766,045.49	NA	3 rd
4. Concept Power Inc.	\$771,508.39	NA	4 th
5. Wesco	\$793,336.31	NA	5 th
6. Graybar	\$852,528.49	NA	6 th

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DISCUSSION – FISCAL IMPACT

Description	Amount (\$)
Purchase Order to Royal Industrial Solutions	\$789,344.19
Misc. Equipment and Material	\$80,000
Project Management and Engineering Design	\$300,000
Electric Construction Substation	\$200,000
SCADA, Field Testing and Commissioning	\$474,000
Contingency (10%)	\$184,334.81
Total	\$2,027,679

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RECOMMENDATIONS

That the Board of Public Utilities:

1. Award RFQ-802 for furnishing and delivering substation automation system equipment to the lowest local responsive bidder Royal Industrial Solutions of Riverside, California, in the amount of \$789,344.19; and
2. Approve Work Order No. 1816163 in the amount of \$2,027,679 for the Substation Automation Upgrade Project.