



Substation Capacitor Upgrade Project

Riverside Public Utilities

Board of Public Utilities
January 22, 2018

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BACKGROUND

Substation Capacitors:

1. Support system voltage **to ensure customers receive power at proper voltage levels.**
2. Provide needed reactive power (vars) to electrical equipment such transformers and motors.
3. Improve efficiency of delivery system – reduces system losses
4. Maintain Power Factor per our agreement with SCE

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BACKGROUND

Many of the capacitors installed in RPU's system have:

1. Exceeded or approaching the **end of their design life.**
2. Limited power regulation capabilities.
3. High switching transients and inrush current which negatively impacts other substation equipment.

BACKGROUND



Capacitor Failure at Harvey Lynn Substation

DISCUSSION

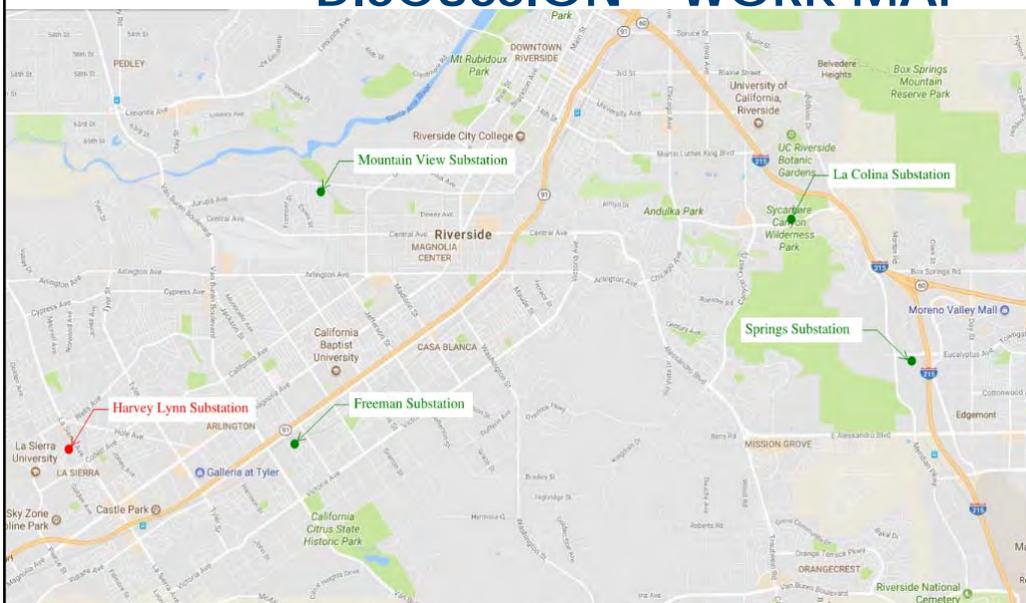
RPU plans **replacing** eleven capacitors and **adding** one capacitor with modern design metal-enclosed capacitors at five substations



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DISCUSSION – WORK MAP



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DISCUSSION - BENEFITS

1. New capacitors will **improve** safety to personnel, operational capabilities, and power quality
2. Enhanced technology features will **reduce** maintenance **costs** and potential **failures**
3. Added regulating capabilities will help to **maintain** **supplied voltage** at required levels

DISCUSSION – WORK SCOPE

1. The scope of work includes installation of capacitors, related underground work, and upgrades to auxiliary devices
2. Five vendors were invited to submit proposals for equipment and material under RFP-801
3. The purchase of the equipment is covered under Section 602 of Purchasing Resolution No. 22576

PROPOSAL RESULTS

VENDORS	AMOUNT	RANKING
Northeast Power Systems, Inc.	\$2,562,558	1st
Scott Engineering, Inc.	\$2,685,250	2nd
Controllix Corporation	\$3,078,878	3rd
ABB	\$3,660,525	4th
Eaton	NA	No Proposal



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PROJECT BREAKDOWN

DESCIRPTION	AMOUNT
Northeast Power Systems, Inc.	\$2,562,558
Project Management and Engineering	\$400,000
Equipment Rental and Miscellaneous Material	\$250,000
Construction	\$1,400,000
Factory Acceptance, Field Testing and Commissioning	\$300,000
Contingency (8%)	\$393,442
Work Order Total	\$5,306,000



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Recommendations

That the Riverside Public Utilities Board:

1. Award a purchase order to the lowest responsive and responsible bidder Northeast Power Systems of Queensbury, New York, in the amount of \$2,562,558;
2. Approve Work Order No. 1814007 for the Substation Capacitor Upgrade Project in the amount of \$5,306,000.