

**PERALTA COMMUNITY COLLEGE DISTRICT
Board of Trustees Agenda Report
For the Trustee Meeting Date of March 26, 2013**

ITEM TITLE:

Consider Approval to Enter into a Contract with Applied Power Systems (APS) to perform an Electrical Infrastructure Upgrade at Merritt College for two (2) projects.

SPECIFIC BOARD ACTION REQUESTED:

Approval is requested to enter into a Contract with Applied Power Systems (APS) to perform Electrical Infrastructure Upgrade at Merritt College for the following two (2) projects, in the amount not-to-exceed \$85,456.

- 1) Required items within Substation 'C'
- 2) Required items in the main 13 kilovolt (kV) switchgear

ITEM SUMMARY:

Both Substation C's and the main 13 kV switchgear's material conditions were assessed and tested on March 8, 2013 by APS after a) a crackling noise was heard within the substation on March 1, 2013 indicative of failed insulation; and, b) PG&E advised the District then of a compromised situation on the equipment at their Point of Entry (POE) which would require shutting down the entire campus. The testing of both problems by APS indicated a) significant insulation degradation within each of these substation's equipment lines, particularly in their high voltage switches; and item b) the determination was that large amounts of rust and moisture were evident in this POE switchgear potentially leading to arcing.

All the work can only be done through electrical shutdowns accomplished over the Spring Break, last week of March, 2013. **APS scope of work for Substation C includes the following:**

- Install a liquid temperature gauge on transformer C
- Install the pressure gauges of (4) transformers located in Substation C
- Install Shrader valves on four (4) transformers located in Substation C
- Install a bonding jumper on transformers C and D
- Install eight (8) medium voltage cable connections between the 12 kV switches and the oil-filled transformers
- Install eight (8) shrink kits for medium voltage cable terminations
- Install arc shields with fiber reinforced panels within each 12 kV switch enclosure.
- Install eleven (11) heat strips within each of the four (4) 12kV switch enclosures and each of the (4) distribution switchboards
- Install line stats and heat strips within four (4) 12kV switch enclosures, and four (4) immediate downstream distribution switchboards
- Install eleven (11) Line stats (thermostats) for temperature regulation
- Pull needed 120 Volt power to feed each line stat and heat strip. Utilize the existing panel (C1) for the 120V source. Workmanship to include galvanized conduit, wire, fittings, connectors, and penetrations needed in order to accomplish the scope

- Install 12kV fuse - single fuse per phase on switch "A" & "B." Switches "C" & "D" require two fuses per phase, for a total of eighteen (18) 14.4 kV rated fuses, applied voltage at 12.47kV.
- Address and reconcile code violations noted in Panels "C" and "C1" that pose an immediate safety hazard and/or business interruption possibility; and items noted during March 15, 2013 site observations, and provided to the District on March 16, 2013
- Test circuit breakers of thirty (30) molded case circuit breakers within the distribution switchboards
- Provide complete transformer testing on four (4) oil transformers at Substation C. Testing to include insulation resistance, winding resistance, turns test ratio and polarity test, and contact resistance. APS will also measure the dielectric absorption rate and polarization index.
- Provide temporary generator for testing

APS scope of work for the Point of Entry 12 kV Switchgear includes the following:

- Test the main switchgear and protective elements
- Install two (2) heat strips, line thermostat, and 5kV potential transformer (12kV:120/240V) in order to derive power from the bus bar
- Update associated hardware, wire, and fuse block protection

Pursuant to the Public Contract Code (PCC) Section 20654, unanimous Board approval is necessary because the project cost exceeds the contract threshold of \$15,000. The Chancellor recommends approval.

SOURCE OF FUNDS (AND FISCAL/BUDGETARY IMPACT):

Measure A, as approved by the voters in Peralta's constituency and authorized under Resolution 05/06-45, Laney College, "Classroom and facilities repairs and grounds improvements," Merritt College, "Classroom and facilities repairs and grounds improvements," College of Alameda, "Remodeling and equipping classroom and campus facilities," and Berkeley City College, "Plumbing, electrical, mechanical system upgrades and improvements."

BACKGROUND/ANALYSIS:

This Upgrade is necessary to keep this 45 year substation operating until a new replacement substation can be planned, designed and funded. APS's recent projects for the District include:

- An initial audit of Merritt's Substation C & POE Substation
- Sub-contractor to Dan Electric for all High Voltage work of Merritt's Allied Health Building

APS has performed these responsibilities well and continues to be responsive to the District's needs. APS was a prime contractor to the District for the Audit of Merritt's Substations C and the POE project. This work was functionally completed on March 8, 2013 except the Final Report and invoice (not-to-exceed amount of \$9,999; actual work was estimated to be \$6,000).

DELIVERABLES AND SCOPE OF WORK:

APS shall install the above equipments and perform its testing. Deliverables will include equipment operating manuals, testing results, and reports.

ANTICIPATED COMPLETION DATE:

Before June 30, 2013, but expected to be completed over Spring Break on Friday March 29, 2013.

ALTERNATIVES/OPTIONS:

Not Applicable due to the shutdown requirements and age/condition of the equipment.

EVALUATION AND RECOMMENDED ACTION:

Not Applicable

OTHER DEPARTMENTS IMPACTED BY THIS ACTION (E.G. INFORMATION TECHNOLOGY):

YES _____ NO X

COMMENTS:

No comments

WHO WILL BE PRESENTING THIS ITEM AT THE BOARD MEETING?

Vice Chancellor Ikharo

(****Board contract approval is subject to negotiation and execution by the Chancellor.)

DOCUMENT PREPARED BY:

Prepared by: Dr. Sadiq B. Ikharo Date: March 19, 2013
Vice Chancellor of General Services

DOCUMENT PRESENTED AND APPROVED BY:

Presented and approved by: Dr. Sadiq B. Ikharo Date: March 19, 2013
Vice Chancellor of General Services

FINANCE DEPARTMENT REVIEW

Finance review required Finance review *not* required

If Finance review is required, determination is: Approved Not Approved

If not approved, please give reason: _____

Signature: _____ Date: _____
Ron Gerhard, Vice Chancellor for Finance and Administration

GENERAL COUNSEL (Legality and Format/adherence to Education Codes):

Legal review required Legal review *not* required

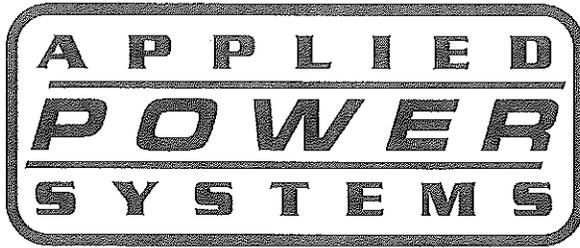
If Legal review is required, determination is: Approved Not Approved

Signature: _____ Date: _____
Thuy Thi Nguyen, General Counsel

CHANCELLOR'S OFFICE APPROVAL

Approved, and Place on Agenda Not Approved, but Place on Agenda

Signature: _____ Date: _____
Dr. José M. Ortiz, Chancellor



Electrical Transmission & Distribution Systems

- Acceptance & Maintenance Testing
- Equipment Repair and Upgrading
- Power System Studies

PROPOSAL

Date: March 18, 2013
Customer: PCCD Merritt College
Attention: Bob Beckwith
Project: Main Sub: PG&E Incoming Service
Location: Oakland, CA

Reference: SAC13767
Phone: 510-466-7269
Fax No:
Email: rbeckwith@peralta.edu
Estimator: Nicholas Domich

EXECUTIVE SUMMARY:

During Substation C Assessment and Testing on March 8, APS was able to extrapolate needed info to devise a scope to address the operational, mechanical, and electrical deficiencies that exist. Gear in question is 40+ years in age, with no signs of maintenance or testing. The following Scope of Work will be executed during the Easter Break, March 25-29, 2013.

SPECIFICATIONS:

Work in this specification includes field comprehensive testing of listed electrical component. When Testing Specifications are not available, use the National Electrical Testing Association Acceptance & Maintenance Testing Specs (NETA ATS-2009, IEEE 1584, NFPA 70e). Installation to be performed in conformance with National Electrical Code (NEC).

SCOPE OF WORK:

- APS site observations, March 4, 2013.*
- Replace liquid temperature gauge on Transformer C.*
- Replace PSI gauges on (4) transformers located in Sub C.*
- Install Shrader valves on (4) transformers located in Sub C.*
- Replace missing 4/0 bonding jumper on Transformer C & D.*
- Replace corroded/tracked medium voltage cable connections between 12kV Switches and oil transformers at Sub C.*
- Install (8) shrink kits for medium voltage cable terminations.*
- Replace existing broken arc shields with Fiber Reinforced Panels (FRP) within each 12kV switch enclosure at Sub C.*
- Replace all corroded hardware (lugs, nuts, bolts, washers, Etc.) within 12kV Switch enclosures. To include actuation springs as well.*

- j. Replace/install (11) heat strips within each of the four (4) 12kV Switch enclosures and each of the (4) distribution switchboards at Sub C.
- k. Install line stats and heat strips within (4) 12kV switch enclosures, and (4) immediate downstream distribution switchboards at Sub C.
- l. Install (11) Line stats (thermostats) for ease of temperature regulation.
- m. Pull needed 120 Volt power to feed each line stat and heat strip. Utilize existing panel (C1) for 120V source. Workmanship to include galvanized conduit, wire, fittings, connectors, and penetrations needed in order to accomplish the scope.
- n. Replace all 12kV fuses. Single fuse per phase on switch "A" & "B." Switch "C" & "D" have two fuses per phase, for a total of (18) 14.4 kV rated fuses, applied voltage at 12.47kV.
- o. Address and reconcile code violations noted in Panels "C" & "C1" that pose an immediate safety hazard and/or business interruption possibility. Items noted during March 15, 2013 site observations, and provided to Bob Beckwith on March 16, 2013.
- p. Provide circuit breaker maintenance testing for thirty (30) molded case circuit breakers within the distribution switchboards located at Sub C. Should any circuit breakers fail during the testing, APS will bring to Merritt College staff immediately so that a replacement can be found. Additional costs would need to be considered.
- q. Provide complete transformer testing on four (4) oil transformers at Sub C. Testing to include insulation resistance, winding resistance, turns test ratio and polarity test, and contact resistance. APS to also measure the dielectric absorption rate and polarization index.
- r. Provide temporary generator for testing and as a site-specific power source.
- s. Medium voltage switching.

Single lines Referenced: Sheet ES 7.1

Thank you for giving us an opportunity to quote your job requirements. We look forward to working with you on this project.

PRICES:

\$77,963.⁰⁰

Items a-r

Note 1: Pricing of this Proposal is consistence with the Prevailing Wage standards established in the state of California.

Note 2: Please insure that all load has been removed and necessary circuit breakers have been opened prior to APS Medium Voltage Switching.

Note 3: Submittal Data such as Drawings and Reports will be electronic only. If hard/bound copies are needed APS will provide at additional cost.

TERMS AND CONDITIONS:

1. Price quoted is valid for 90-days.
2. All tests are based on NETA ATS, 2009 and NETA MTS, 2011.
3. Provide (1) qualified personnel to identify the equipment in question, and to execute all 480 Volt switching and operating of circuit breakers.
4. Arrange and pay for utility outage, if necessary.
5. For Short Circuit & Coordination Study, kindly provide the following information:
 - a. Obtain the fault current from the secondary side of the Utility Transformer supplying the facility.
 - b. Utility Primary Protection device and settings.
 - c. Primary system X/R ratio.
 - d. Primary system 3PH and SLG fault levels.
 - e. Utility transformer data (Voltage Ratio, Size and %Z)
 - f. Complete electrical equipment submittals on all new and existing equipment.
 - g. Single line diagrams and panel schedules.
 - h. Cable sizes of all feeders 100A and larger.
 - i. Cable lengths of all feeders 100A and larger.
 - j. Provide one electrician to assist in data gathering if required. (Remove Dead Fronts, Panel Covers to Access Equipment).

Exclusions: Permits, Fees, Bonds, Engineering.

Work Conditions: All work to be performed during normal business hours M-F 7:00 - 3:30 pm.

Payment Terms:

- 25% with Purchase order for mobilization.
- Billing will be submitted bi-weekly until project is completed.
- All payments past 30-days will be charged a finance charge of 1.5%.

General Conditions:

1. All applicable taxes are included in our submission.
2. If a formal contract is required, its conditions must not deviate from this proposal without contractor's permission.
3. Anything (verbal or written), express or implied elsewhere, which is contrary to these conditions shall be null and void.
5. The contractor shall not be held liable for errors or omissions in designs by others, nor inadequacies of materials and equipment specified or supplied by others.
6. Equipment and materials supplied by the contractor are warranted only to the extent that the same are warranted by the manufacturer.

7. *The contractor shall not be liable for indirect loss or damage.*

8. *Unless included in this proposal, all bonding and/or special insurance requirements are supplied at additional cost.*

8. *"I do hereby agree that, in the event of default in any payment due, I will be required to pay our collection expenses, including but not limited to; check return fees, court costs, reasonable attorney's fees or collection agency fees.*

9. *This proposal is valid for 90 days.*

Purchasers Responsibilities:

Purchaser is responsible for providing full production of all products to all machines during start-up. Applied Power Systems will not be held responsible for any damaged product during start-up. Delays to the progress of the start-up from lack of product or incorrect product will either be charged for at our regular service rates or our technician will return to office and reschedule.

If the project is rescheduled or canceled there will be a rescheduling fee, which will be the responsibility of the purchaser. This fee is intended to cover lost revenues transportation and other costs incurred by Applied Power Systems.

Purchaser is responsible for taking delivery of items after Applied Power Systems completes their portion of the work as specified in our scope.

I acknowledge that I have read the above "Purchasers Responsibilities" and agree to the above terms and conditions.

Respectfully

Accepted by:

*B. Kevin Elkins (Sr. Estimator)
Applied Power Systems*

Customer

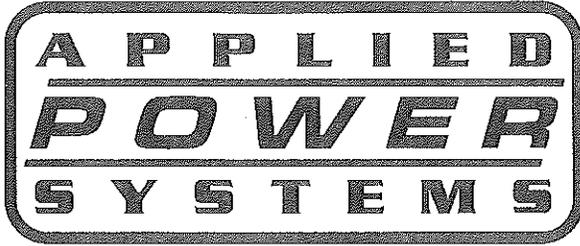
San Jose/408.412.1729



Sacramento/916.293.5791



24 Hour Emergency/866.777.EPOWER



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PROPOSAL

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Attention: Bob Beckwith

Project: Main Sub: PG&E Incoming Service

Location: Oakland, CA

Reference: SAC13766

Phone: 510-466-7269

Fax No:

Email: rbeckwith@peralta.edu

Estimator: Nicholas Domich

EXECUTIVE SUMMARY:

During its recent GS 165 inspection on March 4, 2013, PG&E personnel indicated in an email that large amounts of rust evident in the main 12kV switchgear. Furthermore, heat strip is rusted over further indicating that the lack of heat has allowed an environment of moisture to thrive. PG&E has asked that Merritt College to address this issue to prevent an unscheduled outage at the campus down the road. The following Scope of Work will be executed on 3/29/2013.

SPECIFICATIONS:

Work in this specification includes field comprehensive testing of listed electrical component. When Testing Specifications are not available, use the National Electrical Testing Association Acceptance & Maintenance Testing Specs (NETA ATS-2009, IEEE 1584, NFPA 70e). Installation to be performed in conformance with National Electrical Code (NEC), in a qual

SCOPE OF WORK:

- Reference: PG&E email, dated March 4, 2013, sent to Bob Beckwith.
- APS site observations, March 4, 2013.
- Maintenance and testing on Main Switchgear and protective elements.
- Installation of (2) heat strips, Line thermostat, and 5kVA potential transformer (12kV:120/240V) in order to derive power from the bus bar.
- Necessary hardware, wire, and fuse block protection.
- All Preventive Maintenance (PM) scope is contingent on findings during the assessment. PM service deliverables would include cleaning of bolted connections, torque testing, exercising of switches, and greasing where needed.
- Medium voltage switching.

Single lines Referenced: Sheet ES 7.1

Thank you for giving us an opportunity to quote your job requirements. We look forward to working with you on this project.

PRICES:

\$7,493.⁰⁰

Switch/Transformer A, Items a-h

Note 1: Please insure that all load has been removed and necessary circuit breakers have been opened prior to APS Medium Voltage Switching.

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- 5. The contractor shall not be held liable for errors or omissions in designs by others, nor inadequacies of materials and equipment specified or supplied by others.*
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