Switchgear and Substation Replacement Project (XPL 181)

REQUEST FOR PROPOSALS
Engineering & Design Services
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**ATTACHMENTS:**

Attachments are available on the Humboldt State University Contract, Procurement & Risk Management website as follows: [https://www2.humboldt.edu/risksafety/?q=node/78](https://www2.humboldt.edu/risksafety/?q=node/78)

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I. INTRODUCTION

A. About Humboldt State University

Established in 1913 as a normal school, Humboldt State University is located in the coastal city of Arcata, 275 miles north of San Francisco in a setting of majestic redwood forests, rivers, bays, lagoons, and mountains. The hilltop campus is among the most beautiful in the country, and overlooks Humboldt Bay.

The main campus is located on 144 acres including 74 buildings and approximately two million square feet (of which approx. 600,000 is non-state space). Additionally, the University owns, leases, or has use agreements to an additional 600+ acres, which include the Trinity Annex (23,544 SF), Corporation Yard (49,891 SF), the Telonicher Marine Lab (16,208 SF) an Observatory (670 SF), saltwater and freshwater marshes, lakes and ponds, forest lands, and a sand dune preserve.

The University offers 47 majors comprising 69 minors, 64 options/concentrations, 22 graduate programs, 13 credential programs and 12 certificates of study for nearly 8,000 students. Our campus master plan calls for eventual growth to a 12,000 student capacity over time.

B. About the Existing Switchgear and Substations

The Switchgear building is located adjacent to and immediately north of the Facilities Management building which is located near the intersection of 14th and B Streets on the University’s campus (Attachment 7). This building houses the main 15kV switchgear consisting of two separate sections. The first section houses the utility meter, draw-out main circuit breaker, two feeder breakers complete with relays, voltage meter and amp meter, and low voltage section with 25 kVA transformer feeding a 120/240V single phase house panel. The second section houses the bus tie transition and two feeder breakers complete with relays, voltage meter and amp meter. The two sections are connected via overhead conduits (Attachment 8). Three feeder breakers are utilized to serve the campus while the fourth is a spare. The 12kV service is distributed throughout the campus through a series of manholes and underground duct banks to each building on campus.

The main switchgear was manufactured by Abbot and was installed in 1974. The overall condition of the switchgear is good but it is beyond its useful life and is no longer serviceable as parts are obsolete. The switchgear is equipped with a main
1200A main breaker and three 600A feeder breakers. The three feeders are labeled Feeder 4, Feeder 5, and Feeder 6. Each feeder is equipped with vacuum breakers and generally has operated as intended when incidents have occurred.

The three feeder circuits (4, 5, and 6) originate from the Switchgear building and serve each of the facilities on campus through various selector switches. The circuits are looped through 15kV selector switches providing a reliable and redundant means of distributing power to each building located on the campus. The selector switches were installed in the year 2000 they are in good condition and are not part of the scope of this project. Feeder ‘4’ primarily serves the southeast portion of the campus; Feeder ‘5’ primarily serves the west side of campus; and Feeder ‘6’ primarily serves the central part of the campus (Attachment 8).

The campus main 12kV distribution system is made up of 15kV, ‘3’ conductor 250MCM EPR cables installed in 4” conduits which are encased in concrete duct banks that traverse through conduits and manholes to serve 12kV selector switches located throughout the campus. Radial feeders originating from these selector switches and sized to individual building loads serve each building’s substation.

The campus distribution system was upgraded in 2000 when new 15kV feeders and 15kV selector switches were provided and some of the older building substations were upgraded. The existing distribution system is in good condition. The University owns and maintains the main 15kV switchgear, 15kV distribution network and the substations located in each building.

II. PROJECT INFORMATION

A. Project Description

The University requests proposals from State of California Licensed Engineers to serve as project engineer associated with the design, replacement and installation of the main campus switchgear and feeder load distribution as well as equipment related to building substations identified for replacement (Attachments 7 and 8). The budgeted direct construction cost for this design-bid-build project is $1,680,000. The project engineer design-to-budget shall be 95% of the budgeted direct construction cost ($1,596,000). The project engineer will also provide services for the bidding phase and construction administration (Attachment 5). The design-to-budget ($1,596,000) will apply only to the main campus switchgear and following named building substations: Facilities Management Building (046), Gist Hall (023), Natural Resources (040), Forestry (005), and Siemens Hall (001).
In addition to the scope outlined above, the University also desires to pursue the same scope of work for additional building substations including: University Center (045), Health Center (042), Library (041), and Science B (003B). A design-to-budget has not been established for these buildings and the University is interested in pursuing this scope as an additive alternate to the awarded professional services agreement. See Section III for more information.

**B. Summary of Major Project Elements**

The following summary of project elements was developed as part of campus wide infrastructure critical needs assessment. The assessment outlined the following equipment for replacement as well as redesign of main campus feeder loading.

- **Main Campus Switchgear:** Design and specify the replacement of both sections of the main switch gear and as well as redesign the load distribution on existing campus feeders 4, 5 and 6 to establish a more even load distribution. The design shall also address all conduit and pathways between the two sections as well as any other pathway or equipment needed within the switchgear building. The Project Engineer shall perform baseline electrical load analytics on the existing systems prior to the design effort to confirm the existing operation, capacities and loads on the existing systems. This data shall be used to create a new basis of design that accommodates an even distribution of load on the main campus feeders from the main campus switchgear.

- **Building Substations:** For the purposes of this RFP, the term “substation” refers to a collection of electrical equipment identified in association with a building and which includes a mix of the following equipment: transformer, main distribution board, primary switch, secondary switch, panels and disconnects. Each substation will be designed independently in lieu of collating a bid package that will include bid alternates. Existing conditions for substations are included in (Attachment 9) and also described below.
  - **Facilities Management Building (046) Substation:** Equipment includes a transformer, primary building switch (600A), distribution board, and two disconnects (125A each).
  - **Gist Hall (023) Substation:** equipment includes a transformer, primary building switch (15kV), secondary switch (600A) distribution board, and two disconnects (30A, 60A).
  - **Natural Resources (040) Substation:** equipment includes a transformer, primary building switch (600A), distribution board,
motor control center (6 buckets, various starter sizes), emergency battery backup and panel “E”.

- **Forestry (005) Substation**: equipment includes a transformer, primary building switch (350A), and distribution board.

- **Siemens Hall (001) Substation**: equipment includes primary building switch (500A), Panel “M”, and three disconnects (200A, 200A, 180A).

- **University Center (045) Substation**: equipment includes a transformer, primary building switch, distribution board, and panel “M1”.

- **Health Center (042) Substation**: equipment includes a transformer, primary building switch (500A), distribution board, and one panel.

- **Library South (041) Substation**: equipment includes primary building switch, and distribution board.

- **Library North (041) Substation**: equipment includes a transformer, primary building switch (1600A), building switch (600A) to room 62, building switch (1000A) to room 43, distribution board, and panel “M”.

- **Science B (003B) Substation**: equipment includes a transformer, primary building switch, and distribution board.

### C. Anticipated Project Schedule

The project schedule includes the following milestones:

- February 2016: University RFP Issued.
- April 2016: Service Agreement Executed, Design Phase to Begin
- May–June 2016: Preliminary Design Submitted for Review
- July–September 2016: Construction Documents Submitted for Review
- October 2016: Construction Bid
- December 2015 - January 2017 Construction Window
- June 2017 – August 2017: Construction Window
- September 2017: Project Final Completion

### D. California State University Guidelines & Reference Standards

The following guidelines and reference standards as adopted by the California State University System shall be referenced, utilized and adhered to for the design of this project:

- Procedural Manual for California State University Capital Projects as Modified for this Project (Attachment 5)
E. Codes, Regulations, & Requirements
The following codes and regulatory requirements are applicable to this project:

- 2013 California Building Standards Code, Title 24 as adopted by the California Building Standards Commission, including all supplements and errata as effective on the date of submittal for plan check review.
- Public Contract Code, Sections 10700 et seq. (CSU Contract Law)
- California Code of Regulations, Title 8, (CAL/OSHA Standards)
- California Code of Regulations, Title 17 (Public Health)
- California Code of Regulations, Title 19 (Public Safety)
- NFPA 70E Standard for Electrical Safety in the Workplace
- All other applicable codes, regulations, and standards.

F. Authorities Having Jurisdiction
The following regulatory agencies have jurisdiction:

- Humboldt State University: Approval of the project and its corresponding design documents in alignment with the requirements of the State University Administrative Manual and approved Campus Capital Project Management Plan. Building Permits are issued by the Campus Deputy Building Official. The project is not subject to local city/county jurisdiction reviews.

G. Scope Exclusions
The project engineer will be required to coordinate its work with, but not be directly responsible for supervising work by the following Owner’s consultants:

- CSU Designated Mechanical, Electrical, Plumbing & Telecom Peer Reviewer, P2S Engineering, Long Beach, CA
- CSU Designated 3rd Party Plan Check Reviewer (Not Yet Named)

The University will retain Chancellor’s Office assigned campus peer reviewers named above to conduct peer review of design documents throughout the project to the point of permit. Such peer reviewers will also be retained during the construction phase of the project so as to be available to assist University staff and the project engineer as needed on technical issues.

The University will retain a CSU-approved 3rd party plan check review agency to review design documents at each major design milestone. The University will consult with the project engineer on the selection of the 3rd party plan check review agency.
The University will incur permit costs associated with approvals as required for the project.

III. CONTRACT & FEES
A. Contract Documents
The contract utilized for this project is the California State University Architect/Engineer Agreement (Attachment 1) which also includes the following documents: Scope of Work (Attachment 2), Schedule of Fees (Attachment 3), Project Schedule (Attachment 4), and the modified CSU Procedure Manual for Capital Projects (Attachment 5). The California State University System Office of General Counsel prevents these agreements from being modified.

B. Fees
The fee for services shall be negotiated based on requirements within the documents noted above, budgeted direct construction cost as referenced in Section II. A. and utilizing the selected firm’s rate schedule. Firms shall propose lump sum fees, to be paid monthly, in arrears, based on “percent complete” rather than “hours expended” for each item listed in the Fee Proposal (Attachment 3). The University encourages proposed total fees not to exceed $135,000. Proposal alternates are not included in the “not to exceed amount” of $135,000. Invoices shall be submitted to the University’s designated design manager utilizing the AE Invoice Form (Attachment 6) and an equivalent such form as approved by the University.

I. PROPOSAL REQUIREMENTS
Submissions shall be comprised of two separate emails. Part I of your proposal shall be submitted first. Email shall be clearly labeled in the subject line as Part I of the firm’s proposal for the referenced project.

Under separate email, submit Part II of your firm’s proposal. Email shall be clearly labeled in the subject line as Part II of the firm’s proposal for the referenced project.

Part I: Provide one set of proposal documents in digital format. The following information shall be included in this order:

- **Title:** Include firm’s legal name and contact information for proposed Architect of Record for this project. Reference the title of this request for proposal and explicitly acknowledge addenda, if any. Indicate that the firm is pre-qualified by the CSU.
- **Official Signature:** Provide name, title, and signature of corporate officer authorized to sign contracts. Include proof of such authorization.
• **Understanding of the Project:** Demonstrate understanding of the project, its primary programmatic elements and explain your firm’s approach to the design.

• **Firm Background & Relevant Experience:** Identify the experience and qualifications of the firm as related to the project. Demonstrate project experience with at least three relevant projects. Include name of project, brief description, total project cost, completion date, and client reference name and contact info.

• **Assigned Personnel:** Identify the firm’s personnel assigned to the project and describe their roles and experience on similar work.

• **Associated Design Team Members:** Identify proposed design and engineering sub-consultants the firm proposes to engage to assist with the provision of services required for the project and explain your working relationship and experience in working with those firms. Identify the role of each firm in relationship to the project scope.

• **Contract Documents:** Indicate the ability of your firm to execute required California State University contract documents without modification.

• **Sustainability:** Describe the firm’s approach and expertise with sustainable design including energy efficiency, life cycle cost, indoor environmental quality, and site design measures.

• **Code Compliance & Quality Control:** Explain how your firm ensures code compliance and quality in the professional services delivered from design through construction administration and project close out.

• **Insurance:** List the firm’s insurance coverage. Evidence of such coverage is not required at this time, but will be secured prior to entering into agreement. Confirm the firm's ability to meet California State University insurance requirements as outlined in the contract documents.

• **Schedule:** Provide a proposed schedule that will meet the expected completion date. This may be in any format appropriate. The schedule will capture elements as presented in Attachment 4 and address submittals as outlined in Attachment 5. Additionally, describe methods for keeping the project on schedule and clearly indicate any foreseen challenges achieving such.

• **Evidence of License:** Indicate whether the firm and associated sub-consultants are licensed to perform design work in the State of California.

**Part II:** Provide one set of proposal documents in digital format. The following information shall be included in this order

• Firm Billing Rates

• Sub-Consultant Billing Rates

• Fee Proposal (Attachment 3) include base proposal fee and alternates fee as identified on the Fee Proposal
II. SELECTION PROCESS
The selection team will review proposals for conformance with the requirements included in this request for proposals and will evaluate submissions to identify the most responsive firm. Ratings shall be based on, but not limited to, the following criteria:

- Demonstrated understanding of project objectives.
- Experience and qualifications of the firm, proposed staff and sub-consultants relevant to the project including construction administration with regard to projects of a similar nature and scope.
- Design and technical engineering ability of the firm, proposed staff and sub-consultants and specifically associated with projects of a similar nature and scope.
- Demonstrated competency associated with ensuring budget, objectives and schedule requirements will be achieved especially as associated with projects of a similar nature and scope.
- Prior work of the firm, proposed staff and sub-consultants for a university or the California State University system.
- Availability of key personnel throughout the duration of the project schedule as proposed.
- Service delivery, project schedule, budget and performance record of the firm for projects of a similar nature and scope.
- The Firm’s ability to execute the CSU Architect/Engineer Agreement including insurance requirements.

III. PROPOSAL LOGISTICS
A. Information Contact
Questions regarding the Request for Proposal should be directed in writing to Michael Fisher (michael.fisher@humboldt.edu).

B. Optional Pre-Proposal Meeting
All firms are invited to attend an on-campus pre-proposal meeting. University staff will review the overall project and its scope, answer questions and lead a comprehensive tour of the existing facilities and proposed project site.

The meeting will be held at 1:00 p.m., Friday, February 19, 2016 at the Facilities Management Building located at the intersection of 14th and B Streets and on the Humboldt State University campus located in Arcata, California. A campus map can be downloaded at: http://www.humboldt.edu/humboldt/maps.

Complimentary parking permits can be arranged by requesting such no later than Wednesday, February 17th at 1:00 p.m.. Requests should be directed to Krista Chalker at (707) 826-4111 or via email at krista.chalker@humboldt.edu.
C. Deadline & Location for Proposal Submittal

Please submit, via email, one electronic copy of your firm’s proposal for the role of Project Engineer for the Switchgear & Substation Replacement Project on or before **5:00 PM PST, Friday, March 4th, 2016.**

Submissions shall be comprised of two separate emails. Part I of your proposal shall be submitted first. Such shall be clearly labeled in the email subject line as Part I of the firm’s proposal for the referenced project.

Under separate email, also submit Part II of your firm’s proposal; such shall be clearly labeled in the email subject line as Part II of the firm’s proposal for the referenced project.

Please direct your submissions to:

Michael Fisher  
Associate Director of Planning & Design  
Facilities Management  
Humboldt State University  
Email: michael.fisher@humboldt.edu