

Appendix A Technical Specifications

1412156846 (RFP-CCNA) Automation, Protection, and Control Engineering Services for JEA Generating Plants and Substations

1 Scope of Work for Design

This Solicitation is for JEA to obtain General Engineering Services of an experienced engineering firm with technical expertise in engineering generator, substation, and transmission Protection and Control (P&C) projects to supplement JEA's internal design staff. (The "Work") The Work will consist of performing engineering and design services as requested by JEA in support of engineering generator, substation, and transmission Protection and Control (P&C) projects for which the estimated construction cost of set forth in Florida Statutes Section 287.055, known as the Consultants' Competitive Negotiation Act (CCNA).

The proposing engineering firm will need to allow its engineers to work on-site with JEA engineers, and also be able to work from their corporate office. The firm's staff should be proficient with relays manufactured by Schweitzer Engineering Laboratories (SEL) and the following computer programs: Microstation, Aspen OneLiner, Aspen Distriview, and SEL applications (AcSELeRator Quickset/Diagram Builder/RTAC, SEL Settings Assistant, SEL-5010, etc.). All design work shall be in compliance with JEA standards as deemed acceptable by the JEA project engineer and located at the following link

https://www.jea.com/Engineering_and_Construction/Electric_Reference_Materials/ . All design work shall be in compliance with all applicable codes and industry standards including, but not limited to, NEC, NESC, IEEE/ANSI.

1.1 Potential Protection and Control Design Scopes:

1.1.1 Complete Protection and Control (P&C) design for a new substation.

Projects will generally include the following:

- a. Development of drawings package in Bentley Microstation format which consists of AC/DC schematics, relay single lines, equipment interconnection drawings, communication drawings and panel wiring drawings.
- b. Development of coordination study in Aspen OneLiner and Aspen DistriView and an analysis report used for creating setting for relays.
- c. Relay specification
- d. Relay setting development (calculations and logic) for all relays and development of an associated settings report.
- e. Development of electronic setting files
- f. Development of SEL RTAC communications processor settings and associated DNP point assignment for communication with JEA's SCADA system.
- g. Development of the HMI for the SEL RTAC communications processor.
- h. Development of an annunciator point list for the SEL-2523 relay.
- i. Developed operations file which contains a brief description of the function of all protective equipment.
- j. Development of a cable schedule that contains a list of new cable to be run from the yard to the control house.
- k. Development of a cable pull list that contains a list of new cable to be run from panel to panel inside the control house.
- l. Development of a Commissioning Checklist to assist the field with the implementation of the project.

1.1.2 Complete P&C design for modifying an existing substation's protection system due to new requirements, upgrades and/or redundancy purposes

Projects will generally include the following:

- a. Development of drawings package in Bentley Microstation format which consist of AC/DC schematics, relaying single lines, equipment interconnection drawings, communication drawings and panel wiring drawings.
- b. Development of coordination study in Aspen OneLiner and Aspen DistriView and an analysis report used for creating setting for relays.
- c. Relay specification
- d. Relay setting development (calculations and logic) for all relays and development of associated settings report.
- e. Development of electronic setting files
- f. Development of communications processor settings and associated DNP point assignment for communication with JEA's SCADA system.
- g. Development of an annunciator point list for the SEL-2523 relay.
- h. Modification of operations files which contains a brief description of the function of all protective equipment.
- i. Development of a cable schedule that contains a list of new cable to be run from the yard to the control house.
- j. Development of a cable pull list that contains a list of new cable to be run from panel to panel inside the control house.
- k. Development of a Commissioning Checklist to assist the field with the implementation of the project.

- 1.1.3 Complete P&C design modifying an existing generator protection system due to new requirements, upgrades and/or redundancy purposes

Projects will generally include the following:

- a. Development of drawings package Bentley Microstation format which consist of AC/DC schematics, relaying single lines, equipment interconnection drawings, communication drawings and panel wiring drawings.
- b. Development of coordination study in Aspen OneLiner and an analysis report used for creating setting for relays.
- c. Relay setting development (calculations and logic) for all relays and development of associated settings report.
- d. Development of electronic setting files
- e. Development of communications processor settings and associated DNP point assignment for communication with JEA's SCADA system.
- f. Modification of operations files which contains a brief description of the function of all protective equipment.
- g. Development of a cable schedule that contains a list of new cable to be run from the yard to the control house.
- h. Development of a cable pull list that contains a list of new cable to be run from panel to panel inside the control house
- i. Development of a Commissioning Checklist to assist the field with the implementation of the project.

- 1.1.4 Complete development of relay settings and associated settings reports for existing electrical assets (i.e. – generators, transmission line and etc.) due to new requirements, upgrades and/or redundancy purposes.

2 Minimum Qualifications:

Respondent must meet the following Minimum Qualifications to be considered eligible to have its Response evaluated by JEA. Respondent must complete and submit the Minimum Qualification Form provided in this Solicitation. Respondents that are working or have worked for JEA in the past 2 years involving similar work must submit JEA as a reference. JEA reserves the right to ask for additional back up documentation or additional reference projects to confirm the Respondent meets the requirements stated above.

JEA may reject Responses from Respondents not meeting all of the following Minimum Qualifications:

- I. Respondent must not be on the State of Florida Convicted Vendor List, State of Florida's Suspended Vendor List, the City of Jacksonville's Disqualified Vendor List, have their bidding privileges actively suspended by JEA, been debarred by JEA, or have had a contract with JEA was terminated for default within the last two (2) years.
 - II. The Proposer must have successfully completed three projects within the past three years (as of the proposal due date) that meet the requirements of either Category 1 and/or Category 2 outlined in Section 2 of Appendix A – Technical Specifications; the projects are not required to cover both categories. All three projects must also satisfy the requirements described in the Electric Protection and Control (Relay) Design section of Appendix A – Technical Specifications. A project will be considered complete if the Company issued the final design package to the customer prior to the proposal due date, even if the project has not yet been implemented.
- Category 1
Modification of an existing substation protection system or development of a new substation protection system that required:
 - Development of drawings (i.e. AC/DC, wiring, interconnections, logic drawings, communications, single line, etc.) for the following:
 - Primary/Secondary transmission line protection
 - Breaker failure protection
 - Bus Protection
 - Distribution Protection
 - All items described above under Category 1 must be included in Category 1 project references.
 - Development of Settings (i.e performing the calculation, configuration, and development of relay protection settings) for the following
 - Primary/Secondary transmission line protection
 - Breaker failure protection
 - Bus Protection
 - Distribution Protection
 - All items described above under Category 1 must be included in Category 1 project references.
 - Category 2
Modification of an existing generation protection system or development of a new generation protection system that required:
 - Main generator protection development of drawings (i.e. AC/DC, wiring, interconnections, logic drawings, communications, single line, etc.)
 - All items described above under Category 2 must be included in Category 2 project references.
 - Main generator protection development of settings (i.e. performing the calculation, configuration, and development of relay protection settings, etc.)

- Electric Protection and Control (Relay) Design: Eligible projects are defined as providing electrical protection and control engineering design services where the cost was at least \$75,000.00. An eligible project is required to have Protection & Control (P&C) drawings and settings. Each project must also be a project from the following municipal, cooperative or investor-owned utilities listed below from the SERC Reliability Corporation region.

Example of utilities in the SERC region:

- Florida Keys Electric Cooperative Association
- Florida Municipal Power Agency
- Florida Power & Light
- Florida Public Utilities
- Gainesville Regional Utilities
- Homestead Energy Services
- JEA
- Lakeland Electric
- Lee County Electric Cooperative
- Orlando Utilities Commission
- Duke (Florida)
- Reedy Creek Improvement District
- Seminole Electric Cooperative
- City of Tallahassee
- Tampa Electric
- Utilities Commission of New Smyrna Beach
- City of Vero Beach
- City of Winter Park
- Beaches Energy Services (FMPA)
- City of Clewiston (FMPA)
- City of Green Cove Springs (FMPA)
- City of Leesburg (FMPA)
- Fort Pierce Utilities Authority (FMPA)
- Keys Energy Services (FMPA)
- Kissimmee Utility Services (FMPA)
- Ocala Utility Services (FMPA)