

Feb 24, 2023

Primera Proposal #20230093

Re: Naperville 90 Ogden Substation Circuit Shield Relay Upgrades

Primera Engineers Ltd (Primera) is pleased to present this engineering services proposal for substation design on the 90 Ogden Relay Upgrade project. It is our understanding of the scope that we will design the replacement of the ABB relays at 90 Ogden with Schweitzer Engineering Laboratories (SEL) microprocessor-based relays.

### **Scope of Work**

#### **Substation Physical**

- Design cable routing for new relaying to other relay panels and SCADA Cabinet/Rack.
- Design the relocation or replacement of any existing devices on the existing doors due to the change out.
- The existing panel 1 door will be replaced with a new steel door. This door will house the new transformer 90XA & 90XB relays, and the new 12kV bus differential relays for both the bus A & B.
- Possibly extra CT's will be needed. This will be determined through the design of the 12kV bus differential with 86 lockout relays.
- A 12kV bus tie closing scheme is to be engineered when a transformer or line is lost.

#### **Protection & Controls / SCADA**

- Modify existing schematic drawings for new relay installation
- Modify existing wiring drawings for new relay installation
- Modify existing one line, three-line, and trip and close drawings
- Design relay replacement at Modaff and Meadows Substation. Replacement to consist of:
  - Demo and replacement of rear panel door
    - Create front view drawings and coordinate with panel manufacturer for full door replacement. Perform walkdown with panel manufacturer as necessary to verify measurements.
  - Remove existing ABB Circuit Shield relays. New relaying to consist of the following:
    - Transformer 90XA and 90XB relaying to be replaced with an SEL-787 and SEL-351S
      - All necessary test switches and appurtenances
  - Design a new bus differential relay scheme with a SEL-587Z
  - The preferred automation for the 12kV bus tie closing will be a SEL product
  - Design new DC Schematics for each relay package
  - Design all necessary SCADA connections to new microprocessor relays
  - Design all necessary fiber connections between Modaff and Meadows substations
- Metering to remain in place and reconnected if necessary

#### **General**

- Create Bill of Materials
- Project Management including schedule updates, meetings, accruals & forecasts, and invoicing
- Construction support and resolution of RFIs
- Incorporate as-builts into drawing set

**Assumptions**

Primera has assumed the following in the preparation of this proposal:

- No permitting support is required
- Schedule assumes two-week review cycle (10 business days)
- AC and DC Systems are assumed to be adequate for the expansions
- SynchroGrid to develop the relay settings files, calculations, short circuit model analysis, and all other relay settings documentation
- SynchroGrid to provide remote commissioning support

**Milestone Schedule**

30% Issuance	6 weeks after award
60% Issuance	10 weeks after receipt of 30% Comments
100% Issuance	14 weeks after receipt of 60% Comments

**Project Team**

A dedicated and experienced team of engineers, designers, and drafters will be assigned to support this project. The team will include the following members, with additional engineering and design support as needed:

Project Manager	Mark Bartolameolli
Lead Substation Engineer	Nick MacFarlane
Sr. Design Engineer	Jim Manimala
P&C Engineer	Mariana Suarez
T&S Department Manager	Howard Eaton

**Budget:**

This base as described in this proposal will be performed on a fixed price basis for **\$97,094 (MWBE commitment 100%)**.

We propose using the terms and conditions to be determined between Naperville and Primera.

We appreciate the opportunity to serve the City of Naperville through this proposal for engineering services. Please feel free to contact me if you should have any questions or require additional information on our proposal at 847-846-3375.

Sincerely,

*Mark Bartolameolli*

Mark Bartolameolli, PMP  
Project Manager