Amendment 1

Scope - Fridley Pump Electrical Design

Background

Black & Veatch (B&V) recently completed an assessment of the electrical equipment serving the Fridley Pump Station, which primarily included an exterior transformer serving the pump station, and switchgear located inside the pump station to distribute power. The assessment concluded that the transformer and switchgear should be replaced. This scope includes design services for their replacement.

Project Scope

The project will include the following elements and considerations.

1. The project will replace the existing 2.4kV substation transformer and secondary section with two new primary transformers, along with associated switchgear. This configuration will enhance system reliability and support continued operation in the event of transformer failure or maintenance.
2. The existing transformer is connected to overhead lines via open spade connectors. The new transformer will feature an air terminal on the primary side, potentially with a fused switch, and a secondary main service breaker. The transformer will be situated within a fenced area, adjacent to the existing transformer if there is sufficient space.
3. The existing walk-in type secondary main service breaker is located remote from the transformer. It will be replaced with a secondary section close-coupled to the transformer with a new walk-in enclosure. Primary cables will be rerouted from their current position down the existing pole, then underground to the primary connection point.
4. The project will replace cables from the transformer to the switchgear within the building.
5. Consideration will be given to removing the manhole or providing additional sealing to address flooding issues and other related concerns.

Task 3 – Electrical Layouts

1. Develop several alternatives for new transformers:
    a. Two transformers, each sharing approximately half of the pump station's electrical load. Each transformer will be sized for 75% of the electrical load.
    b. Two transformers, each sharing approximately half of the pump station's electrical load. Each transformer will be sized for 100% of the electrical load.
2. Develop layouts, advantages, and disadvantages, and submit to SPRWS. Develop order of magnitude costs for each layout. Conduct review meeting with SPRWS to select alternative.

Task 4 – Design

1. Drawings

    a. Develop design drawings (Structural, Civil Site, and Electrical). The table at the end of this scope provides the anticipated drawing list.
2. Specifications
    a. Develop specifications (Materials, Equipment, Instrumentation, Piping and Valves, and Electrical). The table at the end of this Work Authorization provides the anticipated specification list.
3. Deliverables
    a. Provide an informal check-in submittal review meeting with SPRWS approximately 50% through detailed design.
    b. Provide a 90% complete design set to SPRWS for review. Conduct review meeting with SPRWS, collect comments, and incorporate comments into design documents.
    c. Provide a bid-ready set of drawings and specifications.
    d. Prepare an Opinion of Probable Construction Cost when the design is 90% complete.

Anticipated Drawing List

1. Cover and Drawing List
2. Civil/Electrical - Site Plan Demolition
3. Civil/Electrical - Site Plan
4. Electrical - Legend
5. Electrical - Abbreviations and Notes
6. Electrical - One-line diagram, Demolition and Proposed
7. Electrical - Power Plan
8. Electrical - Details
9. Electrical - Secondary Breaker - Schematic

Anticipated Specification List

1. Division 01
2. 02050 – Demolition
3. 02210 - Finish Grading
4. 03300 - Cast-in-Place Concrete
5. 16050 - Electrical
6. 16100 - Electrical Equipment Installation
7. 16312 - Primary Unit Substations
8. 16346 - Low-Voltage Switchgear
9. 16360 - Medium-Voltage Fusible Interrupter Switchgear
10. 16670 - Lightning Protection for Structures