Questions and Answers

SHORT CIRCUIT, PROTECTIVE DEVICE COORDINATION AND ARC FLASH STUDY
RFQ Specification No. TW25-0043F

All interested parties had the opportunity to submit questions in writing by email to Brandon Snow by date questions were due. The answers to the questions received are provided below and posted to the City's website at www.TacomaPurchasing.org: Navigate to *Current Contracting Opportunities* / *Services Solicitations*, and then click *Questions and Answers* for this Specification. This information IS NOT considered an addendum. Respondents should consider this information when submitting their proposals.

1. **Question: Would Tacoma be able to provide any previous arc flash studies and the system single line electrical diagrams, please.**

   Answer: Tacoma Water has three protective coordination and arc flash studies. Two studies using the SKM software have been completed - Green River Filtration Plant study issued 10/20/2013 and the Ozone Facility issued 5/14/2015. These studies will be provided to the consulting firm awarded the contract. Refer to question 5 and 6 responses.

2. **Question: Confirm Tacoma Water electrician will open up electrical equipment as needed during field investigation, additional electricians from consultant team are not required.**

   Answer: Tacoma Water will provide an electrician(s) to open electrical equipment to acquire protective device equipment and settings. Additional electricians provided by the consultant team are not required.

3. **Question: Confirm responsible party for implementing any agreed upon protective device trip setting recommendations in the field.**

   Answer: Tacoma Water will implement agreed upon protective device settings.

4. **Question: Provide electrical one-line drawings showing equipment included in scope of work.**

   Answer: Refer to question 5 and 6 responses

5. **Question: Can you specify the number of pump stations, well sites, and reservoirs that are in your system?**

   Answer: Pump Stations 25, Well Sites 32, Reservoirs 14

6. **Question: Can you provide one-line diagrams for each site? Or at least a typical one line for each type of site (filtration plant, pump station, well, and reservoir)?**

   Answer: Tacoma Water will provide existing one-line drawings where drawings exist, part of the scope of work will be to verify these drawings for accuracy, and red line. For locations

that do not have one-line drawings Tacoma Water, and the consultant shall generate sketches for these locations for future drafting by Tacoma Water.

Filtration and Ozone Facility:

The Filtration and the Ozone Facility each have a Puget Sound Energy primary metered supply. After the meter the Ozone Facility electrical distribution includes a 12kV switch, step down transformer, 480V switchgear, switchboard and three motor control centers. The motor control centers supply inductive and resistive loads. The motor control centers also feed step down transformers to supply low voltage loads from lighting and distribution panels. The Ozone Facility distribution system includes a standby generator.

After the meter the Filtration Facility electrical distribution includes two 12kV switchgear connected in a ring topology. The ring topology supplies the process building through four stepdown transformers, to four switchboards which feed redundant to process building motor control centers connected via a tie breaker. The distribution system includes fifteen motor control centers. Type of motor controls include across the line starters, reduced voltage soft starters and variable frequency drives. The motor control centers feed resistive and inductive loads. The motor control centers feed step down transformers to supply low voltage loads from lighting and distribution panels. Two parallel standby generators are connected to one of the 12kV buses. Additionally, the switchboard can be supplied via a standby generator.

Wells:

The power distribution system for the North Fork wells located near the filtration facility consists of 115kV/12kV substation circuit breaker feeding seven well sites. The well site includes step down transformers for the medium voltage motor and low voltage auxiliary loads. A standby generator supports these loads in the event the 12kV is unavailable.

The power distribution system for the twenty-three in-town wells generally consists of a 480Vac feeder from the power utility to a stepdown transformer feeding a motor control center. The motor control centers supply inductive and resistive loads and feeds a stepdown transformer to supply low voltage loads from a distribution panel. Some wells have ability to connect a portable standby generator through manual transfer switch. There are two wells that have a medium voltage power source and switchgear with similar low voltage distribution system.

Pump Stations:

The power distribution system for the twenty-five pump stations generally consists of a 480Vac feeder from the power utility to a stepdown transformer feeding a motor control center. The motor control centers supply inductive and resistive loads and feeds a stepdown transformer to supply low voltage loads from a distribution panel. Motor controls consist of across the line starters, reduced voltage starters and variable frequency drives. A pump station typically has a maximum of five motors. Generally, a pump station has an installed standby generator or the means to connect a portable generator.

Reservoirs:

The power distribution system for the fourteen reservoirs generally consists of a 240/120Vac feeder from the power utility to a distribution panel. The distribution panel supplies power to lighting and other auxiliary loads to support the operation of the reservoir.

7. **Question: I am reviewing this RFQ and was curious if you have existing one-line drawings you would like this quoted from?**

   Answer: The Request for Qualification is not requesting a quote or cost. Refer to the RFQ Section 9 CONTENT TO BE SUBMITTED for clarification. Also, please refer to question 5 and 6 response.

8. **Question: Have there been changes since your last study?**

   Answer: Yes. There are instances where the installed settings do not match the protective settings called out in the study.