



Strand Associates, Inc.[®]
910 West Wingra Drive
Madison, WI 53715
(P) 608.251.4843
www.strand.com

September 24, 2025

[REDACTED]

Re: Water Utility Supervisory Control and Data Acquisition (SCADA) System
City of Crest Hill, Illinois (Owner)

[REDACTED]

On behalf of Owner, Strand Associates, Inc.[®] is sending you this request for cost proposal for electrical services. These services are requested to address functionality and reliability concerns with the existing SCADA system. The improvements at the seven sites are listed in the following.

Well No. 1

1. Replace three existing smoke detectors. Smoke detectors shall be 120 volts alternating current (VAC) with two Form A/C contacts, Gentex Model STRR, or equal. Provide two #12 and #12 ground in 3/4-inch conduit from the lighting panel to each smoke detector and two #14 in 3/4-inch conduit from the SCADA panel to each smoke detector. Test and verify the smoke alarm indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each smoke detector:

- a. 10 feet (electrical room device)
- b. 20 feet (storage room device)
- c. 30 feet (chemical room device)

2. Provide a low-temperature thermostat in each room. Thermostats shall be rated National Electrical Manufacturers Association (NEMA) 4X, PECO Model TF115-001, or equal. Provide two #14 in 3/4-inch conduit from the SCADA panel to each thermostat. Test and verify the low-temperature indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each thermostat:

- a. 15 feet (electrical room device)
- b. 25 feet (storage room device)
- c. 35 feet (chemical room device)

3. Add high- and low-pressure alarms on the existing system pressure input to the SCADA system. Provide operator adjustable alarm set points at the operating interface panel (OIP). Test and verify the high- and low-pressure indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Mr. Justin Pfizenmaier
Excel Electric
Page 2
September 24, 2025

Well No. 4

1. Provide smoke detectors in the filter and chemical rooms. Smoke detectors shall be 120 VAC with two Form A/C contacts, Gentex Model STRR, or equal. Provide two #12 and #12 ground in 3/4-inch conduit from the lighting panel to each smoke detector and two #14 in 3/4-inch conduit from the SCADA panel to each smoke detector. Test and verify the smoke alarm indication to the SCADA panel, locally and at the master station. Coordinate with Energenics to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each smoke detector:

- a. 10 feet (electrical room device)
 - b. 30 feet (chemical room device)
2. Provide low-temperature thermostats in the filter and chemical rooms. Thermostats shall be rated NEMA 4X, PECO Model TF115-001, or equal. Provide two #14 in 3/4-inch conduit from the SCADA panel to each thermostat. Test and verify the low-temperature indication to the SCADA panel, locally and at the master station. Coordinate with Energenics to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each thermostat:

- a. 15 feet (electrical room device)
 - b. 35 feet (chemical room device)
3. Provide indication of "well pump stop" (high filter level) and "service pump stop" (low filter level) as measured by the existing iron filter level probes at the SCADA system. There are existing Ametek 1500 series level control relays with spare contacts in the US Filter control panel that can be used to obtain these signals. Modify the US Filter control panel as required. Provide four #14 in existing 3/4-inch conduit containing discrete signal wiring from the SCADA panel to the US Filter control panel, which is directly adjacent to the SCADA panel. There are existing digital inputs at the SCADA panel for this signal (I:0/12 through I:0/19). Provide programmable logic controller (PLC), OIP, and Human-Machine Interface (HMI) graphics programming as required. Test and verify the indication of both signals to the SCADA panel, locally and at the master station.

Well No. 7

1. Review the wiring terminations associated with the existing drawdown level transducer at the instrument (if there is a field-installed junction box where the transducer cable is spliced) and at the SCADA panel. Review and adjust the scaling of the transducer and feedback to the SCADA panel, locally and at the master station. The transducer was replaced recently, but the well level does not display accurately at the SCADA panel.

Well No. 8

1. Provide smoke detectors in the filter, chemical, and electrical rooms. Smoke detectors shall be 120 VAC with two Form A/C contacts, Gentex Model STRR, or equal. Provide two #12 and #12 ground in 3/4-inch conduit from the lighting panel to each smoke detector and two #14 in 3/4-inch conduit from the SCADA panel to each smoke detector. Test and verify the smoke alarm

Mr. Justin Pfizenmaier
Excel Electric
Page 3
September 24, 2025

indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

2. Assume the following distances between the SCADA panel and each smoke detector:
 - a. 10 feet (electrical room device)
 - b. 15 feet (filter room device)
 - c. 10 feet (chemical room device)
3. Provide low-temperature thermostats in the filter, chemical, and electrical rooms. Thermostats shall be rated NEMA 4X, PECO Model TF115-001, or equal. Provide two #14 in 3/4-inch conduit from the SCADA panel to each thermostat. Test and verify the low-temperature indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each thermostat:

- a. 15 feet (electrical room device)
 - b. 20 feet (filter room device)
 - c. 15 feet (chemical room device)
4. Provide indication of "well pump stop" (high filter level) and "service pump stop" (low filter level) as measured by the existing iron filter level probes at the SCADA system. There are existing Ametek B/W 1500 series level control relays with spare contacts in the US Filter control panel that can be used to obtain these signals. Modify the US Filter control panel as required. Provide four #14 in existing 3/4-inch conduit containing discrete signal wiring from the SCADA panel to the US Filter control panel, which is approximately 15 feet away from the SCADA panel. There are existing digital inputs at the SCADA panel for this signal (I:0/16 through I:0/19). Provide PLC, OIP, and HMI graphics programming as required. Test and verify the indication of both signals to the SCADA panel, locally and at the master station.

Well Nos. 9 and 12

1. Provide smoke detectors in the filter, chemical, and electrical rooms. Smoke detectors shall be 120 VAC with two Form A/C contacts, Gentex Model STRR, or equal. Provide two #12 and #12 ground in 3/4-inch conduit from the lighting panel to each smoke detector and two #14 in 3/4-inch conduit from the SCADA panel to each smoke detector. Test and verify the smoke alarm indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each smoke detector:

- a. 10 feet (electrical room device)
 - b. 15 feet (filter room device)
 - c. 20 feet (chemical room device)
2. Provide low-temperature thermostats in the filter, chemical and electrical rooms. Thermostats shall be rated NEMA 4X, PECO Model TF115-001, or equal. Provide two #14 in 3/4-inch conduit from the SCADA panel to each thermostat. Test and verify the low-temperature

Mr. Justin Pfizenmaier
Excel Electric
Page 4
September 24, 2025

indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each thermostat:

- a. 15 feet (electrical room device)
- b. 20 feet (filter room device)
- c. 25 feet (chemical room device)

Well No. 10

1. Provide smoke detectors in the filter, chemical, and electrical rooms. Smoke detectors shall be 120 VAC with two Form A/C contacts, Gentex Model STRR, or equal. Provide two #12 and #12 ground in 3/4-inch conduit from the lighting panel to each smoke detector and two #14 in 3/4-inch conduit from the SCADA panel to each smoke detector. Test and verify the smoke alarm indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each smoke detector:

- a. 10 feet (electrical room device)
- b. 15 feet (filter room device)
- c. 20 feet (chemical room device)

2. Provide low-temperature thermostats in the filter, chemical, and electrical rooms. Thermostats shall be rated NEMA 4X, PECO Model TF115-001, or equal. Provide two #14 in 3/4-inch conduit from the SCADA panel to each thermostat. Test and verify the low-temperature indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each thermostat:

- a. 15 feet (electrical room device)
- b. 20 feet (filter room device)
- c. 25 feet (chemical room device)

3. Program an available output relay on the existing high service pump variable frequency drive (VFD) to indicate "VFD Fault" at the SCADA panel, locally and at the master station. Provide two #14 in existing 3/4-inch conduit containing discrete signal wiring from the SCADA panel to the VFD, which is approximately 15 feet away from the SCADA panel.
4. Add an indication of "Filter In Backwash" to the SCADA panel, locally and at the master station. Provide an interposing relay and panel modifications in the US Filter control panel as required to derive a dry contact for "Filter In Backwash" indication. There is an existing digital input at the SCADA panel for this signal (I/9). Provide two #14 in existing 3/4-inch conduit containing discrete signal wiring from the SCADA panel to the US Filter control panel, which is approximately 20 feet away from the SCADA panel.

Mr. Justin Pfizenmaier
Excel Electric
Page 5
September 24, 2025

5. Provide indication of "well pump stop" (high filter level) and "service pump stop" (low filter level) as measured by the existing iron filter level probes at the SCADA system. There are existing Ametek B/W 1500 series level control relays with spare contacts in the US Filter control panel that can be used to obtain these signals. Modify the US Filter control panel as required. Provide four #14 in existing 3/4-inch conduit containing discrete signal wiring from the SCADA panel to the US Filter control panel, which is approximately 20 feet away from the SCADA panel. There are existing digital inputs at the SCADA panel for this signal (I:0/12 and I:0/13). Provide PLC, OIP, and HMI graphics programming as required. Test and verify the indication of both signals to the SCADA panel, locally and at the master station.

Well No. 11

1. Provide smoke detectors in the filter, chemical, and electrical rooms. Smoke detectors shall be 120 VAC with two Form A/C contacts, Gentex Model STRR, or equal. Provide two #12 and #12 ground in 3/4-inch conduit from the lighting panel to each smoke detector and two #14 in 3/4-inch conduit from the SCADA panel to each smoke detector. Test and verify the smoke alarm indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each smoke detector:

- a. 10 feet (electrical room device)
- b. 15 feet (filter room device)
- c. 20 feet (chemical room device)

2. Provide low-temperature thermostats in the filter, chemical, and electrical rooms. Thermostats shall be rated NEMA 4X, PECO Model TF115-001, or equal. Provide two #14 in 3/4-inch conduit from the SCADA panel to each thermostat. Test and verify the low-temperature indication to the SCADA panel, locally and at the master station. Coordinate with Energenecs to verify the existing alarm dialer calls out on each alarm.

Assume the following distances between the SCADA panel and each thermostat:

- a. 15 feet (electrical room device)
- b. 20 feet (filter room device)
- c. 25 feet (chemical room device)

All investigation related to electrical equipment, instruments, and wiring will be completed by a licensed electrician. Wiring diagrams exist for all control panels but should not be assumed to be accurate. Contact Nick Crevcoure at Energenecs at 262-377-6360 for scope items indicated.

All wiring shall comply with the National Electric Code (NEC) and applicable state and local codes. All wiring shall be run in conduit. Conduit shall be galvanized rigid steel, with hot-dipped galvanized supporting members, except conduit in the chemical rooms shall be Schedule 40 polyvinyl chloride with fiberglass reinforced plastic supporting members. Electrical Metallic Tubing (EMT) and Intermediate Metal Conduit (IMC) are not acceptable. Final connections may be made with liquid-tight flexible metal conduit. All wiring shall be type XHHW-2. Provide wire markers on each conductor, including neutral conductors. Markers on the power conductors shall identify the panel and branch circuit numbers. Markers on control conductors shall match the wire numbers shown on the control drawings. Wire

Mr. Justin Pfizenmaier
Excel Electric
Page 6
September 24, 2025

markers shall be permanently attached, heat-shrink type labels, Brady Model 3PS, or equal. Each equipment item shall be properly grounded in accordance with Section 250 of the NEC.

Provide a proposal including all labor and materials costs to complete the proposed work. Proposals shall be itemized by site and scope item as previously numbered. Include a comment on the soonest availability of qualified staff. It is desired that the work be completed no later than November 1, 2025.

The proposals are due by or before October 6, 2025. Please address the proposal to Julius Hansen (City of Crest Hill) and send one copy to each of the following addresses:

Julius Hansen
City of Crest Hill
[REDACTED]
Crest Hill, IL 60403

Mary Seehafer
Strand Associates, Inc.[®]
910 West Wingra Drive
Madison, WI 53715

If you have any questions, please call 608-251-4843.

Sincerely,

STRAND ASSOCIATES, INC.[®]

Mary Seehafer

Mary E. Seehafer

c: Julius Hansen, City of Crest Hill