

UTILITIES COMMISSION
City of New Smyrna Beach, Florida
200 Canal Street
P.O. Box 100
New Smyrna Beach, Fl. 32170-010

January 30, 2020

RE: ITB 07-20 Field St Capacitor Bank
ADDENDUM **No. 1**

To prospective vendors:

The Utilities Commission is issuing the following addendum. **As such it becomes an integral part of the proposal and must be acknowledged by the return of this signed form, with your proposal form, acknowledging receipt of the addendum.**

- Will NSB consider Cleveland Price for the 3-Phase 138kV disconnect switch. Cleveland Price is a U.S. manufacturing company with an exceptional reputation. They recently demonstrated their switches to NSB's substation group (Louis Benishek). **The 138kV disconnect switch is existing in UCNSB stores and will be furnished to the contractor for installation. No new switch is required.**

- Can you please confirm the specification for the current transformer. They require a 115kV Nominal system voltage and a 550kV BIL rating, with a Maximum system voltage of 145kV. Is the max system voltage of 145kV a typo? If the max system voltage is 145kV, then the unit would also have to be built to a BIL of 650kV. Could the customer please confirm if they want a unit rated for 145kV max system voltage (at a 115kv nominal system voltage) with a 650kV BIL? (if not a 115kV unit with a max system voltage of 123kV will be provided.) **Maximum system voltage is 123kV. See attached revised specification**

- The specification also mentions a voltage factor of 1.9 for 30 seconds for the current transformer which is not applicable for a current transformer. What is the 1-second thermal rating? **Minimum 1-second thermal rating for the current transformer shall be 42kA. See attached revised specification.**

A Copy of This Signed Form Must Accompany Your Proposal

Acknowledgment of Receipt of Addenda No. 1

Company _____

Title _____

Signature _____

SPECIFICATION
SECTION 16312
INSTRUMENT TRANSFORMERS

PART 1 GENERAL

1.1 SUMMARY

- A. This specification covers the design, engineering, manufacture and testing of high voltage instrument transformers

1.2 QUALITY ASSURANCE

- A. Comply with applicable portions of Section 16050, Basic Electrical Materials and Methods
- B. Provide components that are the standard product of a manufacturer regularly engaged in the production of the required materials and equipment.
 - 1. The manufacturer shall be responsible for the design, construction, and proper operation of all components.
- C. Comply with applicable standards including, but not limited to the most recent edition of the following:
 - 1. ANSI C2, National Electrical Safety Code.
 - 2. ANSI/IEEE C57.13.
- D. Design to provide satisfactory performance under the specified operating conditions.
 - 1. Suitable for outdoor unsheltered service and standard service conditions

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01330, Submittal Procedures.
 - 1. Approval documentation shall include the following:
 - a. Outline drawing, showing dimensions and base drilling details; valves and other auxiliary devices clearly identified with catalog numbers and purpose
 - b. Nameplate drawing
 - c. Schematic and wiring diagram
 - d. Drawings (Outline, Nameplate, Schematic, Wiring Diagram)

2. One bound instruction book shall be furnished with the equipment, containing the following information:
 - a. List of all equipment furnished
 - b. Storage and handling instructions
 - c. Installation instructions
 - d. Operation and Maintenance instructions
3. Final documentation shall include above items, plus
 - a. Instruction book
 - b. Test report

PART 2 PRODUCTS

2.1 COUPLING CAPACITOR VOLTAGE TRANSFORMERS

A. MANUFACTURERS

1. Provide CCVT's from one of the following:
 - a. GE/Alstom
 - b. ABB
 - c. Trench
 - d. or approved equal

B. COUPLING CAPACITOR VOLTAGE TRANSFORMERS

1. Provide voltage transformers meeting the following requirements:
 - a. Nominal System Voltage: 115kV line-to-line
 - b. Maximum System Voltage: 121kV line-to-line
 - c. System Frequency: 60Hz
 - d. Dual-Wound Secondaries
 - e. Secondary Voltage: 120V with 67V tap.
 - f. Connection: Single phase, line-to-ground.

- g. Burden: WXYZ-burden at 0.3 accuracy.
- h. BIL: 550kV

C. WINDINGS

- 1. The transformer windings shall be high conductivity electrolytic copper.
- 2. The high voltage capacitive divider shall be connected phase to ground.
- 3. The CCVT shall have secondary windings as shown on the Contract Drawings for independent metering and synchronization circuits.
- 4. Each coupling capacitor voltage transformer shall have two electrically separate secondaries, each capable of supplying voltage at both marked ratios.

2.2 CURRENT TRANSFORMERS

A. MANUFACTURERS

- 1. Provide current transformers from one of the following:
 - a. GE/Alstom
 - b. ABB
 - c. Trench
 - d. or approved equal

B. NEUTRAL CURRENT TRANSFORMERS

- 1. Provide metering accuracy current transformers meeting the following requirements.
 - a. Nominal System Voltage: 115kV line-to-line
 - b. Maximum System Voltage: ~~145kV~~ 123kV line-to-line
 - c. System Frequency: 60Hz
 - d. Current Ratio: Dual Ratio 40:5A.
 - e. Accuracy: C200
 - f. Thermal Rating Factor: 1.5.

REV. 1

REV. 1

~~g. Voltage Factor: 1.9 for 30 seconds.~~

h. BIL: 550kV

REV. 1

i. 1-second thermal rating: 42,000A minimum

2. Current transformer shall be designed for installation on the neutral of an ungrounded wye shunt capacitor bank. Transformer will measure neutral unbalance current.

2.3 RESISTIVE POTENTIAL DEVICES

A. MANUFACTURERS

1. Provide Resistive Potential devices (RPD) from one of the following:
- a. S & C Electric Model 81346R6
 - b. or approved equal

B. RESISTIVE POTENTIAL DEVICE

1. Provide a Resistive Potential Device meeting the following requirements.
- a. Nominal System Voltage: 69kV line-to-ground
 - b. Volt-Ampere Output Rating: 15VA
 - c. System Frequency: 60Hz
 - d. Voltage Ratio: 332:1
 - e. BIL: 350kV
2. The RPD shall be constructed of an oil insulated high voltage resistor assembly with a series output transformer.
3. RPD shall include a pressure relief valve for the tank.
4. RPD shall include a spark gap to protect the transformer from over voltages.
5. The device shall be designed for monitoring neutral to ground voltage on an ungrounded wye-connected shunt capacitor bank.
6. Resistive potential device shall be supplied with a minimum 9'-0" high galvanized steel mounting pedestal. S&C part number 92431R1-G or approved equal.

2.4 VOLTAGE TRANSFORMER LINE TERMINAL

- A. The line terminal shall be located at the top of the transformer. This terminal shall consist of a NEMA four-hole connection, with a minimum of 3" x 3" surface area.
- B. The terminal pad shall be oriented to allow the high voltage connection to be made either in line with the transformer axis or perpendicular to it.

2.5 CURRENT TRANSFORMER LINE TERMINALS

- A. The line terminals shall be located at the top of the transformer perpendicular to the transformer post and on opposite sides. These terminals shall consist of a NEMA four-hole connection, with a minimum of 3" x 3" surface area.
- B. The terminal pad shall be oriented to allow the high voltage connection to be made perpendicular to the transformer axis as shown on the contract drawings.

2.6 BASE HOUSING

- A. The base housing of all equipment defined herein shall be made of cast aluminum or painted steel.
- B. The oil-filled part of oil-filled type equipment shall be completely factory sealed to prevent breathing and absorption of moisture. The base housing shall be of weatherproof construction.
- C. The base shall contain insulating mineral oil that is free of PCB contamination.
- D. Provide a ground pad welded to the base housing. Pad shall be drilled and tapped to accept a NEMA standard terminal pad, with two ½" diameter stainless steel bolts.
- E. If the base requires painting, the color shall be ANSI #70 – Sky Gray.
- F. Provide a potential grounding switch on all CCVTs between the capacitor divider intermediate voltage circuit and ground. The switch shall be operable by a hook stick from ground elevation without opening the base housing of the coupling capacitor voltage transformer.

2.7 SECONDARY TERMINAL BOX

- A. The secondary terminal boxes shall be weatherproof design to keep moisture out and have a minimum of two 1 ½-inch NPT conduit hubs to allow installation of conduit to a junction box.

2.8 INSULATING OIL

- A. The insulating oil shall be certified free of PCBs.
 - 1. The transformer nameplates shall include a statement that the oil is PCB free.

2.9 PORCELAIN HOUSING

- A. All equipment line to ground insulation shall be porcelain, with the dimensions and characteristics required to meet the above ratings.
- B. The porcelain exterior shall be glazed and ANSI #70 - Sky Gray in color.

2.10 NAMEPLATE

- A. All devices shall be provided with a nameplate attached to the base of the device, easily visible from the ground after installation.
- B. Nameplate shall be stainless steel with engraved lettering.
- C. Shall be permanently attached using non-corrosive hardware.

PART 3 EXECUTION

3.1 TESTING

- A. The manufacturer's standard design and production tests shall be performed to verify conformance with ANSI C57.13 and the herein specified ratings.
- B. The Contractor shall employ an independent testing agency to perform acceptance testing of all new instrument transformers prior to energization.

3.2 INSTALLATION

- A. Installation shall be completed by the Contractor.

END OF SECTION