



CITY OF WAUCHULA

126 S. 7th Avenue
Wauchula, FL 33873

INVITATION TO BID

ITB# DC2020-02

Circuit Switcher for Substation

The City of Wauchula will be accepting sealed bids for manufacturing, FOB delivery to Substation, of one 72KV class, Gang-operated, 3-pole, Upright Vertical Style, SF6 Circuit Switcher (CS) to its sole substation located at 111 East Bay Street, Wauchula, FL 33873.

Sealed Bids must be received by the City of Wauchula, at the Administration Building, located at 126 South 7th Avenue, Wauchula, FL 33873 no later than 3:00 pm EST on May 28, 2020. Bids will not be accepted electronically. The Bidder shall be solely responsible for delivery of their bid. Reliance upon mail or public carriers is at the Bidder's risk. A firm may withdraw, substitute, or modify a bid with another by submitting a letter to the City prior to the bid opening. The withdrawal or substitution shall include the name of the firm, the date and time of the original bid and bid price, the name of a principal of the firm responsible for the action, and the action being taken. All bids will be opened and recorded at 3:00 pm EST on May 28, 2020. In response to Executive Order 20-52 issued by Governor Ron DeSantis and Resolution 2020-05 issued by the City Commission of the City of Wauchula, the bid opening will take place virtually rather than in person. Interested attendees can join the virtual bid opening at <https://us02web.zoom.us/j/89523367716> or by dialing 1(929) 205-6099 and entering Webinar ID 895 2336 7716. The City of Wauchula, at its sole discretion, reserves the right to cancel this invitation to bid, to reject any or all bids, to waive any and all informalities and /or irregularities, to re-advertise with either the identical or revised specifications, or not award a contract at all if it is in the best interest of the City to do so.

Sealed Bids shall reference the following on the outer envelope:

BIDDER'S NAME AND ADDRESS

CITY OF WAUCHULA
ITB# DC2020-02 Sealed Bid Submission
126 South 7th Avenue
Wauchula, FL 33873

Technical Specifications are included in the invitation to bid.

Pre-Bid Meeting: There will be no pre-bid meeting held for this invitation to bid.

Questions: All questions regarding this Invitation to Bid shall be submitted in writing and delivered to Ward Grimes, Purchasing Manager, City of Wauchula, 126 South 7th Avenue, Wauchula, FL 33873, or via email: wgrimes@cityofwauchula.com by May 20, 2020 at 2:00 pm EST. Bids will not be accepted electronically.

Circuit Switcher Specification For City of Wauchula Substation

May 2020

Technical Specification

1.0 GENERAL

City of Wauchula, Florida, henceforth referenced as The City, is accepting sealed bids for manufacturing and delivery, FOB delivery to Substation, of one 72KV class, Gang-operated, 3-pole, Upright Vertical Style, SF6 Circuit Switcher (CS) to its sole substation located at **111 East Bay Street, Wauchula, FL 33873**. The details in the ensuing paragraphs describe the circuit switcher.

- 1.1 Suppliers shall specify in their response to the ITB, in writing, whether exceptions are taken to any part of this specification.
- 1.2 Supplier shall provide a schedule of submittals within two weeks of the receipt of Purchase Order.
- 1.3 All required submittals for Owner-approval shall be in PDF delivered by email.
- 1.4 The workmanship, design, and materials shall be of the highest quality and be the most suitable for the application. The material shall be new, of proven manufacture, and free of defects. The design shall provide maximum mechanical and dielectric strength of the insulation and the elimination of potential discharge (corona) at test and operating voltages.
- 1.5 The CS shall meet at pertinent IEEE, ANSI, NEMA, UL, and ASTM standards applicable to high-voltage circuit interrupting devices suitable for operation in a solidly grounded substation.
- 1.6 The CS will be fed on the high-side from a 69kV, 3-phase, solidly-grounded wye, 60Hz, transmission system and will be installed in a grounded substation for protection of a power transformer (Delta on high-side and grounded wye on the low-side). The elevation is less than 3000ft above sea level. The ambient temperature range is -5°C to +40°C.

2.0 CIRCUIT SWITCHER RATINGS

The CS characteristics and ratings are listed below:

Type	Substation Outdoor CS with SF6-filled, Upright Vertical Style Interrupter
Power Frequency	60Hz
Interrupter Housing Material	Porcelain (ANSI 70 sky gray)
Continuous Current Rating	1,200A
Primary Fault Interrupting	40KA
Interrupting Time	3 cycles
Short-Time Withstand	40 kA (3 sec)
Peak Withstand	104 kA
Short-Circuit Making	40 kA
Rated Duty Cycle	O-0.3 sec-CO-15 sec-CO
Nominal System Voltage	69kV
Maximum System Voltage	72.5kV
High-Voltage BIL	350kV
DC Power, Alarm, Trip, and Control Voltage	48VDC
AC Power and Auxiliary Voltage	120/240V, 1-Phase, 3-wire, 60 Hz
Ambient Temperature Range	-10° C to +50° C

ADDITIONAL Circuit Switcher DETAILS

3.0 INTERRUPTER

Interrupters shall be upright vertical style sealed tanks using SF6 gas for insulation medium with the following additional features:

- 3.01 SF6 gas system shall utilize rigid copper and/or stainless steel flexible tubing.
- 3.02 Interrupter shall be field-refillable.
- 3.03 An over-pressure relieve device shall be utilized to normalize the pressure in case of overfilling.
- 3.04 The gas system shall include a color coded, temperature-compensated density gauge that is visible from the ground. The gauge shall be furnished with low-pressure alarm and lockout contacts. Battery powered gas density monitors are not acceptable.
- 3.05 The SF6 gas system shall be constructed such that the density gauge can be isolated from the interrupter to allow the low-pressure alarm and lockout contact set points to be verified. A means for refilling the system in the field without disassembling the circuit switcher must be provided. The device shall have a leak rate of less than 0.5% per year.

4.0 OPERATING MECHANISM

- 4.01 Circuit Switcher shall be provided with a spring open-spring close mechanism capable of a duty cycle of O-0.3 seconds-CO-15 seconds-CO. The spring shall be charged via an electric motor in 15 seconds or less. Pneumatic, hydraulic, or combination pneumatic/hydraulic mechanisms are not acceptable. Devices utilizing multiple mechanisms are not acceptable.
- 4.02 An ANSI 70 sky gray painted steel mechanism housing shall be furnished and shall be provided with the following accessories:
 - 1. Electric spring charging motor
 - 2. Color coded, temperature compensated gas density gauge with low-pressure alarm contact and low-pressure lockout contact
 - 3. Trip-close pistol grip switch
 - 4. Close coil
 - 5. Dual trip coils
 - 6. Anti-pump relay
 - 7. Local-remote selector switch
 - 8. A minimum of 10 spare non-adjustable auxiliary switch contacts factory set as 5 normally open (NO) and 5 normally closed (NC) contacts
 - 9. Thermostatically controlled cabinet heater
 - 10. Molded case circuit breakers for protection of motor circuit, control circuit, and heater circuit
 - 11. Spring charged-discharged indicator
 - 12. Manual closing spring charging handle
 - 13. Open-Close position indicator
 - 14. Position indicating lights (green=open, red=closed)
 - 15. Manual trip lever
 - 16. Operations counter
 - 17. 120 VAC cabinet light with door actuated switch
 - 18. View window in cabinet door
 - 19. 120 VAC duplex receptacle with GFCI

20. Hinged cabinet door with 3 point latch, open position door stop, and padlocking provisions

5.0 TERMINAL AND GROUND PADS

- 5.01 Terminal pads shall be smooth aluminum material with 4-hole NEMA drilling pattern for use with purchaser furnished terminal connectors. The terminal pads shall be reversible for mounting at the top, bottom, or either side of the interrupter.
- 5.02 Two NEMA 2 hole ground pads shall be supplied for grounding the structure to the station ground grid.
- 5.03 Terminal one or two-hole connection provision shall be made along the bottom of the mechanism housing for grounding of the mechanism housing's ground-wire to the ground pad.

6.0 SUPPORT STRUCTURES

- 6.01 The CS shall be provided with a manufacturer furnished base frame which houses the gas piping for the three support/interrupter insulators which form the gas system while also housing the inter-pole linkage that connects the three interrupters to the spring operating mechanism. Phase spacing shall be 48".
- 6.02 The CS shall also be supplied with all support structures.
- 6.03 All support structure shall be equipped with one or two-hole ground terminals for busing the ground wire from the upper mechanism housing and structures to the grounding pads.

7.0 WIRING

- 7.01 All control wiring shall be point-to-point and initiate and end on either equipment or terminal blocks; splices and tees are not acceptable
- 7.02 Wiring shall be neatly bundled and clearly identified with permanently affixed markers.
- 7.03 All control wiring shall be stranded copper minimum 14AWG. All equipment wiring shall be sized per NFPA 70.

8.0 TESTING

CS shall be fully tested at the factory per ANSI C37.09 section 5 prior to shipping to the destination. Test results shall be emailed in PDF to the Owner prior to shipping. The following battery of tests shall be performed:

1. Contact and terminal-to-terminal test on both CS and integral switch
2. Interrupter and Control wiring Dielectric test
3. Operating mechanist test (minimum 50 operations)
4. Trip and Close Contact Timing Test
5. Insulation dielectric test

9.0 DRAWINGS AND DOCUMENTATIONS

- 9.01 The manufacturer shall furnish approval drawings in PDF format via e-mail to the Owner (or Owner's designated representative) prior to initiating the manufacturing of the product. The purchase order will designate the name and e-mail address of the individual where the drawings should be forwarded. If there are no comments to the approval drawings purchaser will respond via e-mail that drawings are approved as submitted with no changes. If comments are required then one copy of the

drawings will be returned to the manufacturer within 10 days from the date of transmittal marked "approved with comments as noted".

- 9.02 The manufacturer shall furnish final drawings in AutoCAD format via e-mail to the owner (or Owner's designated representative) prior to shipping the CS.
- 9.03 The manufacturer shall furnish two hard-copies of complete set of final drawings and each applicable instruction book shall be shipped in a weatherproof envelope with each CS. In addition, electronic copies of all applicable manuals in PDF shall be sent via e-mail to the Owner (or Owner's designated representative).

10.0 SHIPMENT OF CIRCUIT SWITCHER

- 10.01 The circuit switcher shall be match-marked and disassembled as necessary to accommodate shipping dimensional clearance restrictions. Each interrupter shall be shipped with a positive pressure of 5–10 psi of SF6, eliminating the need to pull a vacuum on the interrupters in the field. An SF6 fill kit shall be provided to fill the interrupters to rated pressure during installation.
- 10.02 Shipment shall be FOB point of delivery substation at 111 East Bay St, Wauchula, FL 33873.
- 10.03 Manufacturer shall give to Owner two weeks written notice of expected time of arrival of equipment with confirmation by telephone call to Chris Collier, City of Wauchula's Electrical Supervisor, 863-781-5584, at least 24 hours prior to arrival of equipment. Delivery of the transformer shall be arranged for regular non-holiday work days Mon-Thurs 7AM to 2PM, EST, delivery.

11.0 WARRANTIES

- 11.01 The circuit switcher to be provided herein per this specification shall include a full five (5) year warranty on the completely assembled, in service CS together with all parts.
- 11.02 This warranty shall extend for five (5) years from the date of energization [or sixty-six (66) months from delivery]. A deduct may be offered for the utilization of manufacturer's standard eighteen (18)-month or three (3) year warranty in lieu of the five (5) year warranty. However, any base bid not including at least a full five (5) year warranty shall be considered less responsive.