TECHNICAL SPECIFICATION

POLE MOUNTED THREE-PHASE REMOTE OPERATED SWITCH WITH VACUUM INTERRUPTERS

SWE ITEM ID: SWE RC 001 / SWE RC 002 / SWE RC 003

1. GENERAL

1.1. This specification applies to all radio (SCADA) controllable distribution sectionalizing switches.

1.2. Life test shall include 10,000 mechanical operations without degradation.

2. STANDARDS

2.1. Must comply with applicable provisions of the latest NEMA, IEEE, ANSI/IEEE, and IEC standards relating to reclosers. Applicable standards include, but are not limited to, the following:

2.1.1. ANSI/IEEE C37.60-2003 American National Standards Requirements for Overhead, pad-mounted, dry vault, and submersible automatic circuit reclosers and fault interrupters for alternating current systems up to 38kV

2.1.2. IEC 62217 – Salt Spray Test

2.1.3. Manufacturing Facility must be ISO 9001:2008 certified

3. ELECTRICAL REQUIREMENTS – SWERC001, SWERC003

3.1. Nominal Voltage 38kV

3.2. Rated Maximum Voltage: 35kV

3.3. Basic Impulse Insulation Level: 150kV minimum

3.4. Continuous Current Rating: 800 Amperes RMS Symmetrical

3.5. Interrupting Current Rating: 12.5kA Amperes RMS Symmetrical

3.6. Dry Withstand, 60 Hz, 1 minute: 70kV

3.7. Wet Withstand, 60 Hz, 10 second: 60kV

3.8. Shall include three (3) Internal Current sensors with +/- 1% accuracy

3.9. Shall include three (3) Internal Voltage sensors with +/- 3% Accuracy

3.10. SWERC003 – Shall also include three (3) external Voltage sensors for use in Distributed Generation (DG) applications.

4. PHYSICAL REQUIREMENTS – SWERC001, SWERC003

4.1. General: To be used on three (3) phase multi grounded wye 26.4kV system

4.2. Solid Dielectric Insulation: Insulation medium shall be shatter resistant outdoor Bisphenol-A (BPA) Epoxy, Hydrophobic Cycloaliphatic Epoxy (HCEP), EPDM/Silicon Rubber, or equivalent. Bushings sheds shall be resistant to impact, ozone tracking and Ultra Violet (UV) light.

4.3. Mounting Bracket:

4.3.1. Bracket shall be stainless steel or heavy duty aluminum and have a grounding provision located near the pole side

4.3.2. Bracket shall be a dual arm rigid structure

4.3.3. Bracket shall include lifting lugs in accordance with IEEE C37.60

4.3.4. Bracket shall be alley-arm polemount frame

4.4. Vacuum Interrupters: Current interruption shall occur in vacuum interrupters, providing minimum and even contact wear, long life, and maximum reliability.

4.5. Operations: Each switch shall be designed for 10,000 mechanical or loadbreak open/close operations.

4.6. Close blocking: electrical, and software close blocking shall be active on all three phases when any yellow handle is pulled down. Pulling any yellow handle also opens all three phases.

4.7. Switch shall be equipped with a Red=Closed, Green=Open visual indicator on underside

4.8. Operating temperature range: Operating temperature range shall be -50°C (-58°F) to 55°C (131°F).

4.9. Terminals: Switch terminals are to meet NEMA requirements for an affixed, four hole, tin-plated bronze terminal connectors.

5. CONTROL CABINET – SWERC002

5.1. General: Control box shall be NEMA Type 3R or better and is to have two pad lockable latches.

5.2. Knockouts/Inserts: Control box shall have a quick disconnect and locking sleeve fitted for the control cable; three 1 7/16" knockout; and a female-female coaxial connector with a locking sleeves

5.3. Lower Control Cable: The control shall be supplied with a 40 ft control cable interface from the junction box to the electronic control cabinet.

5.4. GFCI receptacle: A fused ground fault circuit interrupting receptacle shall be provided.

5.5. Mounting channel: A mounting channel made of galvanized steel shall be shipped with the control box. The control box shall be drilled to fit the channel. Hardware to mount the control box to the channel shall be provided by the manufacturer.

5.6. Radio Hardware mounting fitting and power accommodations shall be provided for MDS 9810 and Landis& Gyr Gridstream units

5.7. User interface shall:

5.7.1. Include hard buttons, Open and Close

5.7.2. LED indications shall include the following:

a. Voltage per phase

b. Switch open/closed

c. AC power alarm

d. Remote Supervision or Local Control

5.7.3. LCD Display

a. Voltage Display

b. Current Display

c. Power Display

5.7.4. Executable software shall be:

a. Included in each shipment

b. Editable by selection

c. Upgradeable by RS-232 port

5.8. Events to be recorded shall include:

5.8.1. Switch Status (open/closed)

5.8.2. Supervisory status (on/off)

5.8.3. Voltage present per phase

5.8.4. Operation failure

5.8.5. No AC power

5.8.6. Battery test

6. DRAWING SUBMITTAL

Bidders shall be required to submit two complete sets of shop drawings showing all details of the high voltage unit and the low voltage control box a minimum of two weeks before bid opening. One set will be returned to the vendor with approval and/or comments. If drawings and catalog information are not submitted, bid will not be evaluated. The JEA shall not be liable for switches manufactured in accordance with unapproved shop drawings.

7. PACKAGING

7.1. The high voltage unit (item SWE RC 001) shall be packaged in a wooden crate for material protection and outside storage requirements. All crates shall have a minimum ground clearance of two and one-half (2-1/2) inches.

7.2. The low voltage unit (item SWE RC 002) shall include the control box and control cable. It should be packaged separately from the high voltage unit.

7.3. The high voltage unit with six (6) internal voltage sensors (item SWE RC 003) shall be packaged in a wooden crate for material protection and outside storage requirements. All crates shall have a minimum ground clearance of two and one-half (2-1/2) inches.

8. NAMEPLATE

Shall be provided with voltage class, BIL rating, continuous current rating, momentary current rating and date of manufacture.

9. SECTIONALIZING

Sectionalizing shall be defined as the ability to count over current faults at definable amperage followed by a loss of voltage, and a definable number of occurrences, and break the load current when the set parameters have been met.

JEA Item ID w/Description:

SWERC001 – SWITCH, RADIO-CONTROLLED, THREE PHASE, 38KV, 12.5KA. WITH THREE (3) INTERNAL VOLTAGE SENSORS. TO BE USED IN COMBINATIONS WITH SWITCH CONTROL BOX (SWERC002). MOUNTING BRACKET SHALL BE AN ALLEY-ARM POLE MOUNT FRAME.

SWERC002 – CONTROL, TO BE USED WITH RADIO-CONTROLLED SWITCH (SWERC001). INCLUDES CONTROL CABINET, 40' CONTROL CABLE, MOUNTING CHANNEL, TWO KNOCKOUTS FOR 1" FLEX 90. COAXIAL POLYPHASOR, LOCKING SLEEVE FOR CONTROL CABLE AND COAXIAL. PURCHASE AS SET.

SWERC003 – SWITCH, RADIO-CONTROLLED, THREE PHASE, 38KV, 12.5KA. WITH SIX (6) INTERNAL VOLTAGE SENSORS. TO BE USED IN COMBINATIONS WITH SWITCH CONTROL BOX (SWERC002). MOUNTING BRACKET SHALL BE AN ALLEY-ARM POLE MOUNT FRAME.