6-09-192 - Customer Reference Specification - 12kV 3-Phase Service Interrupter Switch on Customer-Owned Pole (Overhead Supply to Underground)

Overhead Supply to Underground

Replaces LA-17251

THIS CUSTOMER REFERENCE SPECIFICATION (CRS) IS PART OF THE RULES FOR ELECTRIC METER AND SERVICE INSTALLATION (REMSI) WEBSITE.

This specification defines the customer's responsibilities and requirements necessary for 12 KV 3 phase service, overhead supply to underground. All details of this specification must be strictly followed.

The pole location and equipment installation must be approved by the PPL Supervisor - Commercial & Industrial Metering Services and PPL Design Supervisor. Any deviation from this specification must be approved. Unapproved deviations are usually costly for the customer to correct and can result in delays or possible refusal to connect service.

Refer to CRS 6-09-199 for Service Termination and Metering Compartments in Customer Owned Switchgear.

Notes:

1. All facilities, except source side deadend assemblies and lightning arresters, are provided, installed, and maintained by customer. PPL makes connections to source side of switch and all connections to the system neutral. Customer must make all grounding connections using compression connectors, and all primary connections using cable-to-flat or stem connectors as appropriate.

2. Customer must install and maintain guy designed to hold deadend load of PPL conductors. The maximum tension in each conductor is 2000 pounds.

3. Conduit(s) for primary cable may approach from any direction, but cable riser must be attached to pole in position shown.

4. The customer should install underground conduit(s) by one of the below methods. A spare conduit is recommended, but optional.

    a. Use 4 or 5 inch hot-dipped galvanized steel conduits (rigid or intermediate grade) directly buried in the earth. All threaded couplings should be tightly joined using plumbers teflon tape or similar joint compound designed to stop water leaks. All bends must be at least 36-inch radius. All steel conduits must have grounding bushings at the switchgear and terminal pole.

    b. Use 4 or 5 inch type EB or DB PVC conduit encased in a concrete envelope as specified in PPL drawing A-168735. All joints should be tightly sealed using the appropriate contact cement or joint compound. All 90° bends must be hot-dipped galvanized steel (rigid or intermediate grade) with at least 36 inch radius. Concrete must also encase steel bends to prevent breakage at steel-to-plastic adaptors resulting from cable pulling tensions.

    After installation, the contractor should clean debris from the conduits. Temporarily plug conduits to keep them clean and dry.

5. Conduit riser should fit snug against pole. Riser can be hot-dipped galvanized steel or schedule 80 PVC. Attach riser to pole using two-hole pipe straps at 5-foot intervals. Both the cable riser conduit and spare should be watersealed.

6. Ground wire from switch base to ground rod must be minimum #2 copper or have the same ampacity as the source side conductors at switch.

7. Customer must install at least one lightning arrester per cable terminator. For maximum lightning protection, two arresters per terminator are recommended.

8. Coil approximately 7 feet of the #2/0 copper ground wire under platform and connect at two points. The platform should be chained to prevent removal.

9. Point of Contact (POC) is contained in the PPL EU document "Point of Contact Requirements for High Voltage Customer-Owned Facilities 12kV Supply."

10. Switch handle is to have provision for 2 locks (customer lock & PPL EU lock) so that either customer or PPL EU may operate switch independently.

11. Customer Main Switch shall meet the following criteria:
    a. Incorporate a three-pole, gang-operated loadbreak design
    b. Rated for minimum 14.4kV
    c. Minimum 110 kV BIL
    d. Minimum 600A continuous and interrupting current
    e. Have a visual break when switch is in the open position
    f. Operable from ground level. Operating handle should be 42" from ground level
    g. Fuses holder and fuses are not required

Item	Qty.	Bill of Material	CID No. or Drawing No.
Material Installed by PPL			
1	3	Deadend assembly, 12 KV	6-13-18
	*	Ft wire, #2 Cu (minimum) SD solid, bare, with connectors as required	147476
2	1	Deadend assembly, neutral	6-13-18
3	3	Bracket, crossarm mounting	139506
	3	Arrester, lightning	139110
	3	Connector, compression	6-12-11
	*	Ft wire, #6 Cu, bare	147474
	3	Connector, hot line, aluminum, #6 - #4/0	1021522
		Connector, hot line, aluminum, #2-556 kcmil	912529
Material Supplied by Customer			
4	1	Pole, (class 3 minimum) length as specified (40' minimum)	
5	1	Double Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	3	Bolt, double arming, 5/8" x length to suit, galvanized	
	10	Washer, 2-1/4" square for 5/8" bolt	
6	1	Crossarm, wood, 3-1/2" x 4-1/2" x 8' long	
	1	Bolt, 5/8" x length to suit, galvanized	
	2	Washer, 2-1/4" square for 5/8" bolt	
	1	Gain, pole	

* As required

Item	Qty.	Bill of Material	CID No. or Drawing No.
		Material Supplied by Customer	
7	16	Brace, crossarm, flat, 28” long	
	8	Screw, lag, 1/2” x 4” long, galvanized	
	8	Bolt, carriage, 3/8” x 5” long, galvanized	
8	*	Bracket, for lightning arrester	(Note 7)
	*	Arrester, lightning, for 12 KV, 4 wire system	
	3	Bracket, for outdoor cable terminator	
	3	Terminator, cable, 15 KV, outdoor	
9	*	Ft wire, #2 Cu (minimum), & connectors as required	
10	1	Rod, ground, 1/2” diameter x 8’ long, copper clad steel	
11	*	Ft wire, #6 Cu, bare and connectors as required	
12	*	Ft wire, #2 Cu (minimum), HDPE or bare with molding	(Note 6)
13	*	Ft wire, #2/0 Cu, bare & connectors as required	
14	3	Grip, cable supporting	
	1	Bushing, grounding, size to suit conduit	
15	1	Cap, conduit	
16	*	Conduit, 4” or 5”, cable riser	(Note 4)
	*	Straps, conduit, with screw lags	
17	*	Bend, 90°, 4” or 5”, steel, galvanized	(Note 4)
18	1	Guy, 1/2” H.S. steel, 7 strand, with attachment hardware	(Note 2)
19	1	Customer Main Switch	(Note 11)
20	1	Grounded platform, 3’ x 5’	LB-12669

* As required