RULE 9

RULE 9 - HIGH VOLTAGE UNDERGROUND PRIMARY FROM OVERHEAD-SECONDARY VOLTAGE SERVICE

a. At Customer's Request:

When a customer requests service at secondary voltage but desires PPL EU to install the transformer(s) in the vicinity of the customer's building with PPL EU's high voltage service line installed underground, PPL EU will provide this type of service under the terms and conditions specified below.

b. Type Equipment Used:

PPL EU uses several types of transformers for this service depending on the service characteristics, location, construction method used, and availability:

CHARACTERISTICS	KVA TRANSFORMER CAPACITY		TYPE OF TRANSFORMER	TYPE OF HOUSING
	MIN.	MAX.		
Single Phase, 3 Wire, 120/240 V.	25	167	Low-Profile Pad-Mount*	Foundation by PPL EU
Three Phase, 4 Wire, 208Y/120 V. **	30	1500	Banked Single Phase Distribution	Vault or above ground walk-in enclosure by Customer
	75	1000	Three Phase Pad-Mount*	Pre-cast concrete foundation by Customer
Three Phase, 4 Wire, 480Y/277 V.	150	2500	Banked Single Phase Distribution *	Vault or above ground walk-in enclosure by Customer
	150	2500	Three Phase Pad-Mount*	Pre-cast concrete foundation by Customer
Three Phase, 4 Wire, 120/240 V. **	30	1500	Banked Single Phase Distribution	Vault or above ground walk-in enclosure by Customer
	50	300	Banked Single Phase Pad-Mount Units*	Foundations by PPL EU
Three Phase, 3 Wire, 480 V.	75	2500	Banked Single Phase Distribution	Vault or above ground walk-in enclosure by Customer

*** This type service is only available when a 7.2 kV or 12.47 kV circuit is available for supply.**

**** When three phases are available and the customer requesting 120/240 V, PPL EU encourages consideration of 120/208 V.**

c. <u>Equipment Furnished by PPL EU:</u>

PPL EU furnishes, installs and maintains all electrical facilities which are:

(1) A terminal pole generally on the customer's premises at a location where clearance for the overhead wires can be provided in accordance with the National Electrical Safety Code (NESC) or any other applicable code.

(2) Line disconnecting and protective equipment and the conduit riser and cable on terminal pole.

(3) Underground cable between terminal pole and transformers.

(4) Transformers, associated wiring and equipment.

(5) The underground service lateral cables from the transformer to the point of service in or on the customer's building when sub-surface or pad-mount transformer is installed.

(6) **Note: NOT FOR NEW CONSTRUCTION** - The connections between the transformer secondary terminals and customer's service entrance conductors when distribution type transformers are installed in a vault within a building.

d. Facilities Furnished by Customer:

The customer agrees:

(1) To pay PPL EU its estimated cost of installing electrical facilities in excess of the cost of normal construction, plus any excess right-of-way or permit fees incurred by PPL EU.

(2) To furnish and install, under PPL EU's plans and specifications, subject to PPL EU's inspection, all mechanical facilities consisting of underground conduits when specified, protective barriers when specified, and either a transformer vault for distribution transformers, or a concrete foundation when a three phase, pad-mount transformer is to be installed.

Customer is responsible for piercing and sealing the wall where conduits enter the building.

(3) Upon completion of construction, ownership of all physical facilities installed by customer to the line side of the point of service, and not located in, on or under buildings shall vest in PPL EU, free-of-charge, and PPL EU will thereafter maintain these facilities at no cost to customer.

Customer grants to PPL EU by perpetual easement, without charge, the right of ingress and egress and the sole right to use these mechanical facilities.

e. Selecting Location for Transformers (Access):

The customer and PPL EU choose the location of the vault or transformer foundation to permit free access to a suitable driveway or other area for use by PPL EU's mobile crane to install, replace or remove transformers and where future additions to the building will not block the access.

f. Selecting Location for Three Phase Pad Mount Transformers Foundation:

PPL EU normally installs pad-mount transformers on a foundation installed by the customer at ground level. Pad-mount transformers will not be installed in vaults within a building.

Sketch #40 shows a foundation for a typical pad-mount transformer installation.

See also:

a.) **CRS 6-17-122** Three Phase Pad Mounted Transformer Installations 75 kVa to 2500 kVa Capacity, and

b.) **CRS 6-19-100**, Customer Low Voltage Switchboards Service Cable Terminal Compartment Arrangements and Clearances

g. Selecting Location for Overhead Transformers In Vault - NOT FOR NEW CONSTRUCTION:

Where existing, PPL EU installs standard overhead distribution transformers in a customer-owned vault within the building. If the vault is below grade either inside or outside of the building and when PPL EU determines that the physical conditions require the installation of submersible transformers and associated equipment, the additional cost of such submersible equipment over standard overhead distribution facilities will be paid to PPL EU by the customer.

See:

a.) **CRS 6-09-198**, 12 kV 3 Phase Service Instrument Transformer Arrangement in Customer-Owned Transformer Vault or enclosure Underground Supply

b.) **CRS 6-17-163** Customer Installed Transformer Vault: Vault Arrangement and Grounding Details 30 KVA to 2500 KVA Capacity

h. Customer Responsibility Regarding Location for Transformers:

The customer is solely responsible for meeting the code requirements regarding the location of the transformer installation in relation to combustible materials, buildings, fire escapes, and door or wall openings. Whenever fire resistant barriers, enclosures or other safeguards are required by any authority having jurisdiction, such safeguards are installed, owned, and maintained entirely by the customer at customer's expense.

See **CRS 6-17-122** for more information.

i. Lighting, Drains, Ventilation and Lock for Door Into Vaults - NOT FOR NEW CONSTRUCTION:

Where existing, PPL EU installs distribution transformers in customer-owned vault, the customer furnishes, installs, and maintains the lighting system, proper drains and screened ventilated openings in the vault and the door(s) equipped either with a single access hasp suitable for PPL EU's padlock with a 3/8 inch shackle. PPL EU shall have sole access to and use of the transformer vault. **Sketch #38** shows a typical transformer vault installation.

j. Point of Service:

The point of service depends on the type and location of the transformer installation:

(1) When PPL EU installs underground service laterals from transformers located in an above or below ground enclosure or vault, the customer runs the service entrance conductors into the enclosure and the point of service is where PPL EU connects its leads to the customer's service entrance conductors, usually a bus duct service entrance.

(2) When PPL EU installs underground service laterals from single or three phase pad mounted transformers, the point of service is where PPL EU connects its service laterals to the customer's service entrance equipment.

See **CRS 6-19-100** and **Sketch #7**

k. Service Laterals:

PPL EU generally provides only one service lateral to one premises. However, where PPL EU determines that multiple service laterals are required by the customer's capacity requirements, PPL EU designates the locations of the multiple service laterals.

l. Location of Meters:

PPL EU furnishes and the customer installs the metering transformers and meter panel at the location and in the manner designated by PPL EU.

The meter panel and meter shall not be located in a vault or on customer's switchgear.

m. Service Lateral Cables Terminating in Cubicles:

When service lateral cables terminate in a cubicle containing instrument transformers, the line side terminal connectors provided by the customer shall be arranged to provide a 48 inch minimum working space height from the service lateral conduit bushings to the bus terminals as required by **Rule 15 (f)**. This space shall be free of bus work, braces or other obstructions, and arrangement of switchgear shall permit free access for arranging, terminating and maintaining the service lateral cables.

The customer provides service lateral connectors of tinned aluminum suitable for terminating 750 kcmil aluminum conductors. Plated copper or bronze connectors are not acceptable.

n. Terminating Customer's Service Entrance Conductors In A Vault - NOT FOR NEW INSTALLATIONS:

Where existing, service is provided from transformers located in a vault in a building, the instrument transformers and their mounting may be installed in the vault and be the terminal point for the customer's service entrance cables.

PPL EU will provide its standard current transformer mounting when the service entrance consists of not more than 5 - 750 kcmil aluminum or 5 - 500 kcmil copper conductors per phase.