

NETWORK SERVICES - DOWNTOWN OMAHA AREA ONLY

12.01 GENERAL

The downtown Omaha network is generally 120/208 volts. In some instances, there are 277/480volt spot networks. For service to buildings adjacent to the existing network, OPPD will serve the building from those existing network facilities. Where an extension to OPPD's distribution is required, the customer will be served from a padmounted transformer fed from a padmounted switchgear; both situated on the customer's property.

Where an addition must be made to OPPD's facilities, and the customer can not provide sufficient ground space for a padmounted switch and a padmounted transformer on his property, he can expect to build concrete vaults with sump pumps, an oil retention system and drain to the sewer. The customer must provide 120 volts into the vault for the sump pump, lights, and weatherproof outlets in each vault unit. OPPD will specify the width, depth, height, and the number of units. The customer must design and build the vaults, and provide and maintain the sump pumps. OPPD will provide, and the customer will install the door and vent gratings. OPPD will provide and install the access ladders.

In all cases the customer installs, owns and maintains the service entrance conduit(s) from the property line, through the building wall, into the first metering point, main switch or switchgear busbar. OPPD extends the customer installed conduit(s) into a vault, manhole, or service box. The location of metering equipment, and the location and number of conduits required, will be determined by OPPD, based on the location of network facilities and customer requirements.

If the customer uses cable trays they must be extended into the vault as specified by OPPD in the meter specification issued for that particular project. This is to prevent any interference with OPPD's cable or equipment installed in the vault. OPPD will then install the service conductors, and connect the service conductors through limiters. After OPPD has installed the service conductors in the customer's cable tray, the customer shall re-install the cable tray top.

If bus duct is required by the customer, it must be extended by the customer into the vault, where OPPD will provide service conductors and connect the bus duct to the service conductors

Line gutters, if used, will be of a type that is sealable by OPPD. Any taps made by the customer in the line gutter must be approved by OPPD for size, location, and number.

Instrument transformers shall be installed in an approved side-hinged sealable cabinet furnished, installed, and maintained by the customer. The installation of instrument transformers in manufactured switchgear will be approved by OPPD,

OPPD, only when the manufacturer provides adequate segregated and accessible space and proper mounting and connection facilities for the instrument transformers. Segregated space is also required for the service entrance conductors. Approval from OPPD's Manager of Metering Services shall be obtained before purchase of the switchgear.

A conduit of at least 1" minimum size having no more than two bends shall be installed between the instrument transformer cabinet and the meter test cabinet or socket. Meters shall be located as close as practical to the current transformer cabinet.

When instrument transformer socket-type metering is used, the center of the meter should be between 2'-6" and 5'-6" above the floor or substantial standing surface. Minimum working clearances as required by NEC 110.26 shall be provided and maintained by the customer at all times. OPPD requires a minimum of 8 inches of side clearance on all metering equipment. OPPD's meters shall not be located on manufactured switchgear. Nameplates on the instrument transformers must be in readable locations. Metering instrument transformers are the property of OPPD and shall not be altered in any manner. Upon removal, the Contractor will return all instrument transformers to the Metering Services Department.

12.02 SERVICE ENTRANCE CONDUCTORS.

Service entrance conductors will be installed by OPPD from the network secondary to the customer's first metering point, main switch, or busbar. OPPD will provide service conductors up to 15 feet in length into the customer's building.

Lugs

The customer shall provide for the attachment of connector lugs. The number of connections and type will be specified by OPPD in the metering specification. OPPD will furnish the necessary connector lugs, or limiter lugs, install them, and make final connections.

When more than one set of service conductors is used, or service conductors are 500 kCMIL or 750 kCMIL, OPPD installs cable limiters. Refer to drawings 12.02.1 and 12.02.2 for minimum limiter requirements.

12.03 TEMPORARY OR UNMETERED SERVICES

Unmetered services for government entities, such as for traffic signals, energy-only street lights, bus shelters, as well as metered temporary service such as for construction or short duration festival service, will have the service conductors installed by the customer to OPPD facilities designated on the meter specification. The customer is to coil sufficient conductor for OPPD to extend into the vault, manhole or service box and make connection to the network.

12.04 IDENTIFICATION OF CONDUCTORS

When the customer provides the service conductors, he is to use tape; spiral wrapped a minimum of 3", to identify the phase conductors per the following colors:

- 120/208V, 3Ph, 4W: Black, Red, and Blue; or Red, Yellow, and Blue
- 277/480V, 3Ph, 4W: Brown, Orange, and Yellow; Brown, Orange, and Purple

An alternate acceptable marking method would be:

- 1 band of colored tape at each end for A phase
- 2 bands of colored tape at each end for B phase
- 3 bands of colored tape at each end for C phase

If the neutral or grounded conductor of a service entrance (480 volts and under) is insulated, it shall be identified by white insulation, gray insulation, white tape or gray tape.

The use of paint to identify insulated conductors is not acceptable identification, due to the impermanence of this method.

12.05 SEPARATION OF SERVICE CONDUCTORS FROM OTHER CONDUCTORS

No metered circuit wire shall be enclosed with an unmetered circuit wire in the same raceway or cable, except as may be necessary in meter equipment assemblies.

12.06 REHAB OF EXISTING BUILDINGS

In the downtown area served by the network, some existing buildings with a single CT meter may be rehabed into multiple dwelling units. Coordination with, and approval by OPPD should be obtained prior to any construction during the design phase of the project. Where OPPD's existing service cables are

are adequate, and are to remain in place as is, and the customer wishes to install new multi-position metering downstream of the old CT cabinet, it is the customer's responsibility to provide new conductors between the old CT cabinet and the new metering. It is also the customer's responsibility to remove the existing CT's from the existing cabinet, and to provide adequate, suitable connectors and support to enable OPPD to make connections of the customer's new conductors to OPPD's existing service cables in the former CT cabinet. The customer should also make provisions for locking and sealing, by OPPD, of this former CT cabinet.

Where existing buildings have existing lead-covered cables racked in the open on building interior walls, the customer must provide conduits, or a gutter-type raceway for these cables, between the service entrance duct wall penetration into the building, and the existing, or new CT cabinets, or meter sockets.