

4.15 STAND-BY GENERATOR SERVICE

The generator and all wiring installations connecting the generator to the Customer's wiring shall be installed in accordance with the NEC. The Customer assumes full responsibility for the installation and safe operation of the generator. The Company reserves the right to discontinue service to the Customer, without notice, any time it is discovered that the generator is improperly connected to the Customer's circuits or is otherwise unsafe.

4.16 TRANSFORMER VAULTS

When conditions are such that it is necessary to install transformers within a building on the Customer's premises, the Customer will provide a suitable vault to house the transformers and accessories.

Customers shall secure vault specifications from the Company and consult the Company regarding the location and construction of transformer vaults while building plans are being prepared.

Vaults or rooms shall be so located as to be easily accessible by direct entry from outside the building, for the purpose of installation, maintenance and removal of Company equipment. Vaults shall be of standard fireproof construction, be adequately ventilated and drained. Customer shall provide and install oil containment in vaults where oil-filled Company equipment will be located. Vaults shall comply with the NEC and any applicable codes.

Transformer vaults shall contain only the transformers and their auxiliary equipment. The Customer's secondary fuses, switches, circuit breakers and the Company's meters shall not be installed in the transformer vault. The Company requires, out of consideration for the safety of all concerned, that it be notified and give its permission to a Customer or agent to perform work on the Customer's facilities which are included in the vault (see Sections 8.02 and 8.06).

The Company reserves the right to serve other Customers from the Company's equipment located in vaults on the Customer's premises, provided this does not interfere with the Customer's service.

5.0 OVERHEAD SERVICE REQUIREMENTS (600 VOLTS OR LESS)

5.01 GENERAL

Customers desiring overhead service shall contact the Company, prior to the start of construction, to obtain the point of service drop attachment at the Customer's building or other support, type of metering facilities to be used, cost and other information relative to this type of service.

The Company will provide overhead electrical service in accordance with the state regulatory agency requirements for overhead extension or, in the absence of such requirements, in accordance with the Company's electric service Tariff. The Company shall **not** be required to provide rear-lot construction to any Customer. The Company shall provide service from facilities located along public roadways that the Company has a legal right to occupy or on public lands and private property across which satisfactory rights-of-way or easements may be obtained.

If the Company requests, the Customer shall furnish the Company, at no charge, property plats, utility plans, grading plans, roadway profiles, load requirements and other items showing details of proposed construction in a reasonable time to allow the Company to engineer, design, acquire materials and construct its facilities in a safe, efficient manner.

MARYLAND ONLY: The Maryland Public Service Commission generally requires extension of service to new buildings for residential, commercial and industrial occupancy to be made underground. However, where the Commission permits overhead construction, provisions of this section will apply.

5.02 SERVICE DROP

The Company shall provide, install, own and maintain the service drop conductors from the overhead distribution system to the point of attachment to the Customer's overhead service entrance (125 feet maximum).

The Company will furnish and the Customer will install the service bracket necessary for the attachment of the Company's service drop conductors. In cases where a service mast is required, only power service drop conductors shall be attached to the service mast.

The Customer shall provide and maintain a safe, substantial support for the Company's overhead service connections. In no case will the Company be responsible for the condition of any Customer's building or structure to which service conductors are attached, unless caused by an unreasonable practice of the Company. Cinder blocks, stucco, veneered and similar type walls usually require Company approved anchor bolts, or other acceptable means of support for

termination of the service drop. Parapet walls and chimneys are not acceptable supports. The Company reserves the right to approve or deny alternate support designs.

The service drop will not cross over property other than that of the Customer to be served unless the Company has obtained or received written consent from the owner of such property.

The service drop should not be installed over buildings or swimming pools. If the service drop must be installed over buildings, NESC clearances shall be maintained. Refer to Section 4.07 for required swimming pool clearances. Trees should not be planted under service drop conductors.

The Company shall not be required to furnish or install more than one service drop for each building served. However, exceptions to this rule will be made if Company approval is obtained prior to proceeding with any work and any of the following conditions are met:

- (a) Where required for types of service of different phase or voltage.
- (b) Where required by law.
- (c) Where required for fire pumps or emergency lighting or public safety regulations.
- (d) Where a single property extends over an area that makes it impractical to serve through one service drop.
- (e) Where the Company needs more than one service drop to supply the Customer's load requirements.
- (f) Where multi-occupancy buildings have no common locations for service equipment that is accessible to all occupants.

5.03 SERVICE ENTRANCE

The Customer shall provide, install, own and maintain the complete service entrance when supplied from an overhead service drop, including meter socket*. In addition, the Customer shall supply, install, own and maintain all material located on the load side of the service entrance disconnect.

* **WEST VIRGINIA ONLY:** The Company shall supply and the Customer shall install the required meter socket (see Section 9.02).

Where required, all transformer-operated metering enclosures (including current and voltage transformers) shall be pre-wired and furnished by the Company and installed by the Customer (see Section 8.06). For remote metering communications requirements, see section 8.08.

The service entrance conductors shall be of sufficient ampacity to meet the requirements of the NEC and any other applicable codes. The service entrance conductors shall not be spliced. Unmetered service entrance cables or service entrance conduits on buildings, poles or structures shall not be concealed or recessed.

The Customer's service entrance shall have a minimum of two driven ground rods (8 feet minimum length) at least six (6) feet apart. The grounding electrode conductor shall be continuous from the service entrance main disconnect to both driven ground rods. The Customer shall install the service entrance in such a manner to insure that all of the grounding/ bonding requirements of the NEC are met or exceeded.

5.04 CONNECTIONS BETWEEN COMPANY'S AND CUSTOMER'S FACILITIES

The connections between the Company's and the Customer's facilities shall be made only by authorized employees of the Company. The Customer's installation shall be completed and any required inspections obtained prior to the Company installing its facilities (see Section 4.06).

The Customer will be responsible for connecting all service entrance conductors to any form of Customer-owned disconnecting devices or equipment. In cases involving large service drops, or parallel services, the Company will advise the Customer sufficiently in advance of the time when service is required concerning the number, size and type of the Company's conductor(s). The Customer will also be responsible for insuring that the main disconnect or terminal box has the proper number and size of terminals and that the connected loads are balanced among phases and sets of conductors.

The Company will be responsible for making all connections to the Company's power transformers or metering transformers, regardless of whether involved conductors are Company or Customer-owned. The Company will provide connectors, and make the connections between the Customer's service entrance conductors and the Company's service drop conductors. This will be at a point designated by the Company when the Customer's service entrance conductors are 750 kcmil or smaller and not more than one entrance cable or set of conductors per Customer. If the service entrance conductors are larger than 750 kcmil, the Customer furnishes Company-approved connectors. The Customer shall provide sufficient length of conductor for Company to make required bends and connections.

When the Customer's load necessitates parallel service entrance conductors, the Customer shall furnish and install suitable equipment to allow the Company to connect the service drop with a single set of attachments (see Figures 10 & 45).

5.05 PERMANENT OVERHEAD SERVICE INSTALLATIONS

A typical permanent overhead service installation is shown in Figure 3. The service drop support provided by the Customer shall be installed in such a manner to maintain the clearances specified in Figure 1. If the Customer's building is not of sufficient height to provide for the clearances required, the Customer shall provide a support for attaching the Company's service drop similar to that shown in Figure 6a.

5.06 TEMPORARY OVERHEAD SERVICE INSTALLATIONS

A typical temporary overhead service installation is shown in Figure 4. The service drop support provided by the Customer shall be installed in such a manner to maintain the clearances specified in Figure 1. The longest section of conduit shall be used on the top section of the service mast.

5.07 MOBILE/MANUFACTURED HOME OVERHEAD SERVICE INSTALLATIONS

A typical mobile home overhead service installation is shown in Figure 5. The service drop support provided by the Customer shall be installed in such a manner to maintain the clearances specified in Figure 1. Upon Company approval, a combination meter socket/disconnect enclosure may be used for this type of installation.

A manufactured home is considered a mobile home if any of the following conditions exist:

- (a) Located on leased or rented property.
- (b) Located in a trailer park.
- (c) Wheels, axles, and towing mechanisms are not removed when installed.
- (d) If it is not installed on a permanent foundation or foundation that meet the requirements of local building codes. A permanent foundation can be either a perimeter or pier-type with concrete blocks or poured concrete.
- (e) If it does not have a manufacturer's sticker to indicate that the home is manufactured in accordance with government specifications (Part 3280, *Manufactured Home Construction and Safety Standards*, of the Federal Department of Housing and Urban Development).

If none of the above conditions exist, a manufactured home can either have an overhead or underground service entrance and meter socket installed on the outside of the home.

5.08 RECREATION VEHICLE SERVICE INSTALLATIONS

For service to an individual Recreational Vehicle or

Recreational Vehicle park, the applicable requirements should adhere to Part VI, Articles 551.71 through 551.81 of the current addition of the NEC.

5.09 CENTRAL DISTRIBUTION SERVICE INSTALLATIONS (FARM POLE)

A farm or commercial operation with specific load requirements may have service from a Customer-owned central distribution pole to which the Company will extend its overhead secondary service drop. Figure 7a provides the specific details for this type of installation. When the Customer elects to utilize an emergency generator, the Customer's facilities shall be arranged as shown in Figures 7b & 8.

5.10 SMALL NON-RESIDENTIAL SERVICE INSTALLATIONS

For installations such as billboards, lights, signs, bus shelters, phone booths, etc., which only have one or two branch circuits serving the load, NEC Sections 230.42, 230.79, 230.90 and 230.91, including the following, shall apply:

- In general, the rating of the service disconnecting means ("main breaker") shall not be rated less than the load to be carried.
- For a service installation having only one branch circuit, the service disconnecting means shall not be rated at less than 15 amps. The branch circuit breaker also becomes the service's main disconnect and overcurrent protection device.
- For a service installation having no more than two, 2 wire branch circuits, the service disconnecting means shall not be rated at less than 30 amps. In this case, the service's main disconnect will be a separate breaker from the branch circuit breakers, but can be within the same panel or enclosure.
- For all other electrical services on general service rates (non-residential rates), the service disconnecting means shall be at least 60 amps or greater.

The service supplied to non-residential service installations can be 120V, 2-wire or 120/240V, 3-wire. The minimum meter socket size in all cases will be 100 amps, and the service entrance conductors can be sized according to the load served, down to a minimum of #12 AWG copper. All other applicable sections of this document shall apply, including attachment point heights, clearances, grounding, inspection requirements, notifications, Work Request numbers, etc.

5.11 OVERHEAD SERVICES IN EXCESS OF 600 VOLTS

The Customer shall contact the Company if a service voltage in excess of 600 volts is required.

6.0 UNDERGROUND SERVICE REQUIREMENTS

6.01 GENERAL

Customers desiring new underground service or modifications to existing underground service, shall contact the Company prior to the start of construction to obtain the point of service lateral attachment at the Customer's building or other support, type of metering facilities to be used, cost and other information relative to this type of service.

The length, nature and route of an underground service lateral shall be governed by good engineering practices and shall be installed in such a manner that they are free of drainage fields, septic systems, pipes, areas of deep cultivation and other interference. Shrubs and trees should not be planted over the underground service lateral.

The Customer shall obtain all rights-of-way, easements and local, state, and federal governmental agency permits required for service on the Customer's owned or leased property prior to the Company installing its facilities. The Company will obtain all rights-of-way, easements and permits required for service beyond the Customer's property. In those governmental jurisdictions where the Customer is not permitted to perform trenching work under the Company's permit, the Customer shall obtain all permits required to complete the work. The Customer shall be required to clear the service lateral route of trees, tree stumps and other obstructions and prepare rough grade to within six (6) inches of final grade on the Customer's property prior to the Company installing its facilities. If the Customer performs any future modifications, (such as grading, building additions, swimming pools, etc.) that will require the service lateral to be relocated, the Customer shall pay for this relocation.

The Company shall control the initial and subsequent use of the trench and its backfill. At the Company's option, communication utilities such as telephone and CATV, may share the trench. No separation between the Company's cables and telephone or CATV facilities is required by the Company when the cables are installed in conduit. Telephone and CATV companies may have requirements for separation. Joint trench with gas, water or sewer should be avoided unless local conditions or regulations require the use of a shared trench. Gas, water and sewer lines may share the trench provided a twelve (12) inch minimum separation, preferably horizontal, is maintained between the gas, water, sewer and electric lines; however, **greater separation** should be maintained where practical. Local gas, water and sewage companies may require further separation. Customer's private lines are not permitted to be placed in trenches provided for Company use.

The Company will provide underground electrical service in accordance with the state regulatory agency requirements for underground extension or, in the absence of such requirements, in accordance with the Company's electric service Tariff.

The Company shall **not** be required to provide rear-lot construction to any Customer. The Company shall provide service from facilities located along public roadways that the Company has a legal right to occupy or on public lands and private property across which satisfactory rights-of-way or easements may be obtained.

If the Company requests, the Customer shall furnish the Company, at no charge, property plats, utility plans, grading plans, roadway profiles, load requirements and other items showing details of proposed construction in a reasonable time to allow the Company to engineer, design, acquire materials and construct its facilities in a safe efficient manner.

Special requirements are necessary for electrical service in the following states:

MARYLAND ONLY: The **Maryland** Public Service Commission generally requires extension of service to new buildings for residential, commercial and industrial occupancy to be made underground.

PENNSYLVANIA ONLY: The **Pennsylvania** Public Utility Commission requires the Company to install electric distribution facilities underground for the following Customers:

- (a) Residential developments, including mobile home developments, when there are five or more adjoining unoccupied lots (shall be utilities ready).
- (b) Multi-family buildings in which there are five or more single-family residences.

VIRGINIA ONLY: When the Customer requests the Company to install underground facilities in residential subdivisions of five or more lots, the Company shall install all underground facilities in accordance with its Tariff on file with the Virginia State Corporation Commission.

6.02 SERVICE LATERAL (RESIDENTIAL)

The Customer shall provide a location suitable to the Company for the required pad-mounted transformer(s) and other devices. Such location shall be free from obstructions and, where required, the Customer shall furnish and install protection from vehicular traffic as shown in Figure 27. The Company will furnish and install single-phase, pad-mounted transformer foundation(s). For services to multi-family residential buildings that require 3-phase services, the Customer shall furnish and install 3-phase pad mounted transformer foundations in

accordance with the Company's specifications (see Figures 28, 29 and 30).

When the Customer decides to install shrubs to shield a pad-mounted transformer or other pad-mounted equipment, see Figure 26 for recommended plant types and planting distances from equipment. The Customer is warned that pad-mounted transformers and pad-mounted equipment have underground electric cables entering and exiting them below grade. State law requires the Customer to call the toll free number to have the underground cables located before digging. (see Section 6.10) The Company accepts no responsibility for damage to Customer-owned shrubs resulting from maintenance of Company-owned facilities.

The Customer shall provide, at his expense, all necessary excavating and backfill and shall furnish and install the service lateral conduit. The Company shall own and maintain all service lateral facilities, including the service lateral facilities installed by the Customer. The Company will specify the type and size of the conduit to be installed. Also, the Customer shall install a 1/4" diameter, nylon or polypropylene, pulling rope that is necessary for the Company to install its underground conductors. Final acceptance of all work performed by the Customer shall be determined by Company personnel subsequent to the installation of the Company's facilities. The Company reserves the right to refuse service until the Company's standards and specifications have been met.

VIRGINIA ONLY: For residential single-phase subdivisions of five or more lots contracted under tariff plan Schedule "E", Plan "C", the Company shall provide all necessary facilities for electric service, including excavating and backfill. For all other underground service requests, the Customer shall provide all necessary excavating and backfill and shall furnish and install the service lateral conduit. The Company shall own and maintain the service lateral. The Company will specify the type and size of the conduit to be installed. Also, the Customer shall install a 1/4" diameter, nylon or polypropylene, pulling rope that is necessary for the Company to install its underground conductors.

6.03 SERVICE LATERAL (COMMERCIAL OR INDUSTRIAL)

The Customer shall provide a location suitable to the Company for the required pad-mounted transformer(s) and other equipment. Such location shall be free from obstructions and, when required, the Customer shall furnish and install protection from vehicular traffic as shown in Figure 27.

For single-phase installations;

- (a) The Company will furnish and install single-phase pad-mounted transformer foundation(s) (See Figure 31).
- (b) When the metering is located on the Customer's building or structure, the Company will provide and install all service lateral conductors to the point of metering. Customer shall provide, for the Company's use, all necessary excavating and backfill and shall furnish and install the service lateral conduit. The Company will specify the type and size of the conduit to be installed. Also the Customer shall install a 1/4" diameter, nylon or polypropylene, pulling rope that is necessary for the Company to install its underground conductors. The Company shall own and maintain all service lateral facilities to the point of metering, including the service lateral conduit installed by the Customer.
- (c) When the metering (transformer-rated) is located at the Company's pad-mounted transformer, the Customer shall provide all necessary excavating and backfill and shall furnish, own, install, and maintain the service lateral conduits and conductors. The Customer shall furnish, own, install, and maintain a Company-approved meter socket mounting structure within five (5) feet of the transformer and install a 1-1/4" IMC or rigid metallic conduit between the transformer and the meter socket.

For three-phase installations;

- (a) The Customer shall furnish and install three-phase, pad mounted transformer foundation(s) in accordance with the Company specifications (see Figures 28, 29, and 30.)
- (b) For three-phase service lateral installed in conduit, the conductors shall be installed as A-B-C-N in each conduit rather than segregated by phases.
- (c) When the metering is located on the Customer's building or structure, the Company will provide and install all service lateral conductors to the point of metering. Customer shall provide, for the Company's use, all necessary excavating and backfill and shall furnish and install the service

lateral conduit. The Company will specify the type and size of the conduit to be installed. Also the Customer shall install a 1/4" diameter, nylon or polypropylene, pulling rope that is necessary for the Company to install its underground conductors. The Company shall own and maintain all service lateral facilities to the point of metering, including the service lateral conduit installed by the Customer. For transformer-rated meter installations – refer to Section 8.06.

(d) When the metering is located at the Company's pad-mounted transformer (preferred), the Customer shall provide all necessary excavating and backfill and shall furnish, own, install, and maintain the service lateral conduits and conductors. For transformer-rated metering at pad-mounted transformer, refer to Section 8.07.

(e) For metering communications, refer to Section 8.08

Existing services. Where the customer installed service lateral conduits and service lateral conductors to metering equipment using the Customer Requirements for Electric Service standards prior to 2/1/1997, the Customer shall be responsible for repairs and upgrades.

6.04 SERVICE ENTRANCE

The Customer shall provide and install, own and maintain the complete service entrance from and including the meter socket* to the service entrance disconnect. In addition, the Customer shall supply, install, own and maintain all material located on the load side of the service entrance disconnect.

* **WEST VIRGINIA ONLY:** The Company shall supply and the Customer shall install the required meter socket (see Section 9.02).

Where required, all transformer-operated metering enclosures (including current and voltage transformers) shall be pre-wired and furnished by the Company and installed by the Customer (see Section 8.06).

The service entrance conductors shall be of sufficient ampacity to meet the requirements of the NEC and any other applicable codes. The service entrance conductors shall not be spliced.

The Customer's service entrance shall have a minimum of two driven ground rods (eight (8) feet minimum length) at least six (6) feet apart. The grounding electrode conductor shall be continuous from the service entrance main disconnect to both driven ground rods. The Customer shall install the service entrance in such a manner to insure that all of the grounding/bonding requirements of the NEC are met or exceeded.

6.05 CONNECTIONS BETWEEN COMPANY'S & CUSTOMER'S FACILITIES

The connections between the Company's and the Customer's facilities shall be made only by authorized employees of the Company. The Customer's installation shall be completed and any required inspections obtained prior to the time the Company installs its facilities (see Section 4.06).

The Customer will be responsible for connecting all service entrance conductors to any form of Customer-owned disconnecting devices or equipment. In cases involving underground service laterals, or parallel services, the Company will advise the Customer sufficiently in advance of the time when service is required concerning the number, size and type of conductor(s) the Company will use. The Customer will also be responsible for insuring that the main disconnect or terminal box has the proper number and size of terminals to accept the Company's conductors and that loads shall be so connected as to be balanced among phases and sets of conductors.

The Company will be responsible for making all connections to its power transformer or metering transformers regardless of whether involved conductors are Company or Customer owned. The Company will connect its service lateral to the Customer's service entrance. For **commercial or industrial** Customers, the Company will furnish and install the connectors necessary to connect the Customer's service lateral to the Company's pad-mounted transformer. The Customer shall provide sufficient length of conductor for Company to make required bends and connections.

6.06 PERMANENT UNDERGROUND SERVICE INSTALLATION

Typical permanent underground service installations are shown in Figures 20, 21, 23 and 24. The service lateral shall be installed in such a manner to maintain the clearances as shown.

6.07 TEMPORARY UNDERGROUND SERVICE INSTALLATION

A typical temporary underground service installation is shown in Figure 22.

6.08 MOBILE/MANUFACTURED HOME UNDERGROUND SERVICE INSTALLATION

A typical mobile home underground service installation is shown in Figure 21. The Customer will be required to provide a suitable support for the Company's metering facilities. The location of this support shall be subject to Company approval. In addition to the installation shown

in Figure 21, when a combination meter socket/disconnect or load center is used as service equipment for any mobile home the following shall apply:

- a) The line side lugs of the meter socket shall be factory wired or bussed to a location in or below the disconnect or load center and allow the service lateral conductors to terminate without bending or passing over top of or around other equipment or terminations.
- b) The meter socket shall be in the top position of the combination equipment, above the disconnect or load center section.

To determine whether or not a manufactured home is considered a mobile home, refer to items (a) through (e) in Subsection 5.07.

6.09 UNDERGROUND SERVICE INSTALLATIONS IN EXCESS OF 600 VOLTS

The Customer shall contact the Company if a service voltage in excess of 600 volts is required.

6.10 EXCAVATION NEAR UTILITY UNDERGROUND FACILITIES

For safety to persons, property, or to prevent loss of service to the public, person(s) planning to excavate shall **mark the area to be excavated with white paint** and call the telephone number listed below for that state for assistance in locating and marking underground facilities. This call shall be made at least 48 hours (72 hours in **PENNSYLVANIA**), not including weekends and holidays, in advance of the planned excavation.

MARYLAND: "Miss Utility" (1-800-257-7777)

PENNSYLVANIA: "Pennsylvania One-Call" (1-800-242-1776)

VIRGINIA: "Miss Utility" (1-800-552-7001)

WEST VIRGINIA: "Miss Utility" (1-800-245-4848)

Excavation shall not begin until excavator has been notified:

- (a) That the line location has been marked by stakes, paint, or other suitable identifying means as indicated below: **MARYLAND:** within 18 inches (3 feet in Montgomery County) on either side.
PENNSYLVANIA: within 18 inches on either side horizontally from the outside wall of such line.
VIRGINIA & WEST VIRGINIA: within 2 feet on either side.
- (b) That in extraordinary cases, if the utility cannot mark within 2 working days, it will notify the person proposing to excavate of this fact and will advise the person of the date and time when the underground facility will be marked.

- (c) That a utility's underground facilities are not within the area of proposed excavation and therefore do not have to be marked.

In the event excavation uncovers buried electrical cables, conduits, or warning tape with the following message "**CAUTION—BURIED ELECTRICAL LINE BELOW,**" please discontinue excavation immediately and notify the Company (1-800-255-3443).

The National Call Before You Dig Hotline number (811) is available to request underground location in many states.