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The Company reserves the right to refuse electric service to a new or existing installation, or to disconnect an existing installation from the Company's lines, should it be determined by inspection that such installation does not conform to the requirements of the Company, or the NEC, or presents a safety hazard to the general public which might injuriously affect the customer's equipment, equipment of the Company, or the Company's service to other customers. Cases of dispute shall be referred to the authority having jurisdiction.

405. Connections

All connections of customer-owned equipment and material to the Company's facilities must be made by an authorized employee of the Company.

406. Removal of Seals

In general, Company seals shall be removed only by an authorized employee or a person authorized by the Company. The Company must be notified when the service is to be reenergized. In emergencies, qualified individuals may be given verbal permission to remove seals and de-energize service. A qualified individual must be an electrician with a currently active electrician license issued by the State of Maine. The license must be for a Master Electrician, a Journeyman Electrician or a Limited Electrician with a qualification for "House Wiring" which is restricted to one-family and two-family dwellings including modular and mobile homes. An will exist if there is the possibility of damage to property or injury to persons and the qualified individual must de-energize the service so that damage to property or injury will be avoided. Failure to contract sZEdVktZ prior to cutting a meter seal may lead to a charge to the customer or electrician.

407. Customer Emergency Generation

sZEdVktZ strongly encourages all customers to have a properly licensed electrician install the equipment necessary to connect emergency generators to their home's electrical system. The customer should contact their local electrical inspection authority for final approval.

A positive acting double-throw switch or transfer device shall be used, so constructed and connected as to positively prevent any possibility of power from the emergency source feeding back into the Company lines. Specific requirements and specifications for various types and sizes of customer facilities shall be obtained from the electrical contractor.

The Company will provide, upon request, a booklet of recommendations for connecting emergency generators for residential customers. All installations must meet National Electrical Code. The Company recommends that following the installation of emergency generating equipment, the customer contact their local electrical inspection authority for final approval. Also refer to Section III Article 306.

408 Line and Load Side Conductors

Line and Load conductors shall not be permitted within the same conduit, cable or raceway. Metered and unmetered conductors shall not be permitted within the same conduit, cable or raceway.

SECTION V. TYPES AND APPLICATIONS OF ELECTRIC SERVICE

501. General

To avoid misunderstandings, delays and unnecessary expense, the customer shall always inquire of the Company as to the characteristics of service available before proceeding with the purchasing, installation, or wiring of equipment. This is very important as all classes of service are not available in the entire area served by the Company. The Company will supply only one service to the building as a general rule.

502. Characteristics of Service

Service in the territory served by the Company is supplied at 60 Hertz, single or three-phase alternating current at secondary voltages listed below. Primary voltages are available for special installations. Three-phase service is not always available, and may require additional customer costs.

sZEdVktZ Approved Voltage		Class—60 Hertz
Number of Phases	Number of Wires	Nominal Voltage
1	3	120/240
3	4	120/208
3	4	277/480

Three-wire (network) 120/208 volt service is available with approval from the Company prior to installation.

600 volt services are becoming increasingly difficult to support. Equipment is no longer available at this voltage. VERSANT POWER will not accommodate any increase in load or capacity and cannot guarantee continued service at this voltage. Customers are encouraged to make arrangements to take service at a VERSANT POWER approved voltage (see above). Customer services operating in the 600 volt class will not be reconnected if service is discontinued.

Service voltages of 240 volt three phase three wire delta and 480 volt three phase three wire delta are no longer standard voltages. The Company will not supply new services at these voltages. Increased loads on existing services operating at 240 volt three phase three wire delta and 480 volt three phase three wire delta will require approval by Versant Power Engineering.

Note: Since the Company does not use two-wire metering, service installations shall consist of at least three (3) service entrance conductors as specified in Section VII, Article 701 of this booklet. Any customer or contractor seeking exception to this policy shall make a request to the Meter Tech Department prior to any installation. The Company reserves the right to refuse connection of installations not in compliance with this policy.

503. Applications of Service

Applications of each class of voltage are as follows:

1. Single-phase three-wire 120/240 volt service. This type of service will be supplied to residential, commercial and industrial customers for lighting, heating, cooking and small power loads. See paragraph 1502 for motor limitations on single phase services.

Wherever the total connected load exceeds 50 KVA, the Company may require the customer to arrange his wiring for three-phase service.

2. Three-phase, four-wire 120/208 volt service. This type of service will be supplied for large lighting, heating, cooking and power loads or a combination of these loads, when size of load warrants. Lighting and other loads shall be balanced between respective phases as closely as possible. Service taken at this voltage must have a main disconnect no greater than 600 amps when served from pole-mounted transformers. Any disconnect greater than 600 amps will be served by a pad-mounted transformer.

3. Three-phase, four-wire 277/480 volt service. This type of service will be supplied for general service or power installations having demands of not less than 50KVA unless special circumstances so warrant. Service taken at this voltage must have a main disconnect no greater than 300 amps when served from pole-mounted transformers. Any disconnect greater than 300 amps will be served by a pad-mounted transformer.

4. Service at primary voltage is available through negotiation with the Company. The Company shall always be consulted regarding the class of voltage available. Service voltage higher than 480 volts available only by negotiation with the Company. The size and type of a customer's load must warrant such an installation.

504. High Capacity Services

1. Transformer Installations. Where high capacity services are required or where it is not feasible to use pole-mounted transformers. In the case of the outdoor installation, the customer should contact a Company representative to discuss other options before proceeding.

Before installing transformers adjacent to or within a building, it is the customer's responsibility to obtain approval from the insurance underwriters for the location selected.

2. Multiple Service Conductors. The number of parallel conductors per phase which may be connected to any overhead service drop shall not exceed two (2) in number, or which may be connected to the terminals of any transformer including pad-mounts shall not exceed four (4) in number. In cases where more than four conductors per phase are required, or where more than one service is involved, the customer may be required to install a terminal box or other facilities to accommodate the multiple conductors, subject to prior Company approval.

3. Secondary Conduit Risers and Cable Size. No more than two secondary cable conduit risers will be permitted on a single pole. The maximum cable size will be 500 kcmil.

SECTION VI

OVERHEAD CONNECTIONS FROM OVERHEAD SECONDARY DISTRIBUTION

601. General

The customer will be responsible for providing and installing the point of attachment. The attachment will be either a "J" hook or an eye bolt. All wiring and related equipment, except meters, instrument transformers, test switches, and control cable (see Section XIV Article 1401), on the customer's side of the point of attachment of the service drop to a building shall be furnished, installed and maintained by the customer. This material includes the service head, service entrance conductors with three feet of slack for connection to the service drop, meter mounting equipment, conduits, service disconnecting means and ground connections. The service drop will be furnished, installed, and maintained by the Company. In general, wherever it is necessary to extend the service drop for more than 150 feet from the established road right-of-way limits, the customer shall furnish, own and maintain the suitable intermediate pole(s) and pay the cost of that part of the service drop which exceeds 150 feet from the road right-of-way limits (see Drawing 204).

602. Single Service Drop

Only one service drop connected to the same overhead mains will be attached to any one building, and only one set of service entrance conductors shall be connected to each service drop except in cases specifically permitted by the NEC or where specific permission has been obtained from the authority responsible for the enforcement of the NEC. The drop may consist of parallel service cables for capacity. Overhead services may be provided up to and including 600 ampere single switch or 1,000 ampere total switch frame capacity unless limited by construction problems. Where greater capacity is required, other types of construction such as underground service must be used. Refer to Section IX.

603. Central Distribution Point

On farms and other premises where several buildings are under one ownership, it may be desirable for the customer to take service for the buildings directly from one customer owned pole, if otherwise permitted under the Company's Terms and Conditions. The Company will permit metering on private poles. It will be the responsibility of the customer to furnish and install service drops and other service equipment for each building served that is beyond the meter. In no event will any customer owned services pass from the central distribution point back onto Company poles. For installations of this type, a weatherproof main disconnect switch be installed on the pole. All installations of this type shall be referred to the Company for approval before any wiring is started.

604. Point of Attachment of Service Drop

The point of attachment of a service drop to a structure shall be designated by a representative of the Company before service wiring is started.

Customers having service wiring installed without first obtaining location approval for the point of attachment do so at the risk of having to relocate same.

605. Service Drop Clearances

Location	Minimum Clearances
Sidewalks and spaces accessible to pedestrians only	12 feet
Over residential driveways	16 feet
Over railroad tracks	24 feet
Public streets, roads, alleys and commercial or industrial driveways	18 feet

The above clearances are the minimum required at 120 degrees final sag or 32 degrees and one half (1/2) inch ice, whichever produces the greatest sag. (NESC requirements.)

606. Low Buildings

In order to obtain minimum clearances for various types of low buildings, it may be necessary for the customer to install a pole or a Company approved extension mast (see NEC Article 230-24 or Drawings 202 and 2702). If minimum clearances are not obtained, the service will not be connected.

607. Travel Trailers and Other Structures Not Suitable for Direct Service Attachment

An approved rain-tight service disconnecting means rated at not less than 60 amperes and with appropriate overcurrent protection shall be installed in accordance with National Electrical Code Article 373-2, at the meter location (refer to Illustration No.

6 or No. 28 in Section XII). For recreational vehicles, the disconnecting means shall generally be located near the point of entrance of supply conductors in compliance with the NEC, Article 551.

608. Manufactured (Prefabricated) Buildings

Manufactured (prefabricated) buildings, including modular homes, may have the service drop and meter mounted on the structure if of sufficiently sound construction and set on a permanent foundation. The service entrance conductors and equipment shall be in accordance with standard services in this handbook and the NEC, Article 230 and Article 545.

609. Mobile Homes

A. Service Equipment Separate from the Structure:

An approved rain-tight service disconnecting means rated at not less than 100 amperes and with appropriate overcurrent protection shall be installed in accordance with NEC Articles 373-2 and 550 at the meter location (refer to Illustration No. 6 or No. 28 in Section XII). Company approved pre-wire combination meter and service equipment may be used.

If the meter is located more than 30 feet from the mobile home, then the disconnecting device with appropriate overcurrent protection shall be located within 30 feet of the mobile home in compliance with the NEC, Article 55-23. This disconnecting means shall then be considered the service entrance equipment and the disconnect at the meter location may be omitted. However, the service cable from the meter location to the service entrance equipment must comply with all Company standards for an underground service cable installation.

B. Service Equipment installed on the Structure:

A permanently-sited mobile home manufactured under a HUD seal, with undercarriage removed, and connected to water and sewer, may have the service equipment installed directly on the structure provided that it is installed in a manner acceptable to the "authority having jurisdiction" (local or state electrical inspector) as stated in NEC Article 550-23 (a), Exception No. 2.

The electrical inspector will generally require that the installation comply with the mobile home manufacturer's instructions on proper attachment to the structure.

SECTION VII. SERVICE ENTRANCE CONDUCTORS—OVERHEAD

701. General

The service entrance conductors are the conductors between the terminals of the service equipment and the connection to the Company's overhead service drop.

All service installations shall consist of at least three (3) conductors, of a type approved for this purpose by the NEC, and with a capacity sufficient to carry the load consistent with the NEC, with larger sizes recommended for future load growth.

The ungrounded conductors shall not be smaller than No. 6 AWG copper or equivalent, and the minimum neutral size per NEC Requirements.

For special limited applications, smaller conductor sizes may be used in compliance with NEC, and approved by the Company.

702. Service Head

An approved service head shall be installed above and within approximately 12 inches of the service drop point of attachment. At least three (3) feet of the service entrance conductors shall extend beyond the service head, to provide suitable drip loops for preventing entrance of moisture.

703. Installation Methods

Service raceway and service entrance conductors shall be continuous without taps, breaks, splices, junction or outlet boxes from service head to service disconnecting means, except at meter. Raceway or cable shall be exposed for its entire length except where it enters and passes through the building wall and except where a service mast passes through the roof overhang.

The raceway or cable shall be securely attached to building or structure and all connectors, screws or other metal devices shall be rust-proof.

It is recommended that when the exterior construction of the building consists of rough stone, brick, stucco, or metal siding, all service entrance conductors shall be installed in rigid or intermediate metal conduit, steel electrical tubing, or rigid non-metallic

conduit recognized for use above ground as permitted by Article 347 of the NEC. Raceway or cable must not be attached to chimneys or roofs.

Cable or raceway shall always be located so that entrance through building is at least 12 inches above ground level and so that proper clearance will be provided from rain spouts, fire escapes, telephone wires, windows and blinds.

The service entrance equipment shall be located as near as possible to the point of entrance of the conductors.

All services shall be installed in accordance with the NEC (see Appendix Drawings).

SECTION VIII. GROUNDING

801. General

A permanent and effective ground must always be provided for service equipment, in accord with the requirements of NEC Article 250—Grounding. The neutral conductor of the service shall always be grounded and the grounding connection shall be made in the outdoor meter socket and/or in the service cabinet. No conductor of a three-phase, three-wire service shall be grounded at any point in the wiring installation. All grounding shall be complete before the Company will make the service connection to its lines.

802. Service Grounding Electrode System

In accordance with National Electrical Code Section 250-H, the service grounding electrode system shall consist of the following:

Two ground rods, driven to their full depth and separated by six feet must be installed. The rods must be connected together. They must be at least eight feet long, not smaller than 5/8 inch diameter if of galvanized steel, ½ inch diameter if of approved copper clad steel.

803. Bonding

All grounding electrodes used on the premises shall be bonded together, and bonded to any interior metal piping system, heating systems, meter enclosures, troughs, metallic pole risers, conduits, cable armor and cabinets, or other extensive metal systems.

Bonding is effective as a means to prevent or mitigate problems due to the phenomenon commonly called stray voltage. The Company recommends that provisions be made to bond any steel reinforcing mesh or rod to the electrical grounding system whenever any concrete slabs are poured. This is particularly important for dairy barns and houses constructed on concrete slab foundations. Refer to NEC Article 547-8 for information regarding equipotential planes in agricultural buildings.

Whenever work is in progress on any premises, contractors are urged to inspect the condition of all grounds and bonds, and inform the owner accordingly. The connection to a metal underground water system shall be on the street side of the water meter, if practical, otherwise bonds shall be placed around all parts which may be disconnected, between the point of attachment and the street side of the water meter.

804. Grounding Conductor

The grounding conductor shall always be rigidly supported, protected from mechanical damage and be securely attached to the grounding electrode with a cast metal clamp or other device or method as approved by the NEC. The size of the conductor must also meet the requirements of the NEC Article 250-92A and in no case be smaller than No. 6 AWG Copper. If a ground rod is placed away from a building foundation, the grounding electrode conductor shall be protected by burying beneath the surface of the ground.

805. Lightning Protection

When electric service is installed in a building that is equipped with lightning rods (or vice versa) and both systems are grounded by driven electrodes, the NEC requires that a separation of at least six feet be maintained between electrodes wherever practical. The grounding electrode systems should be bonded together. The ground connections from a television antenna for the purpose of lightning protection should be treated the same as a lightning rod ground.

806. Surge Protection

All whole house power surge devices must be connected on the load side of the meter and be installed by a licensed electrician.

SECTION IX

UNDERGROUND SERVICES—GENERAL

901. Customer Costs

Arrangements for the payment of any costs which are to be the responsibility of the customer in connection with the installation of underground service, shall be made in advance of construction of the system. Such cost can include but are not limited to the cost of underground cable, underground cable terminations, underground cable load break elbows, underground cable feed through devices, fusing / switch cabinets and the cost difference between pad mount transformers and pole mount transformers.

902. Underground Scheduling

Construction of underground systems shall not normally take place during winter or early spring. Installation of underground facilities involving Company owned equipment or facilities which will subsequently be owned by the Company shall not take place during such periods without the written consent of the Company. Any additional costs incurred as a result of installation of underground facilities during such periods shall be the responsibility of the customer.

903. Other Underground Facilities

Water and sewer facilities and other construction normally installed below the electrical facilities shall be completed before the electrical facilities are installed. The Company will require an easement for any Company owned underground facility on private property. The customer will provide an as built survey by a registered land surveyor that will be attached and filed with the easement at the registry of deeds.

904. Insurance

Customers desiring the installation of underground facilities shall consult with their insurance carrier concerning the location of such facilities, proper clearances, the presence of Company-owned equipment, and other matters.

905. Customer Work Responsibility

Work for which the customer is responsible involving Company-owned facilities or facilities which will subsequently be owned by the Company, shall be completed in accordance with the standards and specifications of the Company. Notification of work being done shall be required and trench inspections prior to back filling may be necessary.

906. Soil Conditions

Soil and terrain conditions must be suitable for an underground system, as determined by the Company's Engineering Department. Where ledge excavation is necessary, a reduction of cover may be allowed where supplemental protection is provided as permitted by the NEC (see NEC Articles 300-5(a) and 710-3(b), and NESC Section 35). All underground facilities will be installed with proper drainage. Conduit and foundation systems that do not properly drain will not be connected.

907. Terminal Poles

Company-owned terminal poles for underground service shall be 40 feet minimum length. No underground services will be installed on distribution/trans-mission poles without permission from the Company (refer to Drawing 2707). Whenever possible, underground services and line extensions will originate from new poles located outside the public way.

908. Existing Overhead Facilities

If primary underground facilities are ~~service~~ requested to replace existing overhead company facilities, the customer must pay the full replacement cost. All new company owned undergrounds replacing existing overhead lines will have redundant cable runs for reliability,

909. Underground Service and Primary Cable Riser Construction

When installing risers on de-energized structures, the electrician will have all of the cable and conduit riser construction complete and attached to the. If the electrician is not able to complete the work, then Versant Power will assist if resources are available. The electrician will be charged for the cost of the work.

When installing 2.5" (two and one half inch) risers on energized structures, the conduit, cables and weather head shall be assembled in one piece on the ground from the top of the sweep at the foot of the pole to the weather head. Versant Power will raise this assembled riser and mount it on the pole. The electrician will provide all materials needed for a complete installation.

On Energized structures with conduit risers in excess of 2.5" (two and one half inch) the electrician will install no more than one ten foot section of conduit on the pole. Versant Power will then assist with the installation of the remaining conduit, support brackets and hardware. Once the conduit system is complete, Versant Power will assist with the installation of the conductors. The electrician will provide all materials needed for a complete installation.

SECTION X

FROM A PRIVATELY OWNED UNDERGROUND SERVICE

1001. General

1. VERSANT POWER will allow private underground service to a customer subject to the customer providing and installing his material and equipment compatible with and approved by the Company. The service will be a customer-owned facility and subject to the excess cost and private overhead line provisions stated in these standards.
2. Underground services should be installed in complete accord with Company specifications to provide for possible future acceptance by the Company in case of service expansion to include other customers.
3. A plan of the underground facility should be provided for the project file.

1002. Types of Services

1. Residential underground primary or secondary service.
2. Commercial, industrial, and government underground primary and/or secondary service.

1003. Company Responsibilities

1. Furnish, install, own and maintain padmount transformer (as required).
2. Furnish, install, own and maintain lightning arresters, fused cutouts, terminations and load break elbows, on Company-owned facilities.
3. Install customer supplied conduit, conductors, bushings and conduit clips on Company-owned poles where energized power line are present.

1004. Customer, Developer, or Builder Responsibilities

1. Provide all excavation, ductwork, and backfill involving Company facilities in accord with Company specifications.
2. Furnish, install, own and maintain primary and/or secondary cable, which must be compatible with Company equipment.
3. Furnish and install duct system, as required, under all public ways.
4. Furnish terminal pole riser conduit(s) including necessary fittings. The Company will assist with the conduit installation on Company pole if energized power lines are present. (Refer to Drawing 2707).
5. Maintain safe operating conditions and keep building, bushes, and trees clear of Company facilities. Compliance of this rule must meet with Company approval.
6. Fuse cabinets and transformers must be located so that they are readily accessible by a Company truck. Access to this equipment will be from a maintained driveway, road or parking area. Pad mounted equipment will be protected from traffic and not exposed to damage from snowplowing. Pad-mount transformers and fuse cabinets shall not be located more than 20 feet from truck access or a paved way. (Refer to Drawing 2227.1).
7. The conduit system and transformer foundation must be provided with adequate subsurface drainage, and be graded for proper surface water run off. The foundation must meet Company standards. Refer to Standards Drawings for drainage details.
8. Transformer barriers or bollards must be provided to Company specifications, where danger of traffic or snowplow damage or snowplow exposure exists. . (Refer to Drawing 2227.1).
9. Pay all cost quoted by the Company including excess cost before construction.
10. Provide a Legal Description locating all Company facilities on private property.
11. Sign service agreements, service contract, and easements provided by the Company.
12. Check with local, county, state, and federal governments for necessary permits to locate underground facilities on or across public ways.

SECTION XI

UNDERGROUND SERVICE— COMPANY-OWNED UNDERGROUND DISTRIBUTION SYSTEM

1101. General

Versant Power will own an underground distribution system when requested by a customer, builder or developer. The Underground Distribution System will become a Company-owned system upon satisfactory completion as outlined in these standards, and approved by the Company's Engineering Department. The Underground Distribution Network will be subject to the excess cost provisions, all other applicable provisions under Section IX of these standards, and all provisions outlined within Section XI of these standards.

1102. Types of Services

1. Residential underground primary service.
2. Commercial, industrial and governmental underground primary service.
3. Residential, industrial and commercial underground primary distribution network, residential subdivision, industrial park, etc.

1103. Company Responsibilities

1. Furnish, install, own and maintain pad-mount transformer(s).
2. Furnish, install, connect, own and maintain primary power cable.
3. Acquire appropriate permits from local, county, state and federal governments.

1104. Customer, Developer or Builder Responsibilities

1. Provide all excavation, ductwork and backfill involving Company facilities in accord with Company specifications.
2. A pull wire must be provided by the customer in all ducts to facilitate the installation of cable.
3. Furnish to the Company four (4) complete copies of the site plan for the development as approved by the municipality. Such plans should show the grading, layout and dimensions of lots, sidewalks and curbs, the location of water systems, storm, sanitary sewer systems, and other underground structures.
4. Furnish to the Company four (4) complete copies of the electrical plans for the development. Such plans should show the electrical riser diagram, electrical load data, estimated electrical demand and meter arrangements.
5. Provide a legal description locating all Company facilities on private property.
6. Execute service agreements, service contract, and easements provided by the Company.
7. Furnish and install transformer foundation per standards Drawings 2201 through 2203.
8. Fuse cabinets and transformers must be located so that they are readily accessible by a Company truck. Access to this equipment will be from a maintained driveway, road or parking area. Pad mounted equipment will be protected from traffic and not exposed to damage from snowplowing. Pad-mount transformers and fuse cabinets shall not be located more than 20 feet from truck access or a paved way. (Refer to Drawing 2227.1).
9. Provide adequate subsurface and drainage for transformer foundations and conduit systems.
10. Transformer barriers must be provided to Company specification, where danger of traffic damage exists.
11. Maintain safe operating conditions and keep buildings, bushes and trees clear of Company facilities.
12. Upon completion of the Project, provide the Company with a reproducible "as built" site plan no larger than 8 1/2" x 14" Mylar showing the location of all underground facilities.
13. Pay all cost quoted by Company including excess cost before construction.

SECTION XII

UNDERGROUND SERVICE—FROM EXISTING UNDERGROUND DISTRIBUTION

1201. General

The Company must be consulted before any work of this type is started as requirements will be given for each individual installation.

1202. Underground Ducts

In areas where the distribution system is underground, the Company will furnish, install and maintain the necessary duct line within the limits of the public way, and the customer will be required to furnish, install and maintain any extension of the duct line beyond the street line to the service entrance equipment in his building. The customer will be responsible for the cost of the work within the street line and the cost of the extension.

1203. Underground Conductors

The Company will furnish, install the necessary conductors from the distribution system to the service entrance equipment. The customer will be responsible for the cost of the conductors.

1204. Company Conversion to Underground Distribution System

In cases where the Company converts from an overhead to an underground distribution system, the customer will be required to bear the cost of rearranging his service entrance to accommodate the underground connection.

SECTION XIII

SERVICE DISCONNECTING MEANS

1301. General

Each set of service entrance conductors shall be provided with an approved type of disconnect for disconnecting all ungrounded conductors from the source of supply. In multiple occupancy buildings, where required by the NEC or as specified by local ordinances, a main service disconnecting means shall also be installed so as to completely disconnect all ungrounded interior wiring at one point.

1302. Capacity

The service disconnecting means shall be of a type and size approved for such use by the NEC, with a minimum capacity of 100 amperes, three-wire, but not less than the load to be carried as determined in accordance with NEC Article 220 (see Section VI, Article 607).

For a one-family dwelling, the service disconnecting means shall have a minimum rating of 100 amperes, three-wire, where the initial computed load is 10KW or more.

The minimum size service disconnecting means for a temporary service shall be 20 amperes. (Revised November 2, 1987.)

1303. Location

The disconnecting means shall be located at a readily accessible point, as near as possible to the point of entrance of the service conductors into the building. It is recommended that the service disconnecting means should not be located in bathrooms, or other normally locked areas.

1304. Sequence of Disconnecting Means and Meter Equipment

The location of the service disconnecting means shall be on the load side of the metering equipment (meter-switch-fuse sequence).

Exception 1—In multiple meter locations where the NEC requires a main disconnect, the sequence shall be main disconnect-meter-switch-fuse.

Exception 2—The Company may allow a switch-fuse-meter sequence in switchgear. Prior Company approval is required.

When NFPA regulations require fire alarm systems to be tapped into the line side of the main disconnect, then the metering shall be on the line side of all disconnecting means. Meter-fire alarm-switch-fuse sequence.

1305. Metered and Unmetered Wires

All unmetered wires, except those used as service entrance conductors in cable, shall be run in steel or aluminum conduit, steel electrical metallic tubing, suitable rigid non-metallic conduit or sealable standardized metal troughs as permitted by the NEC. Metered and unmetered wires shall not be run in the same conduit, raceway or gutter.

1306. Type of Disconnecting Means

The minimum size and type of service disconnecting means is a 100 ampere switch or circuit breaker, which shall be approved for such use by NEC and meet the following requirements:

1. Externally and manually operable, and shall indicate whether it is in the open or closed position.
2. Solid neutral type with no overcurrent device in the grounded service conductor.

3. Approved for service equipment use, and for the prevailing conditions, by Underwriter's Laboratories, Inc., or other accepted testing laboratory.

The Company reserves the right to specify, and seal, the type of disconnecting means that must be used for any particular installation, as a general safety measure and protection against tampering by unauthorized persons.

For small or special installations which supply limited loads, the disconnecting means may be rated less than 100 amperes in compliance with NEC and approved by the Company.

SECTION XIV. METERING EQUIPMENT

1401. General

The customer shall furnish Company-approved meter mounting devices. All such enclosures must be sealable with padlock type seals and such seals shall be removed only by an authorized employee or a person authorized by the Company. All meter sockets, meter troughs, and meter modules shall have the Underwriter's Laboratory Label, or other accepted laboratory label. The Company will furnish and install all meters.

When required, current transformers, potential transformers, test switches, and control cable will be furnished by the Company for installation by the contractor in an enclosure furnished by the Company or in the customer's service equipment. Secondary electrical connections to the meter will be done by the Company. All metallic equipment used for metering purposes shall be properly grounded as required by Article 250 of the NEC.

A meter socket (enclosure) shall be permanently and solidly mounted before the meter will be installed. All outside meter enclosures must be secured by screws, #12 minimum, which are stainless steel or zinc or cadmium coated (no washers allowed). Whenever a meter enclosure is mounted on siding (no backboard) use of screws that accommodate a Phillips and/or slotted style screwdriver is requested. Self contained meter sockets attached to a building shall not be secured such that the cables will prevent subsequent access to the mounting screws. This requirement is to allow for future "floating" of the meter socket.

1402. Meter Sockets

Socket meters will be standard for all single-phase and three-phase installations where the load does not exceed 200 amperes and 400 amp 120/240 single-phase and 120/208 three-phase. All poly-phase and 400 amp single-phase meter sockets must have a single handle-operated manual bypass which locks the meter blades in the socket jaws. The manual bypass operating mechanism must be visible when the meter is installed. It must not be possible to override the bypass by replacing the cover or sealing ring when the operating mechanism handle is in the bypassed position. Manual bypass operating mechanisms will be allowed on 200 amp single-phase meter sockets when there is a disconnect within sight of the meter socket.

None of the following features are allowed, and shall cause rejection of the meter mounting device and refusal to connect service until an acceptable device is installed.

- 1. Automatic by-passes.** Automatic by-passes are not permitted.
- 2. Horn-type by-passes.** Horn-type by-passes are not permitted.
- 3. Aluminum sealing rings.** Aluminum sealing rings are not permitted as a substitute for stainless steel sealing rings.

A special metering socket, which shall accept a fifth terminal at the 9 o'clock position, is required for a network service consisting of any two-phase conductors and a ground conductor obtained from a three-phase, four-wire system.

1403. Meter Location

The location of all metering equipment shall be designated by a Company representative, and selected with regard to accessibility for reading and maintenance. Customers having wiring installed for metering without first obtaining Company approval do so at the risk of having to relocate same. Meters will always be located outdoors. Indoor meter installations will be allowed only when special advance approval has been obtained from the Company's representative.

1404. Clearance for Metering Equipment

Not less than three feet of clear, unobstructed space shall be provided and maintained under and in front of all metering equipment. In the case of unguarded moving machinery, changes in floor level, etc., a distance of four feet shall be provided in front of all meters. A clearance of at least twelve inches shall be provided between the nearest obstruction above and on each side of any single meter or group of meters. Clearance measurements shall be made from the sides, top or bottom of the meter enclosure.

The Company shall be consulted in all cases where meter mounting space is limited. When meters are mounted in a group, special layouts shall be obtained from the Company before proceeding with equipment installation. Sufficient clearance shall be provided in choosing the location of all metering equipment so that the doors of all cabinets can be completely opened.

1405. Identification of Meters

Wherever there is more than one meter installed on any one premises, the area served by each meter, such as room or apartment number, floor or other area, shall be neatly and plainly marked on the service entrance equipment and, if the meter is mounted outdoors, on the top of the meter enclosure—**not on the cover**—with paint. Where meters may be stacked, the identification must be made on a permanent part of the equipment as near as possible to each meter. Do not put identification on the covers, as covers can be removed and interchanged.

1406. Multi-Connection Points

Single terminals of meters, or meter connection blocks, shall be used as a connection point for one conductor only. Where multiple conductors are used, terminal lugs or copper bus sections suitable for attaching to the source shall be furnished and installed by the contractor (see Drawing 2704a).

1407. Installation of Meter Devices

All meter sockets and mounting devices shall be rigidly secured with screws, to provide a clear space suitable for mounting the meter in a level and perpendicular position with meter rotor shafts plumb. Meter heights must not be over (5) five feet or less than (4) four feet from ground or floor level to the top of the meter. Exceptions to meter heights will be allowed only where special conditions exist (see Section XIV Article 1410).

1408. Outdoor Meter Installation

Socket type metering shall be used on all new self-contained outdoor meter installations, all reestablishments of inactive or abandoned services, all services to which alterations are being made, and those services that are considered unsafe by the Company's representative. The electrical contractor will install the meter socket furnished by the customer, which must be of a type approved by the Company's Meter Department. Approved fittings and gaskets must be used for all connections.

Without the approval of the Company, outdoor meter installations shall not be enclosed or obstructed in any manner.

1409. Pole Mounted Meters

Meters generally will not be allowed on Company poles. Meters installed on customer's poles should be done only after consulting with the Company's representative. Where more than one meter is or may be required in the future on this same pole, other arrangements may be necessary (see Drawing 2706).

1410. Prefabricated Meter Centers

Prefabricated meter centers, which are UL approved for the application and meet the following requirements, may be used for indoor or outdoor multiple meter installations:

1. The maximum number of meters allowed in vertical arrangement shall be four (4).
2. Minimum distance from floor level to top of bottom meter is 18 inches.
3. Maximum distance from floor level to top of top meter is 66 inches.

1411. Meter Pedestals

Meter pedestals used with underground services must be approved in advance by the Company. The meter pedestal must be installed so that the top of the meter will not be more than five feet or less than four feet above the finished grade or ground line (see Drawing 2715).

1412. Multiple Occupancy

The location of all metering equipment shall be designated by a Company representative, and selected with regard to accessibility for reading and maintenance. Customers having wiring installed for metering without first obtaining Company approval do so at the risk of having to relocate same. Meters will always be located outdoors. Indoor meter installations will be allowed only when special advance approval has been obtained from the Company's representative.

1413. Instrument Transformer Metering

Installations rated in excess of 200 amperes or 400 amp 120/240 or 120/208 three-phase, shall be arranged for instrument transformer metering. In such cases, the Company will furnish the necessary instrument transformers and meter connection box of either the indoor or outdoor type with test switch. The electrical contractor will install the cabinets, meter box, and 1¼" steel or IMC

conduit from each set of remote current transformers to each meter box for the secondary metering conductors. Conduit should be no more than 40 feet in length. Conduits underground should be 1 1/2" rigid or IMC (see Drawings 2714, 2715 and 2718.)

When the service equipment consists of prefabricated metal-enclosed cubicles or switchboards designed for built-in instrument transformers, the customer shall obtain specifications from the Company for the transformers which the Company will furnish. The cubicles or switchboard shall then be manufactured to accommodate the specified instrument transformers.

On installations where the neutral conductor does not pass through the transformer compartment, an insulated neutral conductor, not smaller than the service grounding conductor, shall be brought into and connected to an insulated terminal in the transformer compartments. Metered and un-metered busses or conductors shall be separated by barriers. The Company shall always be consulted before this type of metering transformer arrangement is specified.

1414. INSTRUMENT TRANSFORMER CABINETS

For installations where the service voltage does not exceed 480 volts, cabinets for instrument transformer (C.T.s) shall be furnished by the customer and be constructed and installed so as to meet the requirements of NEC Article 312. Cabinet size will be as specified by Versant Power (the Company)

All cabinets shall be constructed so the cover can be readily opened. The cover shall be attached with hinges. The cabinet must be mounted so that the cover does not interfere with installation or maintenance work. All cabinets shall be weatherproof or rain tight and be installed outdoors.

Provision must be made so that the cabinet can be securely sealed with a padlock type meter seal and padlock when the cover is closed. No customer owned devices other than conductors and connectors will be allowed in the C.T. cabinet.

Instrument transformer cabinets with mechanical connectors (Similar to Milbank S1855-O or Cooper B-Line 78205139309) which support bar type current transformers are required.

All line conductors, including the neutral, shall pass through the instrument transformer cabinet. A neutral connector shall be installed by the customer to provide for the connection of the metering neutral. The customer shall mount all instrument transformers and make all primary connections. Secondary metering wires are furnished and installed by the Company.

A separate 1 ¼" minimum metallic conduit for secondary wires between instrument transformer cabinets and meter enclosures shall be furnished and installed by the customer. This conduit shall be either rigid metal conduit (RMC) or intermediate metal conduit (IMC) and be properly bonded to provide an effective ground. The maximum run of this conduit will be 35 feet.

The top of the cabinet shall be between 5 feet and 6 feet from finish grade.

SECTION XV

CUSTOMER EQUIPMENT

1501. General

Electric service must not be used in such manner as to cause unusual fluctuations or disturbances in the Company's supply system, and in the case of violation of this rule the Company may discontinue service, or require the customer to modify his installation and/or equip it with approved controlling devices.

1502. Motors

Individual motors in excess of 5 hp and multiple motors totaling greater than 10 hp will not normally be served by a single phase service. Review by T&D Engineering is required if attempting to serve motors larger than the aforementioned by a single phase service.

The Company reserves the right to refuse service to polyphase installations totaling less than 10 hp. Furthermore, it is required that T&D Engineering approve all installations utilizing motors in excess of 5 hp

1503. Power Factor Correction

All customers whose rated capacity of electrical equipment exceeds 50 horsepower shall maintain an average power factor of 85 per centum for each month. If such power factor is less than 85 per centum in any case, the Company may request the customer to make such changes in or additions to his/her equipment as will bring the power factor to at least 85 per centum. If such changes or

additions are not made within three months after such request, then until such changes or additions are made, the monthly bill, so calculated under the rate applicable to the particular service, shall be multiplied by one of the following constants:

Average Monthly Power Factor	Constants
.85 to .81	1.00
.80 to .76	1.02
.75 to .71	1.05
.70 to .66	1.08
.65 to .61	1.12
.60 to .56	1.18
.55 to .51	1.24
.50 or less	1.33

The use of equipment by the customer for power factor correction must conform to requirements of the Company as to electrical characteristics of equipment and its operation and control. The customer may be required to limit the size of his static capacitor installation or to maintain effective control of his capacitors or other corrective equipment in order to prevent the use of such equipment from causing excessive voltage at the service. Corrective equipment installed by the customer must be located on the load side of his service disconnecting device.

1504. Arc Welders

Before service is connected the Company will require a customer to obtain specific permission from the Company for the installation of an A.C. arc welder. The Company reserves the right to refuse the supply of service to A.C. arc welders which cause interference or disturb the quality of service to other customers.

1505. Antennas

Antennas and satellite receivers shall not be erected over or under the lines of the Company or attached to poles with electric service, as this practice would create a serious hazard.

Versant Power's PLUS Program

PLUS—Private Line Utility Support—gives you complete coverage (materials and labor) for repair/replacement of any broken or worn out parts of your private electric line. At a monthly cost per pole, you can purchase worry free protection from large unexpected expenses due to storms or other damage causing incidents. Contact Versant Power to inquire about this unique program, and upon a satisfactory inspection of your line, you will be enrolled in our PLUS program. More about the PLUS program can be found at WWW.VERSANTPOWER.COM