

Section 6 – Policies, Code, Misc

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6-1 Company Policies - General

6-1.1 Arc Flash Warning

Company electrical facilities have the potential of delivering very high levels of energy during an arc flash incident, potentially causing severe injury or death. Follow the appropriate requirements of MIOSHA and NFPA - 70E if exposed to energized parts of electrical service entrance equipment and electrical metering.

6-1.2 Code Compliance, Inspection & Reconnects

All wiring shall be done in accordance with requirements of Michigan Law (in particular the National Electrical Code as adopted by Michigan Rule 408.30801, Michigan Electrical Codes Rules (part 8) and revised by subsequent sections of law), the Company's rules and other local requirements, whichever applies.

In new wiring installations or when changes in existing wiring are made which require the removal of meters or the disconnection of service, the Company will not connect or resume service until the facility is inspected and approved by a certified inspector (MI Rule 408.30818).

The Company requires an inspection to reconnect if an account is inactive for greater than a year and/or if any modifications have been made to the meter socket or customer-owned wiring. It is the customer's responsibility to make sure that the electrical system is in a safe condition when requesting reconnection of a service. Note that some local jurisdictions may require inspection before a reconnection, superseding the Company's requirements. Some jurisdictions may require the service and/or meter components to be upgraded. The Company will refuse to reconnect inactive services due to out-of-compliance metering or obvious safety hazards at the customer-owned service entrance. Common problems include A-Base (see figure 1), bottom connected meters, 30 and 60 amp 1 & 2S meter sockets (see figure 2), as well as deteriorated insulation between the meter socket and weather head and/or service entrance wire.



Figure 1 – self-contained A-Base meter



Figure 2 – typical 60A S-Base meter

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The Company will not interpret the electrical code or inspect customer's wiring or equipment for compliance with the applicable codes. Questions concerning code interpretations should be referred to the local or state electrical inspector.

The Company will inspect for compliance with Company rules and will refuse or discontinue electric service if Company rules are not complied with or a hazardous condition exists.

Company crews setting meters or connecting new services test for infinite resistance at the meter socket load terminals. If this check indicates connected load at the load terminals, the meter will not be set. It is mandatory that the service disconnect switch be left open to avoid the indication of connected load at the meter base. COMPANY CREWS WILL NOT ENTER A BUILDING TO OPEN OR INSPECT THE SERVICE DISCONNECT SWITCH AND THE METER WILL NOT BE SET.

6-1.3 Continuity and Quality of Service

The Company will endeavor to, but does not guarantee, to furnish a continuous supply of electric energy and to maintain voltage and frequency within applicable IEEE code limits.

The Company will not be liable for interruptions in the service, phase failure or reversal, variations in the service characteristics, or for any loss or damage of any kind or character occasioned thereby, due to causes or conditions beyond the Company's control, and such causes or conditions shall be deemed to specifically include, but not be limited to, the following: acts or omissions of customers or third parties; operation of safety devices except when such operation is caused by the negligence of the Company, absence of an alternate supply of services; failure, malfunction, breakage, necessary repairs or inspection of machinery, facilities or equipment when the Company has carried on a program of maintenance consistent with the general practices prevailing in the industry; act of God; war; action of the elements; storm or flood; fire; riot; labor dispute or disturbances; or the exercise of authority or regulation by governmental or military authorities.

The customer shall be responsible for giving immediate notice to the Company of interruptions or variations in electric service so that appropriate corrective action can be taken.

The Company reserves the right to temporarily interrupt service for construction, repairs, emergency operations, shortages in power supply, safety and State or National emergencies and shall be under no liability with respect to any such interruption, curtailment or suspension.

All motors, appliances or equipment connected to the Company's system shall be designed, installed, and operated as to not cause interference to other customers' service equipment nor to handicap the Company in maintaining proper system conditions.

It shall be the responsibility of the customer to provide motor protection for undervoltage, overcurrent, short circuit, loss of a phase and phase reversal. Note that the NEC has required protection on all phases where overload relays are used, since 1965; for continuous duty motors; thus, providing single-phase protection. (NEC 430.36 and 430.37).

The voltage provided to the customer is intended to comply with the requirements of the Administrative Code (MI Rule 460.3702). This code allows occasional voltage transients, which may adversely affect the operation of certain sensitive equipment. It is the customer's responsibility to prevent undesirable operation of sensitive equipment caused by these transients.

6-1.4 Neutral Voltages

The system neutral may carry low voltage levels. This voltage creates no difficulty for most customers. If a customer experiences a problem due to this voltage, it is the customer's responsibility to eliminate the problem through proper grounding and bonding.

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6-1.5 Carrier Current

The Company reserves the right to use carrier frequency signals on its system for communication, system operation, and equipment control and shall not be held liable for potential damages. The customer should install suitable protective equipment if such frequencies might damage or interfere with their apparatus. The use by the customer of any part of the Company's distribution system for carrying foreign electric currents or for carrier current transmission, broadcasting, or control is forbidden. Customers using carrier current or any control frequency other than 60 hertz shall be required to install suitable equipment to prevent these frequencies from being imposed upon or entering the Company's distribution system.

6-1.6 AMI - Advanced Metering Infrastructure

The Company's meters are electronic in nature and communicate via radio frequency. In areas where communication is unreliable, the meter will be manually read.

If a customer attempts to block or shield the meter communications, such action will be considered 'tampering' and/or 'unauthorized use.' The MPSC defines 'unauthorized use' as theft, fraud, interference, or diversion of service. Attempts to block or shield will be addressed with an investigation, followed by corrective measures if appropriate. See Section 3-1.11 for the Theft of Service policy.

Customers have the right to 'opt out' of the AMI system and must contact Customer Service for the applicable forms.

6-1.7 Company Equipment on Customer Property

The Company shall have the right to install, inspect, and maintain Company equipment on the customer's property as necessary to furnish proper service without notice to the customer. All equipment is considered a Company facility unless granted to the customer in writing. The Company shall have the right to remove its equipment when discontinuing service. Company equipment includes, but is not limited to: poles, anchors, wires, transformers, junction boxes, meters, and protective and regulating equipment. If Company equipment on customer property serve other customers, the Company reserves the right to keep the Company owned equipment on the customer property.

In the event a customer discontinues service, any overhead primary lines that feed a single structure will be evaluated after a year and primary lines may be removed at the Company's discretion. Once removed, re-establishment of service to the structure will be considered as a new service.

The customer shall be responsible for damages and losses resulting from interference or tampering with such equipment caused or permitted by the customer. In the event that the Company equipment is interfered with or damaged, the Company may require the customer to change his wiring, at his own expense, to permit the installation of other Company equipment or to permit the relocation of Company equipment to avoid further interference or damage (Michigan Rule 460.3409 and 750.282).

6-1.8 Sealing of Equipment

Meters and all associated metering equipment, service termination boxes, wire raceways, and service entrance switches containing un-metered conductors are sealed by the Company. This equipment must be designed with provisions for seals or locks as specified by the Company.

Unauthorized removing of Company seals or meters is unlawful and may result in billing for the investigation and replacement of the seal, as well as criminal prosecution. AMI metering alerts the Company if a meter is removed or tilted.

Only Company personnel can pull electric meters. Electric meters are not designed or intended to be used as a switch to de-energize a facility. There are specific requirements for installing or removing electric meters due to the potential of severe injury. MIOSHA and NFPA 70E have specific requirements for installing and removing electric meters.

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The Company will de-energize the electrical feed, at no cost, to accommodate work on the service entrance equipment.

6-1.9 Line Extensions on Private Property

Extensions of the Company's distribution lines onto property of the customer to be served will be made in accordance with the Company's extension rules. These rules provide, among other things, that the Company will own and be responsible for the maintenance and operation of such lines and shall have the right of access at all reasonable times for construction, reconstruction, tree-trimming, maintenance, inspection, rebuilding, and operation of lines and equipment. The Company shall also be granted the right to extend its facilities to serve other customers from such lines. See Section C on the Company webpage for Tariff rules and regulations:

<https://www.uppco.com/residential/services-rates/#uppco-rates-and-tariff>.

Easement is required when crossing private property for the purpose of serving neighboring properties. The Company will prepare all necessary easements along the route selected. The customer requesting service shall be responsible for obtaining all signatures and all associated easement costs. In some cases, existing facilities are there by "prescriptive rights" (MI 15 year-Rule 600.5801) and unable to be modified without proper easement. As an example, an overhead line cannot be converted to and underground line if any easement is not in place and only prescriptive rights.

For customer requested line extensions, the following shall be provided at no expense to the Company:

1. The customer shall grant an easement satisfactory to the Company for the installation and maintenance (including truck access) of the electric facilities.
2. The easement as designated by the Company shall be cleared of trees and other obstructions.
3. The route of underground facilities shall be within 4" of finished grade to ensure proper installation.
4. Conductors located beneath pavement or other obstructions should be placed in conduit extending 3 feet beyond the obstruction. (NEC 300.5). Note the policy for underground services in Section 3-1.9.
5. Permanent survey markers, such as steel pipe or rod identifying property lines may be required by the Company before installing facilities and any other surveying that maybe required to supply service.

6-1.10 Line Extensions on Other Than Private Property

The Company shall obtain all necessary licenses and/or permits, including but not limited to, highway, railroad crossing, and wetland. The customer applying for service is responsible for associated permit, license and surveying fees.

If obstructions are placed on the right-of-way after the service is installed, additional costs incurred due to the obstruction will be billed to the customer if repairs or modifications to the service become necessary.

6-1.11 Overhead/Underground Conductor Clearances

Contact the Company prior to construction near or beneath overhead or underground power lines. State and Federal law mandate minimum clearances to which non-utility personnel must adhere. The customer may be responsible for costs associated with remedying clearance violations created by the customer.

6-1.12 Foreign Attachments on Company Poles

Attachments to Company-owned poles are not allowed. Exceptions are normal contractual users such as communication companies, other electric power utilities, and municipalities (Christmas lighting, etc.). Examples of unacceptable attachments are signs, posters, notices, fencing, birdhouses, clotheslines, satellite dishes, customer switchgear, customer electrical feeders, customer communication circuits, etc. Traffic control signs will be accepted, by contract, on Company-owned poles if there is no conflict with the use of the pole or safety issues.

Note: This includes political advertisements on utility poles.

6-1.13 Fault Current

It is necessary to consider available fault current levels when the customer/electrician is installing electrical service entrance equipment. Appendix B gives information on maximum expected fault current levels. A minimum of 22,000 amp short-circuit rated service entrance equipment is required for residential one- and two-family homes.

6-2 Company Policies – Utilization of Equipment

6-2.1 Motors - General

- All of the following motor equipment connected to the Company's system is subject to approval by the Company with respect to starting characteristics and frequency of starts:

Single-Phase Motors

120 Volt - 1 HP and Larger

240 Volt - 3 HP and Larger

Three-Phase Motors

10 HP and Larger

Single-Phase Air Conditioners over 2 Ton (may need soft start capacitors)

(excessive cycling - more than four times per hour - may cause problems).

- Motor installations including starting devices, shall be designed to have starting characteristics that will not cause an objectionable voltage drop or lighting flicker to other customers' service. Note that this also applies to infrequent motor starts or infrequent motor load swings. The Company is required to follow IEEE 1453-2015-Voltage fluctuation/flicker standard for the analysis of fluctuating installations on power systems.

The Company will install a power quality meter where there is suspected voltage flicker.

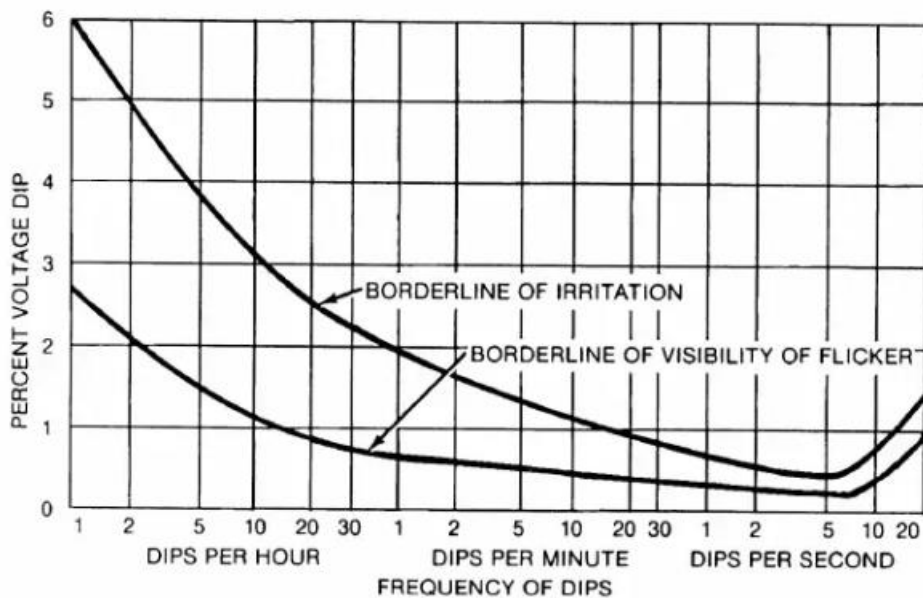


Figure A.1—Flicker tolerance curve from IEEE Std 141-1993/IEEE Std 519-1992

- Installations of motors used to drive equipment requiring a variable torque, such as compressors, reciprocating type pumps, sawmills, etc., shall be required to limit the variation of the motor current so it

will not interfere with service to other customers. The Company reserves the right to require the customer to provide, at their expense, equipment to control the fluctuations within limits prescribed by the Company. The maximum allowable variation of motor current for each specific installation may be obtained upon application to the Company.

4. All customer-owned equipment shall be protected from excessive current which may result from overload, undervoltage, single-phase operation of three-phase motors (loss of phase), etc., with fuses, thermal cutouts, overload relays, or other protective devices designed to protect the individual motor. Undervoltage release coils shall be installed on all motors which require starting compensators. Reverse-phase relays and circuit-breakers or their equivalent are required on all elevator installations and are recommended on crane or other installations where phase reversal may cause damage or injury.
5. It is recommended that single-phase motors be connected for 240 volt operation, where feasible, to reduce lighting flicker for both the user and other customers.
6. If the size or number of motors contemplated is such that it necessitates the installation of special Company equipment to prevent interference with proper service, either to the customer using the service or to other customers, service to such motors will be delivered under the special facilities clause of the Company extension rules.

6-2.2 Water Heating

1. Water heaters may be connected to 120-volt or 240-volt service. Water heaters shall be equipped with thermostatically-controlled non-inductive heating elements. The maximum allowable wattage of the element is 1650 watts at 120 volts or 5500 watts at 240 volts. Water heaters having dual elements shall have them connected or interlocked to limit the connected load to the above limits.
2. Non-storage, instant recovery water heaters with wattages above 5500 watts may cause service interference. Special facility charges may be necessary to correct this interference.

6-2.3 Electric Space Heating

1. Electric space heating equipment may be connected to the general service meter under the residential or commercial rate.
2. Permanently installed electric space heating designed to operate at 120 volts shall be limited to 1650 watts controlled by a single thermostat. Electric space heating designed to operate at 240 volts and above shall be limited to 5500 watts per element. Multiple elements installed in or as part of a unit exceeding 5500 watts shall be energized in stages not to exceed 5500 watts per stage and at time intervals of not less than three seconds between each stage.

6-2.4 Electric Vehicle Charging Stations

Before any electric vehicle charging station is connected, the company should be contacted to determine if any company facilities will require upgrading; and any changes in the customer's wiring and in the Company's facilities necessary to permit operation under safe conditions and without interference to the service of other customers shall be completed.

The Company facilities are designed to provide sufficient capacity for normal system loads and load growth. Electric vehicle charging stations can create demand in excess of what would be considered normal.

6-2.5 Lighting Systems

Lighting systems utilizing ballasts or transformers as part of the fixtures or as auxiliary equipment to the fixtures which are installed as the major lighting source for a building, space or area shall maintain not less than 90 percent lagging power factor for individual units or the entire lighting installation.

6-2.6 Electric Welders and Furnaces

Before any electric welder is connected, the company should be contacted to determine if any company facilities will require upgrading; and any changes in the customer's wiring and in the Company's facilities necessary to permit welder operation under safe conditions and without interference to the service of other customers shall be completed.

The Company facilities are designed to provide reasonably adequate voltage and sufficient capacity for normal system loads. If a welder creates voltage variations that exceed normal operating voltage limits, then these variations are not considered a violation of voltage codes (MI Rule 460.3702).

6-2.7 High-Frequency Apparatus

1. All wiring carrying high-frequency current used in connection with high-frequency apparatus shall be located as remotely as possible from the meter and wiring of the building. Motor generator sets supplying such apparatus shall be subject to the rules applying to motors. For the protection of meters supplying high-frequency apparatus, the Company may require the installation of an isolation transformer or suitable filters.
2. Equipment causing high-frequency current or harmonics must comply with IEEE Standard 519-Recommended practice and requirements for harmonic control in electric power systems.

6-2.8 Fire Protection Systems

See Appendix B for applicable code references. Options for Service from the Company:

- A. Source side tap in outside CT cabinet. CT cabinet cannot be near the main disconnect.
- B. Two separate services from the same transformer. One of these would be for the fire pump system. They cannot go to the same location on the building. This second service would be at a "special facilities" cost. This would involve at least two separate meters (main feed and the fire pump system).
- C. Customer runs two services, from the Company pad mounted transformer, if the Company has CT metering available in the pad mount (see Subsection 5-5).
- D. Separate transformer setting, just for the fire pump system. This would involve "special facilities" costs for the transformer, system, and service. This can be at a different voltage than the main feed.

6-3 State Regulatory Agencies

The Company will not interpret the electrical code. Questions concerning code interpretations should be referred to your local inspector's office, or you may contact your state electrical inspector at the address and phone number listed below:

Department of Licensing and Regulatory Affairs,
Bureau of Construction Codes, Electrical Division
P.O. Box 30254
Lansing, MI 48909
Phone: (517) 241-9320

For utility-related issues, please call the Company or the following state regulatory agency:

Michigan Public Service Commission
P.O. Box 30221
Lansing, MI 48909

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