

SUMMARY of Significant Changes

Austin Energy has revised the 2005 Austin Energy Design Criteria to update the information to agree with current codes and practices. The organization of the 2009 Design Criteria will remain the same as the 2005 version. The following is a list of some significant changes:

-Section 1.3.8: (Added info): In addition, AE may require that the initial installation allow for, and that the Customer maintain, provisions for providing electric service to the separate properties (with easements and such as determined by AE) in the event of a future cessation of operation as a unified development.

-Section 1.3.9: Single-Phase/Three-Phase Service – (Revised)

The Customer's main disconnect switch(es) shall be located on the load side (behind) and next to the AE meter(s) on the outside the building. However, where the Customer is the only Customer served from a transformer, the meter and disconnect may be located so that they are accessible from outside the Customer's building to AE personnel 24/7 by means of a lock box with an AE lock. The lock box and meter/disconnect locations shall be clearly visible from the transformer location. In addition, the Customer's main disconnect location shall also meet the COA Electrical Code Requirements Local Amendments which require that the customer's service disconnecting means be installed at a readily accessible location either outside of a building or structure or inside nearest the point of entrance of the service conductors and that the disconnecting means shall be accessible to the exterior of the building at all times and shall not be located above the first floor of a multi-level building.

Added new NOTE: Customer changes/upgrades to existing service entrance facilities on the Customer's side of the point of service (such as replacing the main disconnect switch) may require that the entire service entrance be brought up to current code requirements. Check with the COA Electric Inspection Section.

-Section 1.3.13: (Added info) EXPLANATION OF AE'S UNDERGROUND POLICY.

-Section 1.3.17: (New) Underground Only Service Areas (Non Network Areas)
Some areas or developments may have developer commitments to underground (where only underground is available) or community/city-imposed restrictions that obligate the Customer to request underground service from AE. The Customer must still meet the conditions and pay any additional costs required by AE in Sections 1.3.12 and 1.3.13 and this Design Criteria for underground service. Contact AE Design.

-Section 1.3.18: (New) Americans with Disabilities Act

Austin Energy complies with the ADA regarding the installation of new facilities. Also where existing AE facilities do comply with the ADA, AE will not modify or relocate these facilities such that they are not in compliance with the ADA.

-Section 1.4.3: Electric Service Requests – (Added Subsections) **1.4.3.1** Service Only Requests, **1.4.3.2** All Other Information, Cost, or Service Requests, and **1.4.3.3** Submittal of Customer Drawings Required with Electric Service Requests.

-Section 1.4.12: (New) Customer Demand Load Determination

The COA Electrical Inspection Section and AE will accept Customer load information calculated using the latest version of the NEC for sizing Customer-installed and -owned disconnects, breakers, fuses, and Customer-installed wiring and services installed on the Customer's side of the AE meter. Customer-installed service conductors that are ahead of the AE meter must be sized for the full amp rating of the first interrupting device associated with the AE meter (or the sum total of multiple first interrupting devices associated with multiple AE meters). The customer demand load submitted to AE on the ESPA form shall be the total undiversified connected demand load for each equipment item or load category.

-Sections 1.5.1.4 and 1.5.1.5: (New) Underground 216Y/125 Volt Residential and Commercial Service

– (Added) only copper conductors are acceptable for customer's service entrance conductors with a maximum wire size of 500 kcmil.

-Section 1.5.1.1 H: (Revised) Main Disconnect Switches. See Section 1.3.9.

-Section 1.5.2.2: Commercial Electric Service – (Added new Note 9 and 10) 750 kcmil is the maximum wire size allowed. For the purpose of sizing AE facilities, AE Design shall determine the maximum expected Customer demand load amps that will be seen by AE facilities from the Customer's total connected undiversified load information and business type as documented on the ESPA form. AE facilities will be sized by AE Design accordingly. The maximum demand load amp service available from AE is defined in Table 1.5.2.2.

-Section 1.5.2.3: (Revised) A maximum of 10 feet of service-drop conductors may pass over the roof of the structure being served, regardless of required height above roof and/or slope of roof.

EXCEPTION: A maximum of 10 feet of service-drop conductors may pass over roof of the building or structure to which the service-drop is not attached, regardless of required height above roof and/or slope of roof when the service drop meets all the following conditions:

-The building or structure is on the same piece of property and owned by the same Customer as the building being served to which the service-drop is attached (such as a garage or storage building).

-The voltage between the service-drop conductors does not exceed 300 volts.

-The minimum vertical clearance is a minimum of 3.5 feet.

-Section 1.5.2.4: Customer-installed Underground Services and Civil Work for AE Infrastructure.

(Added) No heated bends are permitted.

(Revised) Single-phase installations shall be 3-wire; three-phase installations shall be 4-wire. Conductor sizes shall conform to the NEC and approved by the COA Electrical Inspection Section. Minimum size service conductors for connection to AE facilities shall be #6 AWG copper or equivalent for commercial permanent services. **Maximum size service conductors for connection to AE facilities shall be 750 kcmil.**

-Section 1.5.2.5. B: Customer and AE Commercial Service Installation Responsibilities (Revised)

a. If the Customer-installed service lateral conductors are no larger than one 500 kcmil or two 4/0 AWG per phase, the Customer shall furnish, install, own, and maintain a **36-inch pull-box** (load bearing or nonbearing as specified by AE Design) at base of pole. (In some cases, an 18-inch service box may be allowed for 200 amp and smaller service entrances where there is no need to allow for load growth and where the Customer-installed service lateral conductors are no larger than one 1/0 AWG per phase) or If the Customer-installed service lateral conductors are larger than one 500 kcmil or two 4/0 AWG per phase, the Customer shall furnish, install, own, and maintain a **48-inch pull-box** (load bearing or nonbearing) at base of pole as specified by AE Design.

-Section 1.5.2.6: (New) AE single-phase padmount transformers can take a maximum of four conductors per leg/neutral. Three-phase padmount transformers up to 750 kVA can take a maximum of six conductors per phase/neutral. Three-phase padmount transformers from 1000 kVA up to 2500 kVA can take a maximum of ten conductors per phase/neutral. Only one circuit of Customer secondary service conductors can be installed per conduit.

-Section 1.5.2.10.B: (Revised) The residential and commercial services will both be subject to the respective conditions and requirements of this Design Criteria. All AE metering must be installed at the first floor or ground level (except as allowed in writing by AE Design). If metering is allowed above the first floor/ground level, it must be accessible by AE personnel from the ground level 24/7. The main disconnects for each metering room must be located at the ground floor level. (See Section 1.3.9) For more information, contact AE Design.

-Section 1.5.3.2: Available Residential Electric Service (Added)

[4]-750 kcmil is the maximum wire size allowed.

[5]-For the purpose of sizing AE facilities, AE Design shall determine the maximum expected Customer demand load amps that will be seen by AE facilities from the Customer's total connected undiversified load information and building size as documented on the ESPA form. AE facilities will be sized by AE Design accordingly. The maximum demand load amp services available from AE are defined in Table 1.5.2.2.

-Section 1.6.6 Streetlights in Commercial Areas IN Austin's City Limits Inside and Outside Austin Energy's Service Area (New)

Streetlights in commercial areas within the city limits shall be provided by the developer and in accordance with the illumination design provided by AE designers. The fees for commercial streetlighting shall include labor, materials, vehicles, equipment and associated costs of the project. The owner of the commercial development shall pay the entire cost of the installation. If the new commercial area is in another electric utility's service territory, as authorized by the Public Utility Commission of Texas, AE will coordinate installation, maintenance and energy charges with the electric service provider for that area. AE will develop a complete lighting installation plan for new commercial development with installation pursuant to design. The developer shall be responsible for the installation of the conduit, pull-boxes, and streetlighting foundations. AE will supply the foundations to the developer and will install the poles and heads (all included in the total cost to the developer). If the developer prefers streetlight poles other than what is normally installed, the developer and AE will collaborate on the type of poles. This additional cost will also be borne by the developer.

-Section 1.6.7 Streetlights in Commercial Areas OUTSIDE Austin's City Limits Inside Austin Energy's Service Area (New)

Streetlights in commercial areas outside the city limits shall be provided by the developer and in accordance with the illumination design provided by AE designers. The fees for commercial streetlighting shall include labor, materials, vehicles, equipment and associated costs. The owner of the commercial development shall pay the entire cost of the installation and monthly energy charges. AE will develop a complete lighting installation plan for new commercial developments and will coordinate with the developer as to the type of lighting to be installed. The developer shall be responsible for the installation of the conduit, pull-boxes, and streetlight foundations. AE will supply the foundations to the developer and will install the poles and heads (all included in the total cost to the developer). If the developer prefers streetlight poles other than what is normally installed the developer and AE will collaborate on the type of pole. This additional cost will also be borne by the developer.

-Section 1.7.1.4.A: Temporary Power Designations – (Revised) HBL (Home Builder) Loops shall be used exclusively for the construction, addition, or remodeling of single family or duplex family residences.

-Section 1.8.4 Customer's Main Disconnect (New)

The Customer's main disconnect switch(es) shall be located on the load side (behind) and next to the AE meter(s) on the outside the building. However, where the Customer is the only Customer served from a transformer, the meter and disconnect may be located so that they are accessible from outside the Customer's building by means of a lockbox with an AE lock. The lockbox location shall be clearly visible from the transformer location. In addition, the Customer's main

disconnect location shall also meet the COA Electrical Code Requirements Local Amendments which require that the customer's service disconnecting means be installed at a readily accessible location either outside of a building or structure or inside nearest the point of entrance of the service conductors and that the disconnecting means shall be accessible to the exterior of the building at all times and shall not be located above the first floor of a multi-level building. (See Section 1.3.9).

NOTE: Customer upgrades to existing service entrance facilities on the Customer's side of the point of service (such as replacing the main disconnect) may require that the entire service entrance be brought up to current COA code requirements. Please check with the COA Electric Inspection Section (see Section 1.3.9).

-Section 1.9.3.2.B: Mounting of Meter Sockets, Transockets, and Enclosures – (Added) Mounting equipment inside of a building, closet, or behind locked gates.

-Section 1.10.3 Permanent Clearances from AE Overhead Lines and Facilities (New Diagram).

-Section 1.10.4: (revised) Clearances from AE Padmounted Equipment and Distribution Table 1.10.4.

Vaults – (New) Note 4 added to Table 1.10.4 requiring that all padmount, vault, or niche equipment be installed on the customer's property, not in public R.O.W., and that all equipment/vaults shall be locked and accessible only to AE personnel.

-Section 1.10.6 Clearances for AE Facilities from Customer's Service Entrance Facilities (revised) Change from 10-foot minimum clearance to **5-foot** minimum clearance measured horizontally, from AE's facilities (poles and overhead lines other than the service drop) regardless of service size.

-Section 1.11.0 GLOSSARY (Revised)

Demand: Demand is a measure of electrical power magnitude, not total energy usage. Demand is used in two contexts in this Design Criteria – 1) metering demand which is the power used by the Customer averaged over a 15 minute time interval and 2) electrical demand which is the actual power flowing in the AE facilities. (These values will be determined by AE Design for the purposes of sizing AE facilities and may differ significantly from the Customer's **undiversified total connected load** which is the sum total of manufacturer's name plate/equipment watt or ampere ratings for all of the Customer's electrical load.)

Metering Demand is usually expressed in kilowatts (kW) and is the Customer's load registered by the AE demand meter.

Electrical Demand for AE design purposes is the *steady state* maximum load expressed in kilovolt-amperes (kVA) or in amperes depending upon how the specific AE electrical facilities in question are rated used to design and size AE facilities.

Peak Demand for AE design purposes is *instantaneous* peak electrical demand (also expressed in kilovolt-amperes or amperes) used to design and size AE facilities for Customer equipment having high short-term and/or intermittent demand load characteristics (such as experienced during motor starting or from electrical welding equipment).

ESPA: The Electric Service Planning Application is the document submitted by the Customer to Austin Energy that gives AE the specifics of the customer's request and (if applicable) the requirements of the Customer's total connected load associated with the Customer's request for electric service. (Necessary electric service request information that should be included in the ESPA includes the exact location of the property to be served, such as street address and lot and block number of subdivision, the service voltage, the equipment characteristics, the connected load including all equipment ratings, and the size of the service entrance equipment. In addition, the ESPA should include a complete set of customer drawings (see Section 1.4.3.3), including as a minimum a plot plan and a scaled elevation drawing for any structures that exceed a single story. The Customer must receive approval of the ESPA by AE before the COA Permit & License Section will issue the Customer an Electric Permit. A copy of the ESPA form is available at One-Stop-Shop, the COA Permit & License Section, or from AE Design (See all of Section 1.4.0).

Main Disconnect: A mechanical switching device used for connecting and disconnecting the Customer's electric equipment from the AE electric supply system. *The Customer's main disconnect switch(es)* shall be located on the load side (behind) and next to the AE meter(s) on the outside the building, or where the Customer is the only Customer served from a transformer, the meter and disconnect may be located so that they are accessible from outside the Customer's building by means of a lock box to AE specifications and with an AE lock. The lock box location shall be clearly visible from the transformer location. In addition, the Customer's main disconnect location shall also meet the COA Electrical Code Requirements Local Amendments which require that the customer's service disconnecting means be installed at a readily accessible location either outside of a building or structure or inside nearest the point of entrance of the service conductors and that the disconnecting means shall be accessible to the exterior of the building at all times and shall not be located above the first floor of a multi-level building. (See Section 1.3.9)

-Section 1.12.1.N: Requirements for Network Transformer Vaults – (Added) The transformer/equipment landing area shall be an extension of the vault floor.

-Section 1.14.2: Electric Service Planning Application (ESPA) – (Deleted) ESPA forms removed to allow revisions as needed. (The ESPA form is available at One-Stop-Shop, the COA Permit & License Section, and from AE Design.).

-Section 1.14.4(New) Metering to Measure Solar Energy Credits – This section details the AE metering requirements solar energy credit metering.

-Section 1.15.0: Appendix – Exhibits

(Deleted) – Figures 1-28, 1-29, 1-30, 1-31, 1-32, and 1-36 showing a typical meter pedestal.

(Added) – Figure 1-36 showing OSHA/Texas Safety Code Working Clearances

(Added) – Figures 1-39 a, 1-39 b, 1-39 c, and 1-39 d showing acceptable solar energy credit metering arrangements for various standard AE secondary service voltages.