

GENERAL INFORMATION

1.01 PURPOSE

The purpose of this manual is to supply essential information to customers, employees, architects, engineers, contractors, and others concerned with electrical installations in the Omaha Public Power District's service area, which will hereafter be referred to as OPPD in this manual. OPPD's goal is to provide safe, reliable, energy services to our customers, in a timely manner.

This manual will be revised from time to time to include industry improvements or other necessary changes. New copies of the manual may be obtained by contacting Customer Sales & Services Division, 636-3521, Metering Services Department, 552-5934, or contacting any of OPPD's area offices.

For the purpose of opening an account for electric service with OPPD, the term customer is to be considered as a homeowner, a building owner, or a tenant, who will be financially responsible for the bill payment.

For the purpose of construction or wiring of a building, the term customer is to be considered as a homeowner, a building owner, his construction contractor, his electrician, his engineer, or his agent, acting on the owner's behalf, to coordinate with OPPD, for providing electric service.

1.02 CONSULT WITH OPPD

To avoid misunderstanding and unnecessary expenses, customers, their contractors, architects, and engineers should consult with OPPD at its nearest office during the planning stage about electric service availability and OPPD's applicable rates and rules. Early notification will prevent unnecessary delays and expense.

To obtain the proper department, the following information will serve as a guide: Contact any of OPPD's offices for specific information about electric service.

1. For Residential, or small General Service point of entrance, and meter location, call OPPD's Electrical Service Designer (ESD) at one of OPPD's Customer Services Centers. Telephone numbers for the four ESD offices are:

Papillion	552-5330	
Elkhorn	552-5830	
Louisville	552-5521	local: 234-2455
Syracuse	552-4030	local: 269-2341

For larger General Service customers, (typically larger than 1000 kVA), call the Account Executives at 636-3536.

Outside the metropolitan Omaha area, call OPPD's area office:

Blair 426-4151

Humboldt 862-2865

North Bend 652-3434

Tecumseh 335-3020

Inside the metropolitan Omaha area, for help with an electric account call:
OPPD Customer Care Services department, 536-4155.

2. To report the rewiring of existing residences for additional major appliances, such as ranges, water heaters, clothes dryers, space heaters, air-conditioning, etc., call the Customer Services Center or OPPD's area office. The rewire is the customer's responsibility, but the reporting will give OPPD an opportunity to ensure its distribution equipment is adequate to service the additional load. (See Section 1.09.)
3. For questions involving residential space conditioning in the Omaha area, call OPPD's Energy Advisor, 636-3850.
4. For questions involving electric service in mobile home parks, call the ESD's, at a Customer Services Center, or OPPD's area office.
5. For general questions involving metering, or metering wiring methods, call Metering Services Department, 552-5934, or OPPD's area office. Questions about a specific project should be asked of the ESD or Account Executive handling the project.

Information in this manual is intended to cover typical installations. OPPD should be consulted for special cases and conditions.

1.03 GENERAL POLICY

1. The customer provides the meter support except:
 - A. In Mobile Home Parks (See Chapter 9).
 - B. Farm Irrigation Service taken at the road.
 - C. Metering on a padmount transformer.

Underground single and three-phase services, requiring transformer-rated (CT) metering, with the instrument transformers (CT's & PT's) located in the padmounted transformer. The meter will be located on the padmounted transformer. With the metering in the padmounted transformer, the transformer can only serve one customer. For both Residential and General Service customers, with the metering in the transformer, the service wires are installed and maintained by the customer, since OPPD's responsibility does not extend on the load side (down-stream) of the meter.

See Section 7.01 for Residential accounts. See Section 8.08 for General Service accounts.

2. The customer is responsible for all wiring and equipment on the load side of the meter. For responsibility for wiring ahead of the meter, see:

Overhead services-Residential & General Service	Chapter 6
Underground services - Residential	Chapter 7
Underground services - General Service	Chapter 8
Downtown Omaha Network service	Chapter 12

3. The customer is responsible for supplying Residential and General Service meter sockets, both single phase and three phase, for loads up to 320 amps. General Service meter sockets must have a lever by-pass.
4. Loads which OPPD determines have a demand of over 320 amperes, will require current transformer metering.
5. The use of "T" conduit conduit bodies in the service wire conduit ahead of the metering is prohibited.

1.04 CODES AND RULES

All Customer wiring installations must comply with OPPD's Electric Service Rules and other applicable codes which may include NEC, NESC, NFPA, and any local ordinances. Some OPPD requirements may be more restrictive than applicable codes.

1.05 INSPECTIONS

State laws require that prior to furnishing electrical service OPPD must receive an authorized electrical inspector's certificate of approval.

OPPD will refuse to connect services that do not satisfy applicable codes, or may be dangerous to persons or property. OPPD will disconnect services upon receipt of written notification from the inspecting authority.

1.06 CONTINUITY OF SERVICE

OPPD's goal is to provide continuous electric service, restore service interruptions promptly, to maintain voltages and frequencies within industry standards, and to maintain its facilities with minimum inconvenience to the customer. However, OPPD cannot guarantee to fulfill these goals at all times.

1.07 FREQUENCY AND SERVICE OPTIONS AVAILABLE

All electric service is 60 Hertz, alternating current. OPPD provides each building or structure with only one service voltage. The service voltage provided is based on the customer's need, and OPPD's available service voltages. The local inspecting authority and OPPD must, specifically approve any exceptions to the "one-building,

one-service” rule. The exceptions must also conform to those listed in Chapter 3, Section 3.02.

Standard service voltages provided by OPPD are listed below. Not every voltage is available at every location.

Single-Phase

- A. Single-phase, 120 volt, 2-wire, with grounded neutral conductor. (30-amp service entrance maximum.) Available only from an existing 120/240 volt, single-phase, 3-wire or from a 120/208-volt, three-phase, 4-wire system. See drawing 1.07.1.
- B. Single-phase, 120/240 volt, 3-wire, with grounded neutral conductor. Service entrance maximum: the maximum amp rating of a 167 kVA single-phase pad-mounted transformer, or of a 100 kVA single-phase overhead transformer. See drawings 1.07.1 and 1.07.2.
- C. Single-phase, 120/208 volt, 3-wire, with grounded neutral conductor (200-amp service entrance maximum, and available only from a 120/208 volt, 4-wire system). See drawing 1.07.1.
- D. Single-phase, 240/480 volt, 3-wire, (200-amp service entrance maximum, and available from an overhead, or a padmounted transformer). See drawing 1.07.1.

Three-Phase, Wye

- E. Three-phase, 120/208 volt, 4-wire, with grounded neutral conductor from a padmounted transformer. (The maximum amp rating is limited to that of no more than 6 sets of 750 KCMIL cable, the maximum that the padmounted transformer will accommodate for padmounts up to 1000 kVA). The maximum rating for overhead service is 225 kVA (3-75 kVA overhead transformers.) See drawing 1.07.3.
- F. Three-phase, 277/480 volt, 4-wire, with grounded neutral conductor from a padmounted transformer. Service entrance maximum: the maximum amp rating is limited to that of no more than 6 sets of 750 KCMIL cable, the maximum which the padmounted transformer will accommodate, for padmounts up to 1000 kVA. Padmount transformers of 1500 kVA and above will take 8 sets. The smallest padmounted transformer available is a 150 kVA. The maximum rating for overhead service is 225 kVA (3-75 kVA overhead transformers). The smallest overhead bank available is 150 kVA, (3-50 kVA transformers). See drawing 1.07.3.

Three-Phase, Closed Delta

- G. Three-phase, 240 volt, 3-wire, with equipment ground, Maximum amp rating of 3-75 kVA overhead transformers, from an overhead transformer bank. See drawings 1.07.4 and 1.07.5.

- H. Three-phase, 120/240/240 volt, 4-wire, with grounded neutral conductor. The midpoint of one secondary winding is grounded. The maximum rating for overhead service is 225 kVA (3-75 kVA overhead transformers). Available only from an overhead transformer bank fed from an overhead system.) See drawing 1.07.6.
- I. Three-phase, 480 volt, 3-wire, with equipment ground, from a padmounted transformer. The maximum amp rating is limited to that of no more than 6 sets of 750 KCMIL cable, the maximum which the padmounted transformer will accommodate, for padmounts up to 1000 kVA. Padmounts of 1500 kVA and above will take 8 sets. The smallest padmounted transformer available is a 150 kVA. Not for new construction.

Or three-phase, 480 volt, 3-wire, with equipment ground, from an overhead transformer bank. The maximum amp rating is that of 3-75 kVA overhead transformers, fed from an overhead primary system. See drawings 1.07.4 and 1.07.5. Not for new construction.

Three-Phase, Open Delta

- J. Three-phase, 240 volt, 3-wire, with equipment ground, (amp rating of 2-50 kVA overhead transformers service entrance maximum), from a two-phase overhead transformer bank fed from an overhead primary system. Due to OPPD System limitations, new services of this type will be evaluated for acceptability on a case-by-case basis. See drawing 1.07.7.
- K. Three-phase, 120/240/240 volt, 4-wire, with grounded neutral conductor. The midpoint of one secondary winding is grounded. The maximum rating for overhead service is 100 kVA (2-50 kVA overhead transformers). Available only from a two-phase overhead transformer bank fed from an overhead primary system.) See drawing 1.07.8.
- L. Three-phase, 480V, 3-wire served from an overhead or padmounted transformer bank. The maximum amp rating of 2-50 kVA overhead transformers, fed from an overhead primary system, or from a pair of 50 kVA padmounted transformers fed from two-phase underground primary. See drawing 1.07.7. Not for new construction.
- M. Network Service: This service is available in the downtown Omaha area only from existing OPPD network facilities. See Chapter 12 for services available, and service requirements.

Other Services

- N. Pulse Metering: OPPD can, at owner's expense, provide meter pulses to the customer. Contact OPPD Account Executives in the Customer Sales & Services Division at 636-3521, or area ESD's, for more information.
- O. 6-wire Service: This service-totalized metering is for a combination of

120/240V single-phase 3-wire and 240V three-phase 3-wire Delta. It is limited to maintenance of existing 6-wire customers only. Neither additional 6-wire services, nor upgrades of existing 6-wire services will be made. See drawing 1.07.9. Not for new construction.

- P. 5-wire Service: Service eliminated. See drawing 1.07.9. Not for new construction.
- Q. Two circuit totalized for three-phase, 3-wire or three-phase, 4-wire only. Either 120/208, 277/480, 240, or 480 volts. See drawings 1.07.10 and 1.07.11.

R. Primary Metering:

Service may be furnished to Customers at the existing primary distribution voltages of 2400, 4160, 8000, or 13,800 or available transmission voltage. OPPD approval is required for each installation. The customer should contact the OPPD Account Executives in the Customer Sales & Services Division at 636-3521 or OPPD's ESD's, for more information. (See OPPD's Rate 462). See drawings 1.07.12 and 1.07.13. See section 1.08.

1.08 HIGHER VOLTAGES

The customer should consult with OPPD before planning any installation for voltages over 480 volts.

1.09 LOAD ADDITIONS

The Customer shall give OPPD reasonable notice of substantial load increase (permanent or temporary). Increases in load may require extensive changes to OPPD's system, and this would take time to complete. Projects should be discussed with OPPD well in advance to provide ample time to upgrade OPPD equipment. Customers who fail to notify OPPD may be charged for the replacement cost of damaged OPPD equipment.

Design

An OPPD ESD or AE (for General Service accounts over 1000 kVA), should be notified for new service, or changes to an existing service in advance of the date by which service is required. (See Section 1.02 for telephone numbers.) This will permit OPPD to plan and schedule any required work on OPPD's distribution system, allowing ample time for material delivery, and construction of OPPD facilities, in order to provide service by the date required by the customer.

1.10 SERVICE CONNECTIONS

OPPD will make all service connections to its electric distribution system. Connection to, or alteration of, OPPD's electric service or other equipment by other than qualified employees of OPPD, or its authorized agents, is prohibited.

Responsibility For Extensions

OPPD constructs, owns, and maintains all extensions of its distribution system and makes all overhead service drop extensions and connections, as well as underground service lateral extensions and connections for single-family, duplex, or a three-plex residential building.

All underground multi-unit Residential, (4 units or more), service laterals are installed, owned, and maintained by the customer. An exception where OPPD would install, own, and maintain the underground service lateral conductors for a multi-unit residential building, is for a townhouse building with firewalls, (approved by the local inspecting authority), between each pair of units. OPPD would then run an underground service lateral to a dual socket for each pair of units. See section 4.03.

General Service underground service lateral cables, conduits, and risers, are installed, owned and maintained by the customer. OPPD terminates the customer's General Service underground service lateral conductors in OPPD's serving equipment as required. The customer terminates his conductors at the metering equipment, except for network service. See Chapter 12 for network service.

1.11 CUSTOMER ATTACHMENTS PROHIBITED

OPPD prohibits unauthorized attachment of wires, guys, signs, clotheslines, antennas, fences, etc. to its poles, pedestals, pad-mounted transformers or other structures.

There is to be no customer-owned area lights, equipment, or conductors attached to or installed on OPPD poles. Any pre-existing customer attachments will normally be removed from existing poles if OPPD is required to replace an existing pole or equipment due to maintenance or because of a service upgrade. Yard or for-sale signs nailed to OPPD poles can be a hazard to OPPD personnel while climbing the poles.

Banner attachments to OPPD poles may be requested by a quasi-governmental body (such as a neighborhood association, or a local group of businesses) if the attachments have been pre-approved by OPPD engineers. OPPD engineers will also need to determine that OPPD poles have sufficient strength to withstand the wind loading, as well as the mounting height of the attachment.

1.12 RESALE OF ENERGY

All energy sold shall be for the Customer's sole use, except as allowed for in OPPD's service regulation C-10.

1.13 SALE OF OPPD PROPERTY

OPPD equipment will normally not be sold to customers by OPPD.

1.14 DIGGERS HOTLINE

State law requires that all persons, prior to digging any hole or trench, should contact the "Diggers Hotline" number - 811. This should be done a minimum of 48 hours, (excluding Saturdays, Sundays and Holidays) prior to actual need to arrange for location of underground utility cables and equipment. Actual locating of the cables and equipment will then be done by each utility. General Service or Residential customers must make separate arrangements for location of their non-utility-owned underground facilities situated upon their own property.

1.15 OPENING A NEW SERVICE ACCOUNT

Application for a new electric service account or changes to an existing service account shall be made in advance of the date by which service is required. This may be done by calling OPPD's Customer Care Services department in the Omaha area, or outside the Omaha metropolitan area, at an OPPD Area office. (See Section 1.02 for telephone numbers.)