

# 2008-2009 Electric & Gas Service Requirements (Greenbook) OVERVIEW

## INTRODUCTION

In an effort to simplify standards and manual content, the 2008-2009 edition of the *Electric and Gas Service Requirements (Greenbook)* was reviewed and revised in its entirety by the Greenbook Committee in 2007. As a result, major revisions were made throughout the *Greenbook*. These changes include using simplified language, eliminating duplicated verbiage, and rearranging/combining the sections to ensure that the updated manual is more user friendly. This document lists the major or noteworthy changes and revisions to the 2008-2009 *Greenbook*. Users can reference this information to see the changes to the section of the *Greenbook* to which they are referring at a glance. Edits that are either editorial or grammatical in nature are **not** noted here.

## MAJOR CONTENT CHANGES

### ENGINEERING DOCUMENTS

**NOTE:** Users can find the most current versions of PG&E's engineering documents online (electronically) at [www.pge.com/greenbook](http://www.pge.com/greenbook)

The 2008-2009 edition of the *Greenbook* includes the engineering documents that are required to perform the work mandated by this manual. The requirements for installing gas and/or electric service facilities are specified in the engineering documents that are in effect **on the date that PG&E approves the service design**. Typically, that will be when PG&E provides the customer with a confirmation of gas and/or electric service.

### Section 1–General

The significant changes made in Section 1 are listed in the bulleted items below.

- **Up Front:** Placed the **Safety Alert** language in front of the section, reiterating the dangers of physical contact with either overhead or underground electric lines or equipment, as well as physical contact with natural gas lines, when tools such as backhoes are used improperly. The improper use of tools can cause explosions. This updated language also reminds applicants of the importance of contacting the Underground Service Alert (USA) organization when planning any underground work.
- **Subsection 1.3, “Application for Service”** Specifies that conditions for permits or approval also must comply with environmental requirements.

## 2008-2009 Electric & Gas Service Requirements (Greenbook) OVERVIEW

- **Subsection 1.4, “Changes in Requirements”** Specifies that applicants who have not initiated construction within 12 months of PG&E’s initial approval of their plan/s must request another review and obtain final approval of their design before performing any work.
- **Subsection 1.6.3, “Installing Transformers”** States that applicant’s must not install water sprinklers on transformer installations on their premises to cool transformers. Using water sprinklers causes safety and transformer-reliability issues.

### Section 2–Gas Service

- Combined former Section 2, “Gas Service: General,” Section 3, “Gas Service: Residential and Small Commercial,” and Section 4, “Gas Service: Commercial and Industrial,” into this new Section 2. This new section covers all aspects of gas metering.
- Changes to this section include providing pictures of typical gas meter sets like the AC-250 gas meter, the AL-425 or AC-630 gas meter, the AL-800 gas meter, and the AL-1000 gas meter.
- Changes to this section include the addition of new gas-meter set drawings such as those provided in Figure 2-17, “Gas Meter Connection Using a 5M or 7M Rotary Gas Meter,” on Page 2-28; Figure 2-19, “Gas Meter Connection Using a 16M Rotary Gas Meter,” on Page 2-30, Figure 2-21, “Gas Regulator Vent Spatial Clearance Requirement #1,” on Page 2-32, and Figure 2-23, “Dimensions for Typical, Residential, Multimeter Installations,” on Page 2-34.

### Section 3–Electric Service: Underground

- **Subsection 3.2.1, “Safety Reminder”** Reminds applicants to call Underground Service Alert (USA) at 811 to request that member companies locate and mark their underground facilities.
- **Subsection 3.3.3, “Installing Conduit for Underground Service”** The former title of this section was “Conduit for Underground Service.” This revision places emphasis on the information found in the “Note” after the section title. This note specifies that PG&E will *not* install supply cables in conduits that are located beneath any building or structure when those conduits do not terminate on or within that building or structure, but are intended to supply another building.
- **Subsection 3.3.4, “Trenching Work”** Formerly titled “Mandrels.”
- **Subsection 3.3.6, “Selecting Backfill”** Formerly titled “Service-Termination Facility.”

## 2008-2009 Electric & Gas Service Requirements (Greenbook) OVERVIEW

- **Subsection 3.3.7, “Providing Drainage From the Conduit System”**  
Adds a last paragraph saying that any other means of discharging water from the conduit system requires PG&E’s approval.

### Section 4—Electric Service: Overhead

There are no significant revisions to this section.

### Section 5—Electric Metering: General

- **Subsection 5.2.1, “Applicant Responsibilities”** Specifies the serving voltages and panel sizes that require phone lines.
- **Subsection 5.3.4, “Meter Rooms”** Deletes the text saying that PG&E will not accept keys belonging to applicants.
- **Subsection 5.4, “Meter Clearances, Enclosures, and Protection”**  
Changes to information found in the paragraphs under this subsection include:
  - ▶ Specifying a maximum meter-mounting height of 75 inches when metering is installed outdoors.
  - ▶ Specifying the same maximum meter height of 75 inches, but allowing for a minimum height of 36 inches, when meters are enclosed in a cabinet.
  - ▶ Stating that for switchboard types with current transformer (CT) compartments, the maximum meter height is 72 ½ inches; however, for individual, field-mounted, service-termination and meter-panel installations, the meter-mounting height is 66 inches. See Figure 6-2, “Typical Underground Service-Termination Enclosure, Combination Meter-Socket Panel (Residential, 0 Through 225 Amperes),” on Page 6-5, and Figure 6-3, “Typical Service-Termination Enclosure, Combination Meter-Socket Panel for a Class 320 Meter (Residential/Commercial, 120/240-Volt, 226-Ampere Through 320-Ampere Service),” on Page 6-6.
- **Subsection 5.4.3, “Meter Height and Working Space”** Specifies that concrete pads and platforms must extend a minimum of 48 inches from the front of the panel of switchboard.
- **Subsection 5.5.3, “Locking Provisions”** Specifies that applicants must use a permanent fixture to seal or lock the main service switches or breakers. Also, the locking or sealing mechanism must be made of rigid metal.
- **Subsection 5.7.1, “Main Service Disconnect”** Added a sentence on the last paragraph stating that PG&E prefers applicants to have provisions for individual disconnects when they use switchboards with multimeter installations.

## 2008-2009 Electric & Gas Service Requirements (Greenbook) OVERVIEW

### Section 6–Electric Metering: Residential

There are no significant revisions to this section.

### Section 7–Electric Metering: Commercial and Industrial

**Subsection 7.2.4, “Services, 0 Through 225 Amperes, Single Applicant, Overhead and Underground”** Specifies that the applicant must install a rigid steel conduit between the meter and the metering transformers. This is when remote metering is effected.

### Section 8–Electric Metering: Direct Access

Deleted Section 8. Referenced the Direct Access Standards For Metering And Meter Data (DASMMD) in California.

### Section 9–Electric Metering: Components

- **Section 9-14, “Underground Service-Termination Pull Box”**  
Revises the condition for accepting wall-mounted cables and termination enclosures to read 401 through 2,500 amperes. This figure was incorrectly labeled in the 2007 edition of the *Greenbook*, where it stated **400** through 2,500 amperes.
- **Table 9-4, “Minimum Switchboard (Floor-Standing) Pull-Section Dimensions: Over 600 Amperes, Single-Phase Service, 100% Rated and Commercial/Industrial, Three-Phase Service”** Adds a new row at the top of the table providing the service rating for 321 through 400 amps.

### Section 10–Electric Switchboards: 0 Through 600 Volts

- Subsection 10.2, “General Requirements” Specifies that the applicant must install a rigid steel conduit between the meter and the metering transformers.
- **Subsection 10.3.3, “Requirements for All Switchboard Service Sections”** Specifies that all switchboards must meet the design and tests conditions of Underwriters Laboratories (UL) document UL891, “Standard for Switchboards.” Removes the former requirement that ventilation openings in covers and doors with provisions for utility seals be protected by a rigid barrier.
- **Figure 10-15, “Switchboard Pull Section”** Shows in the Front View (Back Entry) specifically where PG&E terminates the service cables.

## 2008-2009 Electric & Gas Service Requirements (Greenbook) OVERVIEW

### Section 11—Electric Switchboards: 601 Volts Through 25,000 Volts and Primary Services

- **Subsection 11.2.D** The last paragraph in this subsection adds the requirement that when applicants must install more than one switchboard, they also must install a separate service section. This subsection also states that applicants must ensure that the service section is separated completely (i.e. barriered) from other service sections, pull sections, or service switches and disconnects.
- **Subsection 11.3.A** Adds the second sentence which says that the voltage disconnect switch must be visible when the outer door of the switchboard is opened.
- **Subsection 11.3.C** Adds the requirement to provide individual pulling eyes above each of the current transformer (CT) positions to aid CT lifting.
- **Subsection 11.3.H** Reminds the applicant to ensure that the ground bus is located in front of the panel to provide better accessibility for any work to be performed.
- **Subsection 11.4.J** Adds the last sentence, which reminds applicants to maintain an 8-foot clearance area in front of all access doors.
- **Subsection 11.4.K** Advises applicants to use the neutral lug provided on the PT section to terminate the neutral circuit that is connected to the ground bus section on the CT compartment.
- **Subsection 11.3.O** Provides an alternative that allows applicants to mount the meter panel in front of the CT termination compartment if, when the meter panel is open, the compartment is isolated fully by a removable or hinged barrier. This barrier must be sealable using stud and wing assemblies.