



Gas and Electric Meter Changes and Removals

Summary

This procedure describes changing, removing, handling, and shipping the following meters:

- Gas meters that are less than or equal to 1,000 cubic feet per hour (cfh) at pressures less than or equal to 2 pounds-force per square inch gauge (psig).
- Single-phase electric meters.

Level of Use: Informational Use

Target Audience

Managers, field services supervisors, and field service representatives who change or remove gas and electric meters.

Safety

The potential hazards associated with changing or removing gas meters include, but are not limited to, the following situations:

- Blowing gas while bleeding meter or clearing service.
- Energized meter sets.
- Static arc when bleeding meters.
- Ergonomically awkward working positions.
- Access issues resulting from overgrown or unmaintained vegetation.
- Unconfined or unrestrained animals on a customer premise.

Hazards associated with electric meter removal or changing include, but are not limited to, the following situations:

- Electric flash.
- Cut risk from broken meters.
- Unconfined or unrestrained animals on a customer premise

Use caution when entering a customer premise and always check for the following conditions:

- Tripping hazards.
 - Uneven ground.
 - Other conditions that create the potential for injury.
-



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Before You Start Personnel who perform inspections or maintenance in accordance with this procedure must work under the direction of qualified personnel or receive training from the Gas Service School to do such work.

Personal protective equipment (PPE) required to perform tasks described in this procedure include the following items:

- Kneeling pad or knee pads
- Gloves
- Eye protection

Personnel performing work described in this procedure must use only Company-approved tools. Tools and equipment required to perform this procedure include, but are not limited to, the following items:

- *Grunsky* quick change apparatus
- Crescent wrench (12")
- Pipe wrenches [2 (minimum 14")]
- Manometer for gas pressure under 12"
- Gas pressure test plug
- Company-approved 2 psig pressure gauge
- Leak detection compound
- Grease for meter threads
- Non-contact voltage tester
- SmartMeter (SM) gas module "Programmer"



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Procedure Steps

1 Jobsite Safety Checks

- 1.1 Upon arrival at the work location, complete a jobsite tailboard. Follow the instructions below to complete the tailboard:
 1. If the customer is present, advise the customer of the purpose of the service visit and obtain permission to change the gas meter.
 2. If the customer is not present, refer to Section 3, “Cannot Complete Gas Meter Change – Cannot Gain Admittance / Cannot Get In (CGI).”
 3. Review the work tasks and establish a plan. Follow the steps below to review the tasks and establish a plan:
 - a. Survey the surroundings and identify potential site hazards. Examples of site hazard conditions appear below:



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1.1 (continued)

- (1) **Work location and traffic:** If the job site is subject to vehicular traffic, provide work area protection devices such as cones, barricades, and warning signs.

If the meter set is subject to vehicular traffic, ensure necessary meter guards are installed. If meter guards need to be installed, create a corrective notification to install them.

- (2) **Sources of ignition:** Look for potential sources of ignition. **Do not carry or possess electronic devices** (for example, cell phones) with you while you are bleeding or removing equipment unless the electronic device is rated as suitable for use in Class I, Division 1, Group D hazardous area by Underwriters Laboratory.
 - (3) **Gas migration considerations:** Assess the immediate vicinity of the meter and look for locations where escaping gas could migrate or accumulate when bleeding or removing equipment. Be aware of air intake and exhaust vents that are near the meter location. Be aware of open windows and overhangs.
 - (4) **Test for voltage:** Inspect the meter set with a non-contact voltage tester to determine if voltage is present. Electricity may be present if the customer's appliances are improperly grounded or damaged.
- b. Take steps to mitigate the hazards. Know and communicate emergency procedures in the event of an incident.
 - c. If the hazards cannot be eliminated or mitigated to allow the work to be performed safely, notify the supervisor (and customer) of the situation.
 - (1) Do not attempt to change the meter until all hazards have been eliminated.

2 Gas Meter Changes and Removals- Gas Found on

NOTE

When changing a gas meter, the quick change apparatus must be the first option.



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- 2.1 When the gas is found on for a gas meter change or removal, field personnel must perform the following steps:
1. Verify that the gas meter badge number to be changed matches the field order (FO).
 2. Using the programmer, verify that the SM gas module number matches the FO.
 3. Verify that the module read matches the gas meter index read; and check that the module programming is correct.
 4. When a mismatch is identified between the FO and the on-site information, enter the as-found conditions in the FO remarks and contact the applicable supervisor and the SM gas endpoints hotline (**925-459-8120**).
 - a. The SM gas endpoints hotline is an available resource during normal business hours to report problems and answer questions related to gas SM module installation and maintenance.
 - b. Leave relevant information if not available and an SM representative will respond.
 5. If the customer is present, advise the customer of the purpose of the service visit and obtain permission to change the gas meter.
 6. Inspect the gas riser for structural integrity. If the riser is pitted or likely to develop a leak if maintenance is performed at the meter set, do not attempt to change the meter. If this situation exists, perform the following alphabetical steps. Otherwise, proceed to Step 7.
 - a. Issue an order through dispatch operations personnel at the resource management center to have gas maintenance and construction (M&C) personnel correct the situation.
 - b. Complete the FO as "Can't Get In" (CGI), and note the reason in remarks.
 - c. Leave a Service Report form with the customer explaining the situation.
 - d. If the riser is found to be leaking, contact the call center to get a case number and advise dispatch operations personnel that a gas M&C crew is needed to make repairs.
 - e. Stand by onsite until the crew arrives.
 - f. Leave the customer a Service Report form explaining the situation with a case number provided.
 7. Remove the old gas meter and attach a completed meter removal tag.



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2.1 (continued)

8. Turn off the SM module installed on the old gas meter using the programmer.
9. Upgrade the gas meter set to Company standards, such as installing a useable tee (if appropriate) and verifying the set is properly insulated. Refer to Numbered Document J-12, Hard Case Meter Installation and Numbered Document J-14.1, Curb Meter Installations.
10. Verify gas pressure by inspecting regulator marking tag.
11. Inspect and change the regulator as required in Utility Procedure TD-6436P-28, "Servicing Gas Regulators and Determining Gas Pressures."
12. Inspect gas meter set components and piping for corrosion, in particular air/soil transitions and atmospheric corrosion. If necessary corrections are required, complete the applicable step(s) in the following bulleted list:
 - If there is surface rust or oxidized metal and the original pipe wall thickness has not diminished, re-coat (paint or wrap) the affected parts.
 - If there is severe rust with scaling, pitting, or blistering and the integrity of the metal is compromised or the original pipe wall thickness has diminished, replace and coat (paint or wrap) all affected parts.
13. Install a new gas meter.
14. Turn on and program the SM module installed on the new gas meter using the programmer.
15. Verify that the meter registers a small flow and bleed an appropriate amount for that meter. Refer to Table 1, "Small Flow Time Test Requirements."

Table 1. Small Flow Time Test Requirements

Test Hand Dial Size (CFH)	Minimum Observation Time After Gears are Engaged (seconds)
1/4	10
1/2	15
1	20

16. Determine gas pressure as outlined in Utility Procedure TD-6436P-28, "Servicing Gas Regulators and Determining Gas Pressures."



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2.1 (continued)

17. Soap test the new gas meter and all adjacent meter set connections.
18. When the quick change apparatus is not used, follow the streamlined gas turn on procedure as outlined in Utility Procedure TD-6435P-02, "Establishing Gas Service." Otherwise, proceed to Step 19.
19. Leave a Service Report form with the customer with the appropriate information provided.
20. Complete the FO.

NOTE

If liquid is suspected inside a removed meter, the meter may be contaminated with polychlorinated biphenyl (PCB). Contact the local environmental health and safety specialist for instruction on proper handling of a contaminated meter.

3 Cannot Complete Gas Meter Change – Cannot Gain Admittance / Cannot Get In (CGI)

3.1 When a gas meter change cannot be completed due to a CGI, field personnel must perform the following steps:

1. When possible, verify the gas meter badge number to be changed matches the FO.
2. Leave a Service Report form advising the customer to call the Customer Contact Center at **1-800-743-5000** to arrange for access to the meter and premise.
3. Note on the FO that a Service Report form was left at the customer premise.

4 Gas Meter Found Off – Sealed and Not Sealed

4.1 When the gas meter is found off, field personnel must perform the following steps:

1. Verify the gas meter badge number to be changed and note "meter found off" and the reason why (if known) on the FO.
2. Using the programmer, verify that the SM gas module number matches the FO.
3. Verify that the module read matches the gas meter index read; and check that the module programming is correct.



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4.1 (continued)

4. When a mismatch is identified between the FO and the on-site information, enter the as-found conditions in the FO remarks and contact the applicable supervisor and the SM gas endpoints hotline (**925-459-8120**).
 - a. The SM gas endpoints hotline is an available resource during normal business hours to report problems and answer questions related to gas SM module installation and maintenance.
 - b. Leave relevant information if not available and an SM representative will respond.
5. Change the gas meter only if the premise is likely to be reoccupied. Follow the instructions outlined in Section 2.
6. If the gas meter is removed, turn off the SM module installed on the old gas meter using the programmer.
 - a. If a gas meter is installed, turn on and program the SM module installed on the new gas meter using the programmer.
7. Upgrade the gas meter set to Company standards, such as painting, installing a useable tee (if appropriate) and verifying the set is properly insulated. Refer to Numbered Document J-12, Hard Case Meter Installation and Numbered Document J-14.1, Curb Meter Installations.
8. Inspect the gas meter set components and piping for corrosion, in particular air/soil transitions and atmospheric corrosion. If necessary corrections are required, complete the applicable step(s) in the following bulleted list:
 - If there is surface rust or oxidized metal and the original pipe wall thickness has not diminished, re-coat (paint or wrap) the affected parts.
 - If there is severe rust with scaling, pitting or blistering and the integrity of the metal is compromised or the original pipe wall thickness has diminished, replace and coat (paint or wrap) all affected parts.
9. Inspect and change the regulator as required in Utility Procedure TD-6436P-28, "Servicing Gas Regulators and Determining Gas Pressures."
10. If the premise is not likely to be reoccupied, remove the gas meter and attach a completed meter removal tag to the removed gas meter.
11. If the gas meter is removed, turn off the SmartMeter module installed on the old gas meter using the programmer.



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4.1 (continued)

NOTE

If liquid is suspected inside a removed meter, the meter may be contaminated with polychlorinated biphenyl (PCB). Contact the local environmental health and safety specialist for instruction on proper handling of a contaminated meter.

12. Complete the FO.

5 Gas Meter “Scheduled” For Change – Found Meter Changed

5.1 When a gas meter is scheduled for change but the meter is already changed, field personnel must record the gas meter number, size, type and year on the FO.

6 Gas Meter Removals

6.1 To remove a gas meter, field personnel must perform the following steps:

1. Verify the gas meter badge number to be removed matches the FO.
2. Using the programmer, verify that the SM gas module number matches the FO.
3. Verify that the module read matches the gas meter index read; and check that the module programming is correct.
4. When a mismatch is identified between the FO and the on-site information, enter the as-found conditions in the FO remarks and contact your supervisor and the SM gas endpoints hotline (**925-459-8120**).
 - a. The SM gas endpoints hotline is an available resource during normal business hours to report problems and answer questions related to gas SM module installation and maintenance.
 - b. Leave relevant information if not available and a SM representative will respond.
5. If the meter is “found on,” the premise is occupied, and admittance can be gained, follow the applicable instructions in Utility Procedure TD-6435P-04, “Procedures for Discontinuing Gas Service.”
6. If the meter is “found on” and a “service on” sticker is on the gas meter indicating a new customer has moved in, follow the applicable instructions in Utility Procedure TD-6435P-04, “Procedures for Discontinuing Gas Service.”



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6.1 (continued)

7. If the meter is found “sealed” or “off” at the service or manifold valve, or the premise is vacant, or the meter is “found on” but admittance cannot be gained, either remove the meter (and regulator, if equipped) and cap or plug the service valve and the houseline, or remove the meter and install a spacer bar.
 - a. Installing the spacer bar is the preferred method when the premise is likely to be re-occupied.
8. If the gas meter is removed, turn off the SM module installed on the old gas meter using the programmer.
9. Record action taken on the FO.
10. If the gas meter is removed and not replaced, issue a follow up multipurpose customer service order to the engineering and planning department to determine if and when the gas service should be cut and capped.

NOTE

If liquid is suspected inside a removed meter, the meter may be contaminated with polychlorinated biphenyl (PCB). Contact the local environmental health and safety specialist for instruction on proper handling of a contaminated meter.

7 Gas Meter and Meter Assembly Removals

- 7.1 To remove the gas meter and meter assembly, field personnel must perform the following steps:
 1. If the building is to be moved or destroyed, remove the gas meter and regulator, install a steel plug in the service valve, and cap or plug the houseline.
 2. Turn off the SmartMeter module installed on the old gas meter using the programmer.
 3. If immediate abandonment is necessary, notify dispatch operations personnel in the RMC right away and note the FO.
 4. If immediate abandonment is not necessary, issue a follow up multipurpose customer service order to the engineering and planning department to determine if the gas service should be abandoned.
 5. If the gas meter and regulator cannot be removed due to equipment size, note and complete the FO for re-issuance. If immediate removal is necessary, notify dispatch operations personnel in the RMC and note on the FO.



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7.1 (continued)

6. If the gas meter and regulator cannot be removed due to a wrong address, inaccessible meter, or other erroneous situations, complete the FO for re-issuance. If immediate removal is necessary, notify dispatch operations personnel in the RMC and note on the FO.
7. In combination service areas, whenever possible, remove the locked gas and single-phase, socket-type electric meters at the same location and at the same time.

NOTE

For non-Company meter requests, field personnel must work on non-Company meters in the process of completing a job. Typically, these are direct access (DA) meters owned by an energy service provider (ESP) or by the DA customer. For properly managing non-Company meter requests, see [Section 9.3](#) and [Section 10](#).

8 Electric Meter Changes

8.1 To change electric meters, field personnel must perform the following steps:

1. Verify the electric meter number to be changed. If the customer is present, advise the customer of the purpose of the service visit and obtain permission to change the electric meter.
2. If the customer is not present, make customer contact.
3. Open the main disconnect.
4. Remove the old electric meter and attach a completed meter removal tag to the removed electric meter.
5. Verify the voltage as outlined in [Utility Procedure TD-6435P-03, "Establishing Electric Service."](#)
6. Install a new electric meter.
7. Close the main disconnect.
8. Complete the FO.



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9 Electric Meter Removals

9.1 To remove an electric meter, field personnel must perform the following steps:

1. Confirm the voltage and note it on the FO.
2. Verify the electric meter number to be removed.
3. Open the main disconnect, if possible.
4. Remove the electric meter, and install a cover plate except where the electric service is removed by the customer.
5. Attach a completed meter removal tag to the removed electric meter.
6. If the building is to be moved or destroyed, remove the electric meter. If the service drop or lateral has not been removed, install a cover plate over the meter socket. In this instance, issue a follow up multipurpose customer service order to the engineering and planning department for the electric service to be removed.
7. If immediate removal is necessary, notify dispatch operations personnel in the RMC immediately. Note on the FO.

NOTE

For meter changes, accurately record all single-phase, domestic, new electric meter information (including voltage and number of dials). Enter a kilowatt hour (kW h) constant numerated as 1, not 1.0 or 1.000, on the FAS transaction.

8. Returned removed electric meters to the GEMMS facility in approved containers.
9. For all electric SM service points, use like-for-like replacement strategy:

Table 2. Replacement Strategy

Best Practice Step	Action
1	Verify actual against FAS tag. Meter badge number, module, voltage, and form should match.
2	If discrepancy is found, cancel the tag and note the meter badge number, module, voltage and form in the tag.
3	Determine the meter model (whether it is a GE I-210+, L&G Focus AXR-SD, or GE kV2Ce).



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4	Review the appropriate quick reference guide and determine if there are any abnormalities on the LED screen and/or NIC LED sequence. If there are any abnormalities, proceed to meter replacement.
5	Proceed based on the exception type given in the remarks of the FO tag

10. Note FO tag remarks.

11. Replace item.

Table 3. On-site Meter Matches FO

On-Site Meter Matches Meter in the Field Order Step	Action
1	Verify actual against FAS tag. Meter badge number, module, voltage, and form should match.
2	If discrepancy is found, cancel the tag and note the meter badge number, module, voltage and form in the tag.
3	Once meter is replace use the appropriate field order remark code in the comments field of the FAS Tag.

NOTE

All electric meters removed from service (i.e. removal order, change order or damaged meter) must be properly tagged to indicate meter removal location and reason.

12. Notify meter event group (MEG) at **1-800-950-3506** if a DA meter is removed from service.

NOTE

The DA meter must be returned to the ESP within five business days. Instructions on the FO indicate the address to be used for returning the meter.

13. If the DA meter has remote communication (i.e. phone or radio frequency), notify the MEG Group at **1-800-950-3506**.



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- 9.2 Field personnel will encounter non-Company meters in the process of performing their job. Typically, these are DA meters owned by an ESP or by the DA customer.
- 9.3 Outlined below are key points to assist field personnel in properly managing non-Company meter requests:
 - The Company is responsible for maintaining safe and reliable electric service regardless of who owns the meter or provides the energy.
 - All non-Company meters are identified with a “C” in the meter number field on the faceplate of the meter.
 - Not all customers with a non-Company meter DA customers, some may be former DA customers who have returned to bundled service and have retained a non-utility meter.
 - Field personnel may remove and/or replace a DA customer meter due to a hazardous condition with the meter, the meter socket or service, shut-off for non-pay (SONP), voltage complaint, part-out complaint, electric outage, or Company equipment failure.
 - If a meter service provider’s (MSP) sealing device is not compatible with the Company’s tools, and the meter must be removed due to a hazard or emergency, then field personnel should use any safe means possible to remove the sealing device, including cutting it off.

10 Non-Pacific Gas and Electric Company Meter Requests

- 10.1 Contact meter service – total meter management support team personnel for additional guidance.
- 10.2 Refer to [Utility Procedure WP4300-30, “Gas and Electric Revenue Meter Handling, Inventory Management, and Meter Accuracy Billing Adjustments,”](#) for instruction regarding storing and shipping of removed meters.

END of Instructions

Definitions

NA

Implementation Responsibilities

The senior director in charge of customer field services reviews, authorizes, and issues this procedure.

The director in charge of field services ensures that this procedure is communicated and properly implemented in all service areas.

Field services managers and supervisors ensure that field services personnel are trained and knowledgeable about this procedure.



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Governing Document Utility Standard TD-6436S, "Gas and Electric Field Service and Dispatch and Scheduling Operating Practices," governs this document.

Compliance Requirement/Regulatory Commitment NA

Reference Documents **Developmental References:**

Code of Safe Practices.

Utility Procedure TD-6435P-02, "Establishing Electric Service."

Utility Procedure TD-6435P-04, "Procedures for Discontinuing Gas Service."

Utility Procedure TD-6436P-28, "Servicing Gas Regulators and Determining Gas Pressures."

Utility Procedure WP4300-30, "Gas and Electric Revenue Meter Handling, Inventory Management, and Meter Accuracy Billing Adjustments."

Utility Standard Practice (USP) 22, "Safety and Health Program."

Utility Standard S4300, "Gas Measurement Requirements."

Utility Standard TD-6436S, "Gas and Electric Field Service and Dispatch and Scheduling Operating Practices."

Numbered Document J-12, Hard Case Meter Installation

Numbered Document J-14.1, Curb Meter Installations.

Supplemental References:

NA

Appendices NA



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Attachments Attachment 1, "Instructions For Special Handle Meters."

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Approved By
Manager

Document Owners
Supervisor

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Revision Notes

Where?	What Changed?
ALL	Added gas SmartMeter programming requirements.