Chapter 5

Metering

From

SCE’s Manual

The ESP Handbook

Chapter 7
Metering under Direct Access

Version 2.5
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Chapter 7: Metering under Direct Access

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Appendix:

7.1. Introduction:

The CPUC issued two (2) decisions that define most of the requirements for metering services referenced in this chapter. The first is D.97-10-087, Opinion Regarding Direct Access Implementation Plans and Related Tariffs, issued 10-30-87.

SCE implemented the provisions of this decision in its Direct Access tariff, Rule 22. The second is D.97-12-048, Opinion Regarding the Meter and Data Communications Standards Workshop Report, issued 12-3-97 which will be referred to as the "MDCS Decision".

Additionally, the MDCS Decision established the Permanent Standards Working Group to recommend permanent standards to replace the interim standards defined by the MDCS and DAIP Decisions. This group submitted its report to the CPUC on July 29, 1998 with recommendations for metering and meter data management agent standards. While the CPUC has not yet ruled on the recommendations, it is suggested that ESPs, MSPs and MDMAs peruse the report. It is available on the Internet at http://162.15.5.2:80/wk-group/dai/pswg/.

NOTE: Small Customers are those on SCE Domestic Rate Schedules and rate schedules GS-1, TOU-GS-1, TOU-EV-3, PA-1, AL-1, LS-1, LS-2, LS-3, OL-1 and TC-1.

Under Direct Access, ESPs have the option of providing certain metering services to any customers other than Small Customers. Effective January 1, 1999, ESPs may provide these services to **all** customers. These services include the provision of the meter, ownership of the meter, meter testing for adherence to manufacturer's specifications, meter installation, meter calibration, meter testing for proper installation and functionality, meter maintenance, and meter reading.

ESPs can provide any or all of the following metering services options to their customers:

- Meter Ownership services
- Meter Services (MSP)—installing, maintaining and testing meters
- Meter Data Management Agent (MDMA) services—reading meters and reporting meter usage data.

In line with SCE's commitment to provide ESPs with as much information as possible associated with the implementation of Direct Access, this chapter explains SCE's policies and procedures regarding the three meter service options.

In order to provide meter services, an MSP must be certified by the CPUC. The Meter Service Providers (MSP) certification requirements are defined in the MDCS decision. Briefly stated, all non-utility MSPs must apply in writing to the CPUC for a Provisional MSP Certification. This will only be issued to a person or entity with a general electrical contractor's license issued by the Contractor's State License Board. The applicant MSP must be bonded for $100,000 or provide proof of liability insurance of no less than $1 million. Upon its receipt of a provisional certification number, the MSP must complete 50 successful meter installations, observed and approved by the utility, before applying in writing to the CPUC for a permanent certification number.

The CPUC will post a list of certified MSPs on their website at the following address: http://www.cpuc.ca.gov. Via a link to the CPUC website, this list will also be available at:

http://www.sce-esp.com

The MDCS Decision also requires an MDMA to be qualified by the utility in order to provide meter data management services. SCE's qualification process is contained in the Meter Data Management Qualification Package. Copies may be obtained at http://www.sce-mdma.com or by calling the Metering Operations Support Desk at (800) 203-4634.

7.2. Liability Issues and Auditing:

ESPs providing these meter services to Direct Access customers assume full liability for meeting the applicable meter and data communication standards, as well as other applicable legal and regulatory requirements. They also assume responsibility for the safe installation and operation of the meter and any damage caused to a customer or SCE property by the meter or its installation. This liability will be borne by the ESP regardless of whether the ESP or its subcontractors perform the work.

As authorized by the Energy Service Provider Service Agreement approved by the CPUC as Appendix B of D.97-10-087, if SCE reasonably believes a billing or metering error has occurred, SCE may request documents from the ESP to verify the accuracy of the metering or billing. After reviewing the documents, if SCE still believes an error has been made, SCE may request that an audit be conducted.

Additionally, SCE may request an ESP to test its meter. If the meter is found to be compliant, SCE will pay for the cost of the test.

If SCE believes an ESP installation does not satisfy CPUC-approved standards, SCE may perform an on-site inspection subsequent to meter installation.

7.3. Selecting/Changing Metering Service Options:

An ESP will first select in the ESP Service Agreement which options it intends to offer to some or all of its end-use customers. The available options are:

- **An ESP will provide Meters** (i.e., ESP, or a third party, will purchase a new meter for the end-use customer from SCE or a different party).
- **An ESP will offer Meter Installation Services** (i.e., ESP, or a certified third party, will install, maintain, and test its meters).
- **An ESP will offer Meter Reading Services** (i.e., ESP, or a qualified third party, will read, validate, calculate, and store usage data).

An ESP may change these elections with prior written notice to SCE. In marking any combination of these options in SCE's Service Agreement, an ESP is stating that it plans to provide the selected services to some or all of its customers. It does not commit the ESP to provide the services to all its customers, however.

In order to state its planned meter service offerings at the individual customer level, an ESP must complete a series of fields within the electronic DASR. To change any meter service election for a specific customer (ownership, MSP, or MDMA), an ESP must submit an UPDATE DASR.

If a DASR is received with either an uncertified MSP selected or a non-qualified MDMA selected, SCE will send a letter to the ESP advising it of two (2) options: the ESP can either select a certified MSP and/or qualified MDMA or the DASR will be held for 15 business days while the MSP applies for certification or the MDMA applies for qualification. If certification or qualification is not completed within 15 business days, the DASR will be canceled.

7.4. Meter Ownership:

As defined by the CPUC, there are three (3) meter ownership options available under Direct Access. The meter can be owned by SCE, by the ESP, or by the customer. These ownership options are available now to customers other than Small Customers. These options will be available to all customers beginning January 1, 1999.

An ESP can determine the meter owner by contacting the customer or by calling Southern California Edison—Metering Operations Support Desk at (800) 203-4634. ESPs are responsible for notifying SCE of all meter ownership changes via a DASR.

D.97-10-087 stipulated that CTs and PTs are part of the distribution system. SCE will maintain ownership of CTs and PTs. SCE will furnish this information as part of the Meter Investigation. SCE will notify the ESP if the CT/PT ratio changes over time.

7.4.A. ESP Ownership of Meter:

To exercise the option of assuming ownership of a new meter, an ESP must first select that option in the ESP Service Agreement ("ESP will provide Hourly Meters"). The ESP must then signal its intention to own the meter in Field 61 through 63 of an individual DASR, and provide its Dun & Bradstreet number and ESP ticker symbol. This action will trigger SCE to send a Meter Investigation form (see Appendix B) to an ESP. The Meter Investigation form provides the following options for ESP ownership:

- The ESP owns the meter that the ESP provides and installs
- The ESP owns the meter that the ESP provides and SCE installs
- The ESP purchases the meter that SCE provides and installs

No transfer of ownership from SCE is required for options 1 and 2 since SCE did not provide the meter.

To facilitate option 3, the Meter Investigation form will indicate the prices of meters that SCE will supply and install. When the ESP returns the completed Meter Investigation form, SCE will send a Meter Purchase and Installation Authorization form (Appendix J) to the ESP. The ESP will complete the form, keep a copy and return the original to

SCE. When the signed form has been received and the installation is complete, SCE will bill the ESP for the cost of the meter and the installation. Upon receipt of payment, the ESP becomes the meter owner.

SCE is not presently selling existing installed meters.

ESPs should note that responding to a Meter Investigation is a critical step in establishing Direct Access services. Delays in processing a DASR are possible if SCE does not receive accurate and timely information about the ESP's metering decisions. To address the problem of DASRs pending for months with no response to the Meter Investigation, the following policy was developed jointly by SCE and ESPs. If SCE has not received a response to a Meter Investigation within 15 business days, a reminder notice will be sent to the ESP. If there is no response within an additional 15 business days (30 days total), the DASR will be canceled.

7.4.B. Customer Ownership of Meter:

The ESP, as the customer's representative, must indicate the customer's intent to own the meter in Field 61 of an individual DASR. This action will trigger SCE to send a Meter Investigation form to the ESP. The Meter Investigation form provides the following options for customer ownership:

- Customer owns the meter that the ESP provides and installs
- Customer owns the meter that the ESP provides and SCE installs
- Customer owns the meter that SCE provides and installs

No transfer of ownership from SCE is required for options 1 and 2.

For option 3, the Meter Investigation form will indicate the prices of meters that SCE will supply and install. When the ESP returns the completed Meter Investigation form, SCE will send a Meter Purchase and Installation Authorization form (Appendix J) to the ESP to deliver to the end-use customer. The customer will complete the form, keep a copy and return the original to their ESP. The ESP will return the original form to SCE. When the signed form has been received and the installation is complete, SCE will bill the ESP for the cost of the meter and the installation. Upon receipt of payment, the customer becomes the meter owner.

SCE is not presently selling existing installed meters.

7.4.C. SCE Ownership of Meter:

Until January 1, 1999, when meter ownership is unbundled for all Direct Access customers, SCE will continue to own the meter for Small Customers.

For customers not defined as Small Customers, the ESP can indicate in Field 61 of an individual DASR that it (or the customer) wishes SCE to own the meter.

Customers between 20-50 kW may participate in Direct Access using their existing cumulative metering, which SCE will continue to own, or they may choose to have interval metering installed.

If the customer currently has interval metering because their rate requires it, SCE will continue ownership of the existing meter.

If new interval metering is required or selected, SCE will install it and own it under the Interval Metering and Metering Facilities Agreement contract signed by the customer. Under the terms of this contract, the customer will pay the costs of purchase and installation of the interval metering facilities through a monthly capital-related charge. This charge must be paid for the useful life of the facilities but no less than 10 years. Under this lease arrangement, the customer will pay SCE for maintenance of the metering facilities.

If the customer elects to terminate the agreement prior to the specified duration, the customer will pay a termination charge which includes SCE's un-recovered investment in the interval metering and replacement charges.

This option requires a long-term agreement with financial obligations for early termination. If the ESP selects this option for the customer, but the customer decides against it at the point of signing the contract, the DASR could be delayed while another option is selected. Therefore, the ESP should make every effort to explain the option to the customer before making this selection.

7.4.D. Customer Returns to Bundled Service:

Customers can elect to return to bundled service or the ESP can elect to return the customer to bundled service with Southern California Edison. In addition, SCE can return the customer to bundled service in cases of ESP non-compliance. On a return to bundled service, the policy on meter ownership is as follows:

If the ESP owns the meter:

The ESP must either remove the meter or transfer ownership to the customer. If ownership is transferred to the customer, the policies outlined in the next paragraph apply. If ESP removes the meter, SCE will install a replacement meter. The customer will be charged the meter replacement fee listed in the Customer Choice - Service Fees schedule.

If the Customer owns the meter:

If SCE cannot read the meter, SCE will remove the meter and install a new bundled service meter. The customer will be charged the meter replacement fee listed in the

Customer Choice - Service Fees schedule. SCE will own the meter and maintain it under regular bundled service tariffs. If the customer ***requests*** an interval meter which is not required for the customer's rate, the customer can either lease an SCE-owned meter (see 7.4.C) or own the meter by purchasing it from the Customer Choice - Service Fees schedule. In either case, the customer will pay for the installation and maintenance of the meter.

If SCE can read the meter:

- The customer can continue to own the meter. The customer will pay the monthly fee for maintenance unless an interval meter is required for the customer's rate. In that case, SCE will provide maintenance at no additional charge.
- If the customer ***requests*** a new interval meter, the customer can either lease an SCE-owned meter (see 7.4.C) or own the meter by purchasing it from the Customer Choice - Service Fees schedule. In either case, the customer will pay for installation and maintenance of the meter.

If SCE owns the meter:

No changes are required.

7.4.E. Selecting/Changing Ownership Options

Meter Ownership changes must be communicated to SCE via a DASR. Although SCE will not be involved in ESP to ESP meter ownership changes, ESPs are responsible for notifying SCE of meter ownership changes via the DASR.

In response to a DASR noting an ownership change, SCE will send the ESP a Meter Investigation form (See Appendix B) requesting additional information. Upon completion of the form, ESPs will return the Meter Investigation form to SCE via fax at the following address:

Southern California Edison—Metering Operations
CTAC - Building 6042
Irwindale Avenue
Irwindale, CA 91702

Phone: 800-203-4634
Fax: 626-633-3192

7.5. MSP Services Overview

Important Note: As described in the introduction to this chapter, MSPs must be certified by the CPUC in order to provide MSP services. The policies and procedures described in this section assume that the MSP has certification.

Southern California Edison recognizes that MSPs are agents of ESPs or SCE.

ESPs can elect to provide metering services by:

- Becoming a certified MSP

- Subcontracting with a 3rd party certified MSP
- Subcontracting with SCE

SCE's range of meter services and prices is outlined in the 'Energy Service Providers - Service Fees' schedule. This document is available at the end of the ESP Kit.

ESPs acting as a Metering Service Provider to Direct Access customers assume full liability for meeting the applicable meter and communication standards, as well as other applicable legal and regulatory requirements. They also assume responsibility for the safe installation and operation of the meter and any damage caused to customer or SCE property by the meter or its installation. This liability will be borne by the ESP regardless of whether the ESP or its subcontractors perform the work.

Please note: When an ESP subcontracts metering services to an MSP, SCE will communicate directly with the MSP (listed on the DASR) for scheduling. SCE agrees to do this in the interest of facilitating the scheduling and installation of meters. However, communication regarding the installations remains the responsibility of the ESP and MSP. While SCE **does** notify the ESP of scheduled installations and changes, SCE is not responsible for notifying the ESP of delays due to the unavailability of MSP resources or materials.

As part of providing metering services, ESPs must:

- Provide SCE with the completed Meter Investigation form **at least 5 business days** prior to the installation of a new meter and the removal of an SCE meter, as specified in Rule 22, Section G(3).
- Provide meter identification number prior to installation for any meters not purchased by SCE.
- Comply with standards and protocols established by the CPUC for meter services.
- Obtain lock ring keys for meters originally installed by SCE or request joint meets with SCE.
- Provide information to SCE on the specifications of meters not purchased or installed by SCE.
- For SCE meters being removed, obtain a final read on SCE's metering and schedule a joint meeting with SCE for IDR meter final reads.
- Return the existing meter in good working order within five (5) business days or incur the cost of the net book value of the meter in place or $275, whichever is higher.

7.5.A. Meters

Interim standards have been established for meters used by DA customers. These standards are defined in the MDCS Decision. Permanent standards have been proposed by the Permanent Standards Working Group established by the CPUC. To review these proposed standards, please see the PSWG Report filed July 29, 1998 which is available on the Internet at http://162.15.5.2:80/wk-group/dai/pswg/. In some cases, existing meters will meet these standards. In general, however, new meters will be necessary for a wide range of end-use customers.

The chart below is designed to help you determine your customer ŝ meter needs.

Determining Your Customer ŝ Meter Needs

(A Table goes here)

7.5.B. Communicating MSP Options

An ESP will indicate its choice of MSP for a customer on the DASR. In the course of the DASR process, SCE will examine the existing metering to determine if it meets Direct Access requirements. If a meter change is not required and meter ownership change was not requested, SCE will schedule the DASR for completion.

Otherwise, the ESP will receive a Meter Investigation form (Appendix B). Initially, this form will be faxed to ESPs by their SCE ESP Services account representative. The ESP will complete the Meter Investigation (MI) form indicating its choices. It is assumed that the MSP indicated on the DASR is responsible for the meter installation unless the ESP has elected to have SCE provide installation-only services on a contract basis. To arrange a contract for either ESP-supplied or SCE-supplied meters, the ESP will need to contact SCE's ESP Services by e-mail at espsvcs@sce.com or contacting directly at (888) 371-ESPS.

The ESP will then return the MI to SCE. Completed MI forms should be faxed to:

Southern California Edison—Metering Operations
CTAC - Building 6042
Irwindale Avenue
Irwindale, CA 91702

Phone: 800-203-4634
Fax: 626-633-3192

ESPs should note that determining the meter type **and installation date** is a critical step in establishing Direct Access services. Delays in processing a DASR are possible if SCE does not receive accurate and timely information about the ESP's meter option and installation decisions. To address the problem of DASRs pending for months with no response to the Meter Investigation, the following policy was developed jointly by SCE and ESPs. If SCE has not received a response to a Meter Investigation within 15 business days, a reminder notice will be sent to the ESP. If there is no response within an additional 15 business days (30 days total), the DASR will be canceled.

SCE will send an acknowledgment confirming Meter Investigation choices to the ESP within three (3) business days of receipt of the MI response. For an example of Acknowledgment, please see Appendix C .

The metering Scheduling Coordinator at SCE will negotiate schedules with ESPs/MSPs for meter installations and joint meets. While Rule 22 requires the ESP to provide SCE with the completed Meter Investigation form at least 5 business days prior to the ESP's installation of a new meter, more advance notice is preferred to ensure a smooth transition to DA. Assuming that SCE has received the completed MI within the required time, SCE will schedule installations with 4 business days prior notification of a proposed installation date. The SCE Scheduling Coordinator must receive schedules for installations by 3 p.m. on any given day in order to consider that day as the baseline for calculating the 4 business days prior notification required for scheduling.

Please note that SCE will only send a Meter Investigation form when SCE determines during the DASR process that a meter change is required for DA or an ownership change was requested. (Currently, the DASR does not contain a field to indicate a requested meter change). If an ESP wants SCE to install a different meter, even though it is not required and there is no ownership change, the ESP should contact the Metering Operations Support Desk at (800) 203-4634 to request the meter change.

7.5.C. Meter Services—Installation

Direct Access meters must meet the interim standards specified by the CPUC in the MDCS Decision. Permanent standards have been proposed by the Permanent Standards Working Group established by the CPUC. To review these proposed standards, please see the PSWG Report filed July 29, 1998 which is available on the Internet at http://162.15.5.2:80/wk-group/dai/pswg/.

The MSP will install all Interval Meters in compliance with CPUC interim standards as specified in the MDCS Decision.

When the MSP is removing an SCE meter and installing a new meter, Rule 22 requires that SCE receive the completed Meter Investigation **at least** five (5) business days prior to the meter set. Prior notification is required to correctly schedule the switch to Direct Access. While the requirement is five business days, additional advance notice will facilitate the transition to Direct Access. Under no circumstances shall an MSP remove SCE metering without prior notification.

Without prior notice, SCE cannot schedule the switch to Direct Access for the date of the meter change. Therefore, when an ESP's MSP changes out a meter without prior notice to SCE, the DA switch date will be the next scheduled read date that is at least ten (10) business days beyond the date SCE received notification of the meter change. If the DASR has been canceled, the ESP must resubmit a DASR for the next scheduled read date.

Within three (3) business days of installation, the MSP will provide the non-MSP (i.e., the ESP or the UDC as the case may be) with the results of the initial meter calibration test, the ending read for the meter which was removed (if applicable), the starting read for the new meter, and information on meter identification, voltage, meter constraints, and other parameters required under CPUC-approved standards.

Because SCE is responsible for the maintenance of electricity distribution to customers, in the case of an outage SCE must have sufficient information about meters in its service territory to restore electrical service. For all meter changes not done by SCE, the ESP must supply SCE with sufficient identifying and operational meter data to allow SCE to carry out its functions. This information is contained on the Basic Install/Remove Notification form found in Appendix E of this section and must be supplied within three (3) business days of installation.

All required meter information should be faxed to:

Southern California Edison—Metering Operations
CTAC - Building 6042
Irwindale Avenue
Irwindale, CA 91702

Phone: 800-203-4634
Fax: 626-633-3192

7.5.C.1. Identification of Direct Access Metering:

SCE has established a sticker system to be placed on all Interval Data metering installations (DA and Non-DA, SCE and ESP owned) in case of emergency. SCE will install stickers on SCE metering and ESPs will install stickers on their installations. This will enable emergency personnel to recognize IDR solid state meters. In addition, it will also trigger a notification to the emergency dispatch crew which will, in turn, contact the ESP or appropriate personnel at SCE immediately.

7.5.C.2. Meter Calibrations:

The MSP shall be responsible for ensuring that all Interval Meters are calibrated in accordance with CPUC performance specifications. Records on calibration should be maintained by the MSP and provided to the appropriate parties within 5 working days of a request in accordance with Rule 22, Section G(4).

7.5.C.3. SCE Installation of SCE-supplied Equipment for ESPs and Customers:

ESPs may choose to have SCE purchase and install Direct Access meters for their customers for a fee. SCE's Meter Investigation form will indicate the metering options and prices. These options and prices are also listed in the Energy Service Provider-Service Fees schedule.

SCE will provide installation services on a contract basis for SCE-supplied meters where SCE has not been selected as the ongoing MSP on the DASR. To arrange a contract for installation, ESP will need to contact SCE's ESP Services by e-mail at espsvcs@sce.com or contacting directly at (888) 371-ESPS.

7.5.C.4. SCE Installation of ESP-owned Equipment for ESPs and Customers:

An ESP may choose to purchase its own meters and have SCE install them for a fee. An ESP choosing this option must provide SCE with programming specifications or provide the meter pre-programmed, if applicable. The method of programming must be agreed to by SCE.

SCE will provide installation services on a contract basis for ESP-provided meters where SCE has not been selected as the ongoing MSP on the DASR. To initiate this contract, the ESP should contact SCE's ESP Services. Prices are listed in the ESP-SF schedule.

ESPs must provide a meter identification number and required list of attributes for any meters not purchased by Southern California Edison. This meter information is needed to determine if the meter selected is appropriate for the site and to provide the meter attributes that must be uploaded into our database prior to the installation.

If the ESP provides the meter, the AEP meter bar code specification number and metering characteristics should be received at least two (2) weeks **prior** to installation. SCE will only schedule meter changes for accounts where a valid AEP number and/or range has been received by SCE (by way of 'Supplying Meter Number Information to SCE' form/Appendix A) at least five working (5) days prior to the proposed scheduled date. This policy is in keeping with Section G(3) of Rule 22 and is intended to prevent delays in the switch to Direct Access caused by incomplete meter information.

When the AEP numbers have been received and uploaded into SCE's database, SCE will acknowledge completion of this upload via e-mail to the ESP at the e-mail address provided on the 'Supplying Meter Number Information to SCE' form (Appendix A).

Where several ESPs are using the same MSP for meter services, that MSP can submit a block of AEP numbers that apply to those several ESPs as long as the following requirements are met:

- Completed Appendix A forms must be received at least 5 business days prior to the meter installation.
- The MSP can provide SCE no more than a 6-month supply for forecasted meter installations.
- The MSP is still responsible for tracking AEP numbers assigned and used in the SCE service territory.

For further information on AEP bar code specifications, please contact:

Metrice A. Smith
American Electric Power
Riverside Plaza
Columbus, OH 43215-2373
Phone: 614-223-1000

Meter information should be forwarded to SCE using the 'Supplying Meter Numbers to SCE' form according to the following guidelines:

- ESP/MSP meter numbers must conform to the AEP standard. This standard describes the makeup of the actual meter identifier. It is fully ANSI C12.10 compliant in that it is a 17 character value, and it does follow the format suggested by ANSI. The value is "AABYYYYYYYYYZZZZZ" where

AA	is the meter test code
B	is an identifier for the meter manufacturer
YYYYYYYYY	is the manufacturer's serial number or the UDC's number.
ZZZZZ	is not currently used by Southern California Edison

- ESP/MSP must submit a "Supplying Meter Numbers to SCE" form listing meter attributes and AEP numbers. These forms can be submitted to:

Southern California Edison
Metering Operations
CTAC— Building 6042
Irwindale Avenue
Irwindale, CA 91702

Phone: 800-203-4634
Fax: 626-633-3192

- Should any discrepancies arise, the ESP/MSP will be contacted by SCE to determine correct meter attributes so that the ESP's meter nameplates can be corrected, if necessary.

- An ESP/MSP wishing to do business within SCE territory must obtain and maintain a current version of the AEP meter name scheme.

- SCE will upload meter numbers and notify ESP that this activity is completed.

The ESP will communicate on the Meter Investigation form the range of AEP numbers from which SCE should select a meter to install for this particular customer. New meters must arrive at SCE's warehouse no more than six (6) working days and no less than three (3) working days prior to installation. ESP meters should be shipped to the address below:

Southern California Edison— Corporate Warehouse
Attention: Receiving Clerk— ESP
Chestnut St.
Westminster, CA 92683

SCE's policy on installation of ESP-owned equipment is as follows:

- If SCE has been selected as the MDMA, then the meter must be on our list of approved meters since these are the meters we can read. See Appendix I for current list of approved meters.

- SCE currently tests 100% of our Interval meters to ensure that they are accurate and reliable. SCE expects that ESPs/MSPs have pre-tested the equipment they provide for installation to ensure reliability.

- Meter programming can be accomplished several ways:
  - SCE verifies ESP "master program" and ESP agrees that no changes may be made to the program without SCE re-verification. Then SCE would allow ESP pre-programmed meter installation or ESP to program meter at joint meet installation.
  - SCE will develop meter program and install for ESP. SCE will develop program according to ESP specifications, as long as they meet UDC standards.
  - SCE will verify master program developed by ESP and install the program in ESP meters.

- SCE will perform a test of the installation to verify meter performance.

- SCE's charge for processes currently not itemized in the Energy Service Provider-Service Fees schedule is $65/hour plus materials.

7.5.C.5. ESP Installation of ESP-owned Equipment for ESPs and Customers:

An ESP may choose an MSP other than SCE. A certified MSP may install ESP metering equipment as long as it meets the interim standards specified by the MDCS Decision.

Under no circumstances shall an MSP remove SCE metering without prior permission. The ESP/MSP must provide SCE with the completed Meter Investigation form at least 5 business days prior to the removal of an SCE meter and the installation of a new meter, as specified in Rule 22, Section G(3). Prior notification is required to correctly schedule the switch to Direct Access. In the event that an MSP changes out a meter without prior notice to SCE, the DA switch date will be the next scheduled read date that is at least ten (10) business days beyond the date SCE received notification of the meter change. If the DASR has been canceled, the ESP must resubmit a DASR for the next scheduled read date.

The Metering Scheduling Coordinator at SCE will negotiate schedules with an MSP for meter installations and joint meets. Installations can be scheduled with 4 business days 'prior notification (provided SCE has received the completed

Meter Investigation as required). The SCE Scheduling Coordinator must receive schedules for installations by 3 p.m. on any given day in order to consider that day as the baseline for calculating the 4 business day prior notification required for scheduling.

MSPs are responsible for pre-testing their equipment and ensuring reliability. Once an SCE meter has been removed and an ESP meter has been installed, SCE equipment should be returned to SCE. The use of SCE equipment as a back-up for MSP metering or communication equipment failure is not an option.

SCE may require a joint meet. For specific details on joint meets, please refer to Joint Meet subsection below.

Because SCE is responsible for the maintenance of electricity distribution to customers, in the case of an outage SCE must have sufficient information about meters in its service territory to restore electrical service. For all meter changes not done by SCE, the Basic Install/Remove Notification form found in Appendix E of this section must be supplied within three (3) business days of installation. Please mail or fax the form to:

Southern California Edison— Metering Operations Phone: 800-203-4634
CTAC - Building 6042 Fax: 626-633-3192
Irwindale Avenue
Irwindale, CA 91702

7.5.C.5.1. Joint Meets:

In the interest of streamlining the meter installation process, SCE has revised its joint meet policy. **This new policy is contingent on the adherence by the ESP and its MSP to the Permanent Standards Working Group electrical worker classifications.**

A joint meet will be required between SCE and the MSP in the following cases:

1) The first 50 installations required for MSP certification
2) An IDR meter requiring an optical device to retrieve interval data
3) A locked location for which SCE will not allow key access (e.g., substation)
4) Metering Service Provider's request. The first time an MSP encounters a complex metering situation or a safety concern, it will notify the SCE to schedule a joint meet. At the joint

meet, SCE will explain any special circumstances that may exist at that installation.

5) Special metering circumstances including primary voltage panels (see Section 7.5.C.5.1.1), interruptible metering, co-generation, deduct metering.

SCE will charge the ESP $65 for joint meets requested by the MSP but not required by SCE. This includes circumstances in which the MSP is unable to perform the required service or the MSP simply requests SCE to participate.

The Metering Scheduling Coordinator at SCE will negotiate schedules with the MSP for meter installations and joint meets. Once a date has been scheduled, SCE will send an acknowledgment of the agreed upon date to the ESP and MSP. In the event the MSP wishes to cancel a scheduled joint meet, SCE requires one business day notice to avoid charges. SCE will schedule appointments between 8am-2pm, M-F. If SCE determines that a joint meet is required, a meter change cannot be scheduled without communicating with both the MSP and SCE. A 30-minute window has been established for joint meets. Each party should wait 30 minutes before assuming the other party has failed to appear. If the MSP fails to arrive after 30 minutes, the ESP will be billed the $65 joint meet fee.

If the first joint meet is missed by either party, a new joint meet must be scheduled prior to proceeding with meter installation. In the event an MSP misses two (2) joint meets, the DASR will be canceled and must be resubmitted.

ESPs or their MSP entering SCE substations must comply with applicable utility rules and be accompanied by appropriate SCE personnel.

7.5.C.5.1.1. Primary Voltage Panels:

Primary voltage panels are locked facilities because

- the voltage involved poses a significant safety risk
- an unqualified worker with access to this panel could

a) disrupt power to large numbers of customers
b) damage SCE equipment
c) leave the equipment in a dangerous state

- unauthorized access to secured facilities poses the threat of energy theft.

Therefore, when an MSP requires access to a locked facility, they must request a joint meet. The first time a joint meet is conducted on a primary voltage panel, SCE will determine if the panel has a safety barrier ("barriered"). If not, then a joint meet will continue to be required whenever the MSP wishes to work on the meter.

However, if the panel is barriered, SCE will allow the MSP to install an SCE-approved dual locking device and attach a security lock that is supplied by the ESP. The ESP, not the MSP, must supply the lock because the ESP may terminate the contract with the MSP and the MSP should no longer have access to the equipment. The security lock must be comparable to SCE's in strength and durability, since its purpose is to prevent unauthorized access. When the ESP supplies this lock to its MSP, the ESP is taking full responsibility for ensuring that the MSP personnel who enter the panel are qualified for work on that panel as required by current OSHA rules (Definitions: Qualified Electrical Worker, Sections 2706, 2714, 2940.2) and as specified in the proposed PSWG rules on meter worker classifications.

Please note that if an MSP installs a single locking device preventing SCE from accessing the panel, SCE will cut the lock and will install an SCE security lock.

7.5.C.5.2. Final Reads:

When an SCE meter is removed, the final read must be provided to SCE within three (3) business days of the meter installation. For interval data meters, SCE will require a joint meet and retrieve its interval data prior to meter removal. The ESP/MSP is responsible for providing the non-interval final read via the Basic/Install Remove Notification form.

Forms should be sent to:

Southern California Edison—Metering Operations
CTAC—Building 6042
Irwindale Avenue
Irwindale, CA 91702
Phone: 800-203-4634
Fax: 626-633-3192

7.5.C.5.3. Returning Meters to SCE:

When the MSP removes an SCE meter, it is to be returned to:

Southern California Edison— Corporate Warehouse
Attention— Return Clerk— ESP
Chestnut St.
Westminster, CA 92683

The meter should be returned in the same condition as found prior to removal. If the meter does not arrive within five (5) business days of removal or is found to have been returned damaged, the ESP will be charged the replacement cost of the meter. This cost will be determined by the cost of the meter or $275, whichever is higher. This process is in accordance with the requirements and time guidelines approved by the California Public Utilities Commission (CPUC).

If the ESP wishes SCE to return ESP-owned meters, ESPs must supply meter return address information via the Meter Return Form located in Appendix D. SCE will return ESP meters which do not belong to SCE. ESPs removing other ESPs 'or customers ' metering should execute private agreements to perform these services.

7.5.C.5.4. Meter Lock-rings and Lock-ring Keys:

Lock-rings:

The ESP must ensure that SCE has unrestricted access to the meter. SCE will allow existing lock-rings to be reinstalled on ESP metering, if the ESP desires. SCE will not allow alternative meter locking devices

Lock-ring Keys

ESPs may obtain lock-ring keys for original SCE meter installations from SCE.

7.5.C.5.5. Test Switches and Test Blocks:

SCE will allow certified MSPs to operate utility-owned test switches and utility-sealed customer-owned test blocks, when installing meters.

7.5.C.5.6. Non-Compliant Installation:

SCE may notify the ESP if it has reason to believe that an installation does not satisfy CPUC-approved standards. If the inspection reveals that the meter does not comply with CPUC performance specifications, the ESP shall correct the problem and pay the utility its standard hourly rate for the inspection. This hourly charge will include SCE's travel time to and from the site, as well as time on the site.

The ESP must make corrections within three (3) calendar days or SCE will correct the defect at the ESP's expense. For details on actions to be taken for failure to comply with CPUC requirements, see Rule 22, Sections G(8) and N.

7.5.C.5.7. Compensation Metering:

Compensation metering accounts require transformer data that can take up to 10 business days to assemble and process. SCE will identify these accounts by including the following statement at the bottom of the Meter Investigation form:

"Transformer compensation factors required. Will be furnished on request. May take up to ten business days to process, depending on availability of data and number of requests received at one time. Please submit requests to your ESP Account Manager A.S.A.P."

7.5.D. Meter Maintenance:

Southern California Edison recognizes that MSPs are agents of ESPs or SCE. The ESP must provide SCE with a phone number on the ESP Service Agreement for contact.

The MSP shall be responsible for ensuring that interval meters function in compliance with CPUC performance specifications. The MSP is also responsible for conducting routine maintenance and timely repair or replacement of malfunctioning meters. The MSP (if not SCE) must notify SCE of new equipment installations.

Either party may test its own meters or those owned by its customers for conformance to CPUC meter performance specifications. Either party may request the other party to test its meter. The party whose meter has been requested to be tested by the other party may require a $50 deposit prior to such testing. The requesting party has the

right to witness the testing. The requesting party will receive notification of the test date and written test results from the other party. If the meter is found to be within CPUC-approved standards, the requesting party shall pay the other party for all expenses related to the test.

The MSP (if not SCE) shall take reasonable measures to detect meter error, as defined in Rule 22 and the MDCS Decisions. The MSP shall notify SCE as soon as it becomes aware of any meter that is not otherwise operating in compliance with CPUC performance specifications. The MSP shall make any repairs or changes required to correct the error.

7.5.D.1. Emergency Conditions:

SCE requires ESPs offering metering services to provide SCE with a 24-hour emergency number and to respond within four (4) hours of notification.

SCE's 24-hour emergency number is **(800) 611-1911.**

7.5.D.2. Safety Procedures:

In the event an ESP/MSP discovers any situation whereby a non-compliant site is a safety risk (e.g., exposed wires, foreign ground, broken meter cover, exposed conductors, grounded coil, etc.) and efforts must be expedited to rectify the situation, the ESP is instructed to contact SCE's 24-hour emergency number at (800) 611-1911

7.5.B.1. 7.5.D.3. Meter malfunction/repair/replace:

In the event an MSP discovers a non-hazardous meter malfunctioning condition, the MSP is required to repair the condition within three (3) calendar days. If an ESP discovers the condition and SCE is the MSP, the ESP should contact the Metering Operations Support Desk at (800) 203-4634. See Section 7.7 for Metering Agent Service Request instructions.

If an Interval Meter fails to comply with CPUC performance specifications, the MSP shall correct such failure within three (3) calendar days after such problem becomes known, provided meter is registering accurate usage.
For details on actions to be taken for failure to comply with CPUC requirements, see Rule 22, Sections G(8) and N.

7.5.D.4. Security/password management:

It is SCE's policy that it will not provide metering passwords or software to third parties. If the current password and software are SCE's and an MDMA other than SCE has been selected, the new MDMA's software and password must

be loaded. If SCE is not the new MSP, then a joint meet with the new MSP will be required to effect this change as SCE will need to extract the final read prior to re-programming.

SCE will not require ESPs to provide SCE with metering passwords or software for their meters. In the event of a meter reading audit, SCE will expect the ESP to provide proof that the meter is programmed correctly and registering accurate usage.

7.5.D.5. Test Switches and Test Blocks

SCE will allow certified MSPs to operate utility-owned test switches and utility-sealed customer-owned test blocks, when replacing or maintaining meters.

7.5.D.6. Meter Access Change:

SCE requires notification within three (3) business days of any changes in meter access at a customer's site. Please call the Metering Operations Support Desk at (800) 203-4634 to report these changes.

Where SCE is not the MDMA and not the MSP, if SCE becomes aware of any metering access changes, SCE will notify the ESP within three (3) business days.

See Section 7.7 for Metering Agent Service Request information.

7.6. Meter Data Management Agent (MDMA) Services Overview:

Important Note: As described in the introduction to this chapter, MDMAs must be qualified by SCE in order to provide MDMA services. This qualification process is detailed in SCE's Meter Data Management Agent Qualification Package which can be obtained by calling Metering Operations Support Desk at (800) 203-4634 or by accessing the MDMA website at www.sce-mdma.com. The policies and procedures described in this section assume that the MDMA has been qualified.

With the unbundling of metering services, MDMA services are to be provided by SCE or an ESP. The ESP may subcontract the MDMA services to a third party or the ESP may subcontract with SCE to provide such services. If the ESP subcontracts the MDMA services to a third party, it is the ESP who remains responsible for the MDMA services.

Meter data management agent services include:

- Managing meter reading schedules
- Reading and retrieving meter data
- Validating, editing and estimating meter data
- Calculating usage
- Formatting data
- Storing data on MDMA's computer server

- Managing data on the MDMA's computer server
- Managing access to data on server
- Managing meter/device records

If an ESP elects to provide MDMA services itself or contract them through a third party, it will be required to provide the following information to SCE:

- MDMA Name
- MDMA Address
- MDMA Phone
- MDMA technical support number
- MDMA password for SCE access
- MDMA Internet address

This information should be provided on the Participant Information Form included in the Basic Information Package. For information on this form, please contact the ESP Services Division at (888) 371-ESPS or (888) 371-3777.

An ESP will indicate its choice of a qualified MDMA for a customer on the DASR. The ESP will be required to provide a Dun & Bradstreet number for the MDMA provider. If an MDMA number is not indicated on the DASR, SCE will assume that SCE has been selected.

To change the MDMA selected for a customer, an ESP must submit an UPDATE DASR.

7.6.A. MDMA Technical Support

All MDMAs, including SCE, are required to provide technical support 24 hours per day/7 days per week. SCE's technical support number is (800) 203-4634. Assistance will be provided on a 24 hours/7 days a week basis. Calls during normal business hours will be received by a person immediately. After hours technical calls will be answered within two (2) hours of call. All other after-hour calls will be deferred to the next business day.

7.6.B. MDMA Read Scheduling & Usage Posting:

Per the MDCS decision, Section III(D)(3)(e)(2), MDMAs must read meters at least once a month and shall read them on SCE's scheduled meter reading date. A copy of SCE's 1998 Meter Reading Schedule can be found in Appendix F. A copy of SCE's 1999 Meter Reading Schedule can be found in Appendix G. They can also be obtained on the ESP website at http://www.sce-esp.com. In the case of a meter change, the Meter Investigation will include the SCE meter reading cycle. For accounts not requiring a meter change, the meter reading date can be determined by the method described in Section 7.6.B.2, "Interim Method of Identifying Customer's Scheduled Meter Reading Cycle".

Rule 22 establishes timeliness requirements for the delivery of data to the MDMA server. For interval data, eighty (80) percent will be made available within one (1) day of the scheduled read date of the meter. Ninety (90) percent will be made available within two (2) days of the scheduled read date of the meter. Ninety-nine point ninety-nine (99.99) will be made available within five (5) days of the scheduled read date of the meter. (The PSWG Report is recommending that the CPUC reduce this last requirement to 99%). Data must be available on the server for three (3) days beyond the date posted.

For non-interval (monthly) data, eighty-five (85) percent must be made available by 6:00 a.m. on the first working day after the scheduled meter read date. Ninety-five (95) percent must be made available by 6:00 a.m. on the second working day after the scheduled meter read date. Ninety-nine point ninety-nine (99.99) percent will be made available by 6:00 a.m. on the fifth working day after the scheduled meter read date. (The PSWG Report is recommending that the CPUC reduce this last requirement to 99%).

ESPs can expect SCE data to be available on the MDMA server according to the same schedule.

7.6.B.1. Policy for estimated usage:

No more than 10% of the Direct Access accounts will contain estimated data **OR** no more than 1% of the data (i.e., 1% of the 720 hourly reads per month times the number of meters) will be estimated. (CPUC MDCS Decision, Section III(D)(3)(e)(5).

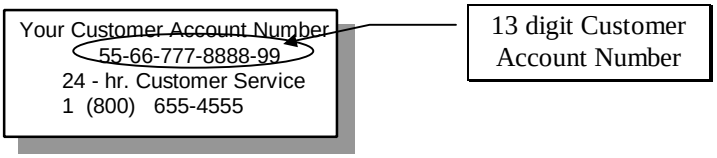
7.6.B.2. Interim method of Identifying Customer's Scheduled Meter Reading Cycle:

The customer's scheduled meter reading cycle can be derived from the customer's current Southern California Edison bill (see following example). There are two ways to determine the scheduled read cycle number:

- Using the Customer's Account number
- Using Next Meter Read on or about 'date

Method 1 - Using the Customer's Account Number

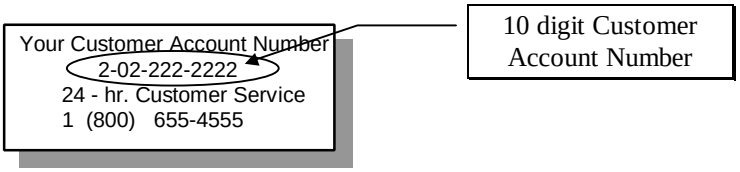
Digit 'Your Customer Account Number'



If the Customer Account Number is 13 digits, the customer's cycle is the first 2 digits of the Account Number.

Example: Customer Account Number is 55-66-777-8888-99
Customer's Cycle is **55**

Digit Customer Account Number

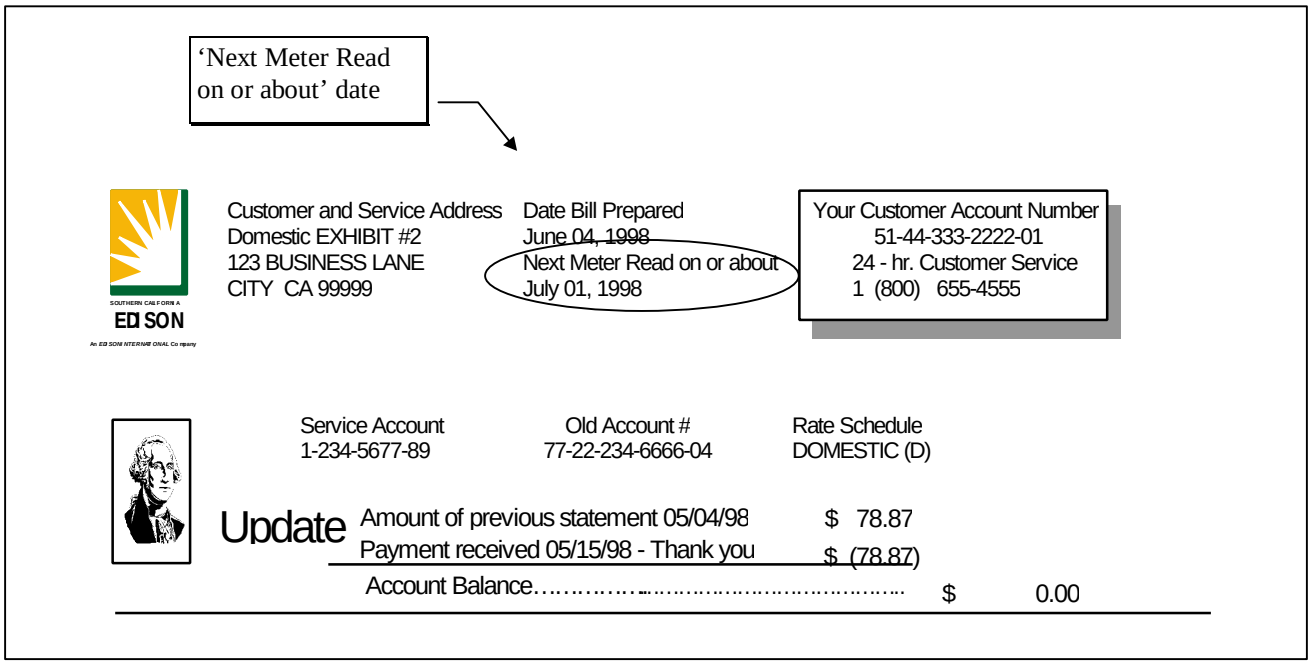


If the Customer Account Number is 10 digits, follow Method 2 - Using Next Meter Read on or about 'date.

Method 2 - Using Next Meter Read on or about 'Date

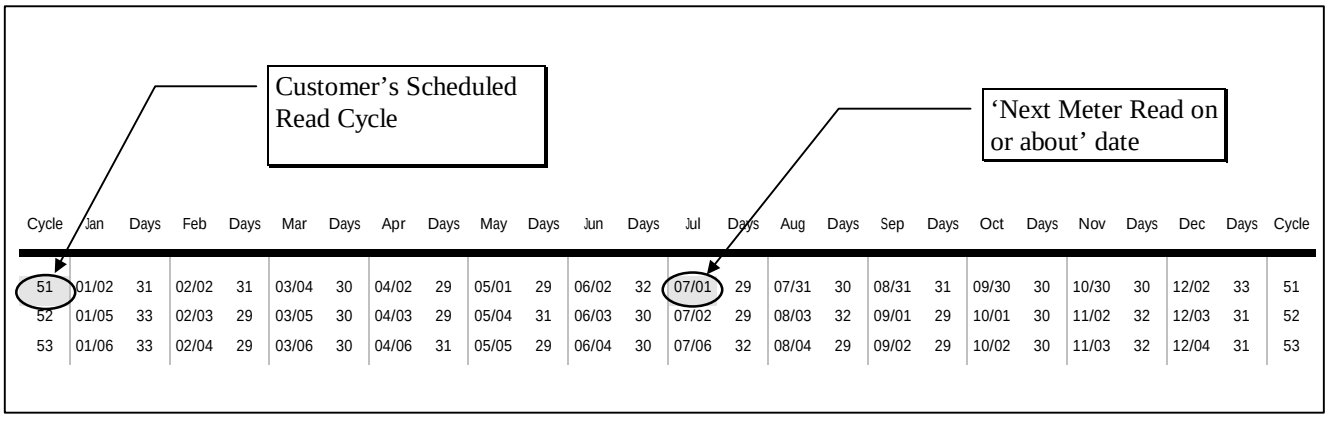
Using the "Next Meter Read on or about" date and the SCE 1998 Meter Reading Schedule[1], the customer's cycle number can be identified.

Step 1. In the mid-upper portion of the bill, "Next Meter Read on or about" is included.



Sample of top portion of Southern California Edison Bill

Step 2. Using the Next Meter Read date, scan the Meter Reading Schedule to determine the cycle number associated with that date.



Cycle	Jan	Days	Feb	Days	Mar	Days	Apr	Days	May	Days	Jun	Days	Jul	Days	Aug	Days	Sep	Days	Oct	Days	Nov	Days	Dec	Days	Cycle
51	01/02	31	02/02	31	03/04	30	04/02	29	05/01	29	06/02	32	07/01	29	07/31	30	08/31	31	09/30	30	10/30	30	12/02	33	51
52	01/05	33	02/03	29	03/05	30	04/03	29	05/04	31	06/03	30	07/02	29	08/03	32	09/01	29	10/01	30	11/02	32	12/03	31	52
53	01/06	33	02/04	29	03/06	30	04/06	31	05/05	29	06/04	30	07/06	32	08/04	29	09/02	29	10/02	30	11/03	32	12/04	31	53

Sample portion of 1998 Meter Reading Schedule

[1] A copy of the SCE 1998 Meter Reading Schedule can be found in the ESP Handbook, provided on the ESP Website.

7.6.B.3. Special reads

If SCE is the MDMA, special meter reads outside the normal read schedule are available if there is a question regarding the accuracy of a read. ESP requested "check reads" are worked within 5 days of the request, pending access to the meter. A service charge will be added for check reads if the original read was accurate. Fees for Special Reads are found in the Energy Service Providers - Service Fees 'catalog identified in the "Special Metering Services" section.

If SCE is not the MDMA and there is a question regarding the accuracy of a read, SCE will contact the ESP via e-mail or phone call.

7.6.B.4. Third party access to SCE's meter data

SCE will provide third parties access to meter data collected by IDR devices. The access will be via modem and subject to the following rules/restrictions:

1) The access will be "read only".
2) The device allows only one read at a time. In order to safeguard SCE's access to the data, the third party must not attempt to read the meter between 7 a.m. and 3:30 p.m. within 2 calendar days of the scheduled read date or 2 calendar days after read date.
3) If the third party attempts to read the meter while SCE is extracting the data during a scheduled read, the third party will be unable to connect and will have to re-try later.
4) Prior to SCE connecting the modem to the device, the third party must:
    - have a phone line installed on the same wall and within 2 to 3 feet of the meter.
    - ensure that the phone line is installed and operating.
    - provide SCE with the phone number.
    - notify the customer that SCE will be arriving to connect the phone line to the meter.

After receiving the information from the third party that they have completed all the steps in #4 above, SCE will connect the phone line to the device ($65 per hour) then call the instrument and install a password giving the third party read-only capability. SCE will then notify the third party that access is available.

7.6.B.5. Providing Data to Scheduling Coordinators

The MDCS Decision requires that MDMAs provide Scheduling Coordinators (or their designated agents) reasonable and timely access to meter data as required. SCE provides meter data for each ESP in its own mailbox on the server which is accessible via password. In order to provide this data to its Scheduling Coordinators, an ESP will need to provide its password to its Scheduling Coordinators.

7.6.B.6. Missing Usage on MDMA Server

As noted above (section 7.6.B), Rule 22 and the MDCS Decisions establish timeliness requirements for the delivery of data. Ninety-nine point ninety-nine percent must be available within 5 days of the scheduled read date of the meter. (The PSWG Report is recommending that the CPUC reduce this last requirement to 99%).

When usage is not available in SCE's mailbox on the MDMA's server 5 days after the scheduled read date, SCE will notify the ESP via a MASR that the usage is missing (see Section 7.7 for MASR Information). Per Rule 22, Sections G(8) and N, the ESP/MDMA has 3 calendar days to correct the problem before SCE can cure the defect at the ESP's expense. SCE will wait an additional 3 calendar days. If the data is still missing 11 calendar days after the scheduled read date, SCE will estimate the usage and calculate the bill. Subsequently, SCE will invoice the ESP for the charges associated with effecting this cure. (The invoicing process is not yet operational but will be in the near future).

7.6.B.7. Non-Routine Meter Reads by MSPs

The MDCS Decision separates the functions of MDMAs and MSPs; MSPs are not qualified as meter readers. However, SCE supports the proposal to modify the decision to allow MSPs to retrieve non-routine reads as a backup for the MDMA provided the MSP is acting as a sub-contractor to the MDMA. The MDMA is responsible for obtaining the data from the MSP, validating, editing and estimating the data, and delivering the usage

to SCE's mailbox on the MDMA server. The ESP is responsible for the performance of its MDMAs.

7.6.B.8. Providing Missing Data on Meter Change between ESPs

When a customer switches ESPs and a meter is changed, there may be elapsed time between the meter removal and the new meter set when usage was occurring but not being recorded. Usage needs to be estimated for this period of time. The MDMA of the former ESP should provide this estimated usage, since it has historical usage upon which to base an estimate. The new ESP will need to communicate to the former ESP what time the new meter was set so that the former ESP can communicate this to its MDMA who will then estimate usage for the period between the meter removal and the new meter set.

7.6.B.9. Posting of Partial Day's Usage

SCE will accept the posting of a partial day's usage by an external MDMA for:

1) meter changes;

2) DASR switches not requiring a meter change;

3) routine reads (this is not to be confused with accepting data with gaps during a billing period).

In the case of meter changes and DASR switches not requiring a meter change, the final bill will be calculated through the time of the meter change. SCE will not schedule load for that day.

Routine billing periods for accounts employing interval metering begin on the date and time of the previous bill period end date and time, and end on the date and time of the meter read. All times are normalized to a 15-minute interval boundary.

7.6.B.10. Conformance Policy

Effective September 1, 1998, SCE will be tracking the performance of MDMAs in its service territory to identify patterns of non-conformance.

As defined in Rule 22 and MDCS Decision, a pattern of non-conformance occurs when

- more than 1% of the service accounts for the MDMA or 5 accounts (whichever is greater) are found to be non-conforming and are not cured within the first 6 months of direct access

or

- more than 0.5% of the service accounts or 3 accounts (whichever is greater) are found to be non-conforming and are not cured during any six consecutive months thereafter.

If a pattern of non-conformance is identified, the ESP will be notified in writing. If the non-conformance is not cured in a timely manner, the ESP's customers served by the non-conforming MDMA will revert back to bundled service.

7.6.C. Access Policy:

SCE would like to partner with each ESP in providing quality customer service (e.g., access to the meter). SCE's Meter Reading Services includes an innovative access program utilizing various meter reading technologies, workforce stability and experienced resources.

The following is SCE's standard access policy if an SCE meter reader is unable to obtain physical access to a meter. The access policy will include the following procedures to be performed before contacting the ESP for assistance in obtaining permanent access:

Note: SCE will automatically attempt to read the meter Days 1–5.

Day 1 SCE "Notice of Call" left at service account with contact phone number and attempt to reach customer by phone for next day access.

Day 2 The field attempts to reread the meter and attempts to reach the customer by phone a second time.

Day 3 Continued field attempts to reread the meter.

Day 4 The first of two "5-day Access Letters" (letter 1) is mailed to customer's service account

Day 5-8 IDR: Usage will be estimated five days after the Scheduled Read Date for the midnight posting to the MDMA.

NON-IDR: Usage will be estimated four days after the Scheduled Read Date for the midnight posting to the MDMA.

Day 9 The second of two "5-day Access Letters" (letter 2) is mailed to customer's service account via registered mail.

Day 10-14 Wait for customer response to second access letter mailed.

Day 15 ESP is notified of the access condition.

The purpose of Letter 1 & 2 are as follows:
Letter 1: Request to customer to contact local SCE Service Center to provide access to meter.
Letter 2: Reminder to customer to contact local SCE Service Center and notification that customer's ESP will be contacted to assist in access arrangements.

7.7. Metering Agent Service Request (MASR) Process

The Metering Agent Service Request is the communication method by which SCE and ESPs request meter or meter reading services of each other and notify each other of changes involving meters or meter reading. A copy of the MASR can be found in the Chapter 7 Appendix J. **Please note that in the event of a hazardous condition, the ESP should contact SCE's 24-hour emergency number at (800) 611-1911.**

MASR requests may originate from three (3) areas:

- customer
- SCE
- ESP

Examples of requests for service include metering problems, hazardous conditions, requests for reads and DA billing inquiries. Examples of notification of changes include changes in access to a customer's meter (dogs, locked gates, etc.) and changes in field conditions (dangerous situations).

Where SCE is the responsible party (MSP for metering or MDMA for meter reading) end-use customers will submit these requests for service or notification of changes to SCE's DA ESP Support Center at 1-800-799-4723. ESPs will submit these requests/changes to SCE's Meter Operations Support Desk (MOSD) at (800) 203-4634 or via e-mail to *metering@SCE.com*.

Where the ESP is the responsible party, SCE will submit requests/changes via MASR e-mailed to the ESP.

7.7.A. Hazardous Conditions

SCE is responsible for the maintenance of electricity distribution to customers. Therefore, in the case of a report of a hazardous condition involving a meter, even if SCE is not the MSP, SCE will remove the IDR meter and replace it with a cumulative meter. If the meter is not involved, SCE will repair the hazard and notify the ESP of the hazardous condition repairs.

If SCE is not the MSP and the IDR meter was replaced with a cumulative meter, the Meter Operations Support Desk will contact the ESP to schedule a meter replacement. The Meter Operations Support Desk will send a MASR to the ESP via e-mail noting the agreed-upon meter replacement date. When the ESP completes the scheduled work, the ESP will update the MASR and send it via e-mail to the Meter Operations Support Desk (*metering@SCE.com*). The ESP will mail the cumulative meter to SCE's Corporate Warehouse at:

Southern California Edison - Corporate Warehouse
Attention Receiving Clerk - ESP
14660 Chestnut Street
Westminster, CA 92683.

If SCE is the MSP, the Meter Operations Support Desk will open a MASR, SCE will perform the meter replacement and the Meter Operations Support Desk will inform the ESP of meter change or repair information.

7.7.B. Non-hazardous Conditions

When SCE receives reports of non-hazardous metering problems including requests for check reads and meter tests, if SCE is the MSP or MDMA, SCE will perform the work and notify the requesting party of the services performed and the results.

If SCE is not the MSP/MDMA, SCE will notify the ESP of the request via a MASR.

APPENDIX

Attention Electric Service Providers:

This section contains sample forms for certain types of communications between the ESP and Southern California Edison. Detailed directions for completion can be found following the form, where applicable. Should you have any questions regarding the completion of any of the attached forms, please do not hesitate to contact Southern California Edison's Metering Information Desk at 1-800-203-4634.

Metering Department
Southern California Edison

Appendix A: Supplying Meter Number Information to SCE

Directions: Where applicable, please provide the following information regarding meters to be used for direct access customers within the SCE area. Use Part A for single meters, and Part B for more than one meter that SHARE IDENTICAL ATTRIBUTES except for meter numbers and communication ID ŝ. For Part B, the meter numbers must increment by one in sequence with serial number and communication ID ŝ. If not, an electronic file must be received by SCE with that information.

Part A - For single meters

Unique meter identifier _____ *(as it appears on meter nameplate, 12 characters max.)*
Manufacturer serial number _____
Manufacturer _____
Model _____
AEP standard code _____
Metering Service Provider company _____
Communication ID: ERT number _____ Internal ID _____

Part B - For multiple meters

Total number of meters _____
Beginning unique meter identifier _____
Ending unique meter identifier _____ *(must equal total meters + beginning number - 1)*
Beginning serial number _____
Ending serial number _____ *(must equal total meters + beginning serial number - 1)*
Beginning communication ID _____
Ending communication ID _____ *(must equal total meters + beginning com. ID - 1)*
Communication ID type: ERT (Y/N) ____ Internal ID (Y/N) ____ Other (Y/N) _____
Manufacturer _____
Model _____
AEP standard code ___
Metering Service Provider company _____

Part C - Required with Part A or B

Meter attributes:
Form _____
Voltage _____
Test amps _____
Class code _____
Meter Kh _____
Programmed Kh _____
Dial K _____
Register ratio _____/_____
Pulse R/I _____/_____
Optical port (Y/N) _____
Remote optcl port (Y/N) _____
Radio communicte (Y/N) _____
Pgm ID name _____

ESP E-mail: _____

Measurement capability (Y/N):
kWh _____ kW _____ kVARH _____
kVAR _____ TOU _____ IDR _____
Meter displays/records following measurements:
kWh w/ _____ number of dials, with _____ decimal values
kW w/ _____ number of dials, with _____ decimal values
kVARH w/ _____ number of dials, with _____ decimal values
kVAR w/ _____ number of dials, with _____ decimal values
TOU reads for the following rate periods:
kWh: On _____ Off _____ Mid _____ Super Off _____
kW : On _____ Off _____ Mid _____ Super Off _____
Interval Data:
# of channels _____ interval length _____ memory size _____ K
Demand Data:
Interval length _____ and full scale maximum read _____

Part D - For SCE Use Only

Completed By @ SCE: _____ **Date:** _____ **Date Returned:** _____

Appendix A: Supplying Meter Number Information to SCE

Sample of form completed for 'single meters'

Part A - For single meters

Unique meter identifier ___*04F0123Y5678*____ *(as it appears on meter nameplate, 12 characters max.)*
Manufacturer serial number __*123Y5678*_____
Manufacturer ____*Schlumberger*____
Model _____*Vectron*_____
AEP standard code __*04F*____
Metering Service Provider company __*Acme Metering, Inc.*_
Communication ID: ERT number __*n/a*___ Internal ID ____*0012345678*_____

Part B - For multiple meters

Total number of meters _____
Beginning unique meter identifier _____
Ending unique meter identifier _____ *(must equal total meters + beginning number - 1)*
Beginning serial number _____
Ending serial number _____ *(must equal total meters + beginning serial number - 1)*
Beginning communication ID _____
Ending communication ID _____ *(must equal total meters + beginning com. ID - 1)*
Communication ID type: ERT (Y/N) ____ Internal ID (Y/N) ____ Other (Y/N) _____
Manufacturer _____
Model _____
AEP standard code ___
Metering Service Provider company _____

Part C - Required with Part A or B

Meter attributes:
Form ____*5S*____
Voltage _____*480*_____
Test amps ____*5.0*_____
Class code _____*20*_____
Meter Kh _____*4.8*_____
Programmed Kh _*4.8*_____
Dial K _____*1*_____
Register ratio __*n/a*__/_____
Pulse R/I __*n/a*__/_____
Optical port (Y/N) __*Y*_____
Remote optcl port (Y/N) __*N*___
Radio communicte (Y/N) __*N*___
Prgrm ID name _____*03*_____

ESP E-mail: _____

Measurement capability (Y/N):
kWh ___*Y*_____ kW ____*Y*____ kVARH ___*N*_____
kVAR ____*N*____ TOU _____ IDR ____*Y*_____
Meter displays/records following measurements:
kWh w/ __*5*____ number of dials, with ___*0*_____ decimal values
kW w/ ___*5*_____ number of dials, with ____*2*____ decimal values
kVARH w/ *n/a*____ number of dials, with _____ decimal values
kVAR w/ __*n/a*____ number of dials, with _____ decimal values
TOU reads for the following rate periods:
kWh: On _____ Off _____ Mid _____ Super Off _____
kW : On _____ Off _____ Mid _____ Super Off _____
Interval Data:
# of channels _*1*__ interval length __*15*__ memory size ___*32*_ K
Demand Data:
Interval length __*15*___ and full scale maximum read ____*999.99*___

Part D - For SCE Use Only

Completed By @ SCE: _____ **Date:** _____ **Date Returned:** _____

Appendix A: Supplying Meter Number Information to SCE

Sample of form completed for multiple meters'

Part A—For single meters

Unique meter identifier _____ *(as it appears on meter nameplate, 12 characters max.)*
Manufacturer serial number _____
Manufacturer _____
Model _____
AEP standard code _____
Metering Service Provider company _____
Communication ID: ERT number _____ Internal ID _____

Part B—For multiple meters

Total number of meters *100*
Beginning unique meter identifier *Z9G001234567*
Ending unique meter identifier *Z9G001234666* *(must equal total meters + beginning number - 1)*
Beginning serial number *1234567*
Ending serial number *1234666* *(must equal total meters + beginning serial number - 1)*
Beginning communication ID *0512345000*
Ending communication ID *0512345099* *(must equal total meters + beginning com. ID - 1)*
Communication ID type: ERT (Y/N) *Y* Internal ID (Y/N) *N* Other (Y/N) *N*
Manufacturer *ABB*
Model *ABS*
AEP standard code *Z9G*
Metering Service Provider company *n/a*

Part C—Required with Part A or B

Meter attributes:
Form *12S*
Voltage *120*
Test amps *30.0*
Class code *200*
Meter Kh *14.4*
Programmed Kh *n/a*
Dial K *1*
Register ratio *13 8/9*
Pulse R/I *n/a* / _____
Optical port (Y/N) *N*
Remote optcl port (Y/N) *N*
Radio communicte (Y/N) *Y*
Prgrm ID name *n/a*

ESP E-mail: _____

Measurement capability (Y/N):
kWh *Y* kW *N* kVARH *N*
kVAR *N* TOU *N* IDR *N*
Meter displays/records following measurements:
kWh w/ *5* number of dials, with *0* decimal values
kW w/ *n/a* number of dials, with _____ decimal values
kVARH w/ *n/a* number of dials, with _____ decimal values
kVAR w/ *n/a* number of dials, with _____ decimal values
TOU reads for the following rate periods: *(n/a)*
kWh: On _____ Off _____ Mid _____ Super Off _____
kW : On _____ Off _____ Mid _____ Super Off _____
Interval Data: *(n/a)*
# of channels _____ interval length _____ memory size _____ K
Demand Data: *(n/a)*
Interval length _____ and full scale maximum read _____

Part D—For SCE Use Only

Completed By @ SCE: _____ **Date:** _____ **Date Returned:** _____

Appendix B: Meter Investigation

Meter Investigation Form
Instruction Sheet

Purpose

The Meter Investigation Form (MI) is used by SCE to communicate metering information to ESPs. It provides information on the current meter or meters installed at a site and shows those options available to the ESP which will result in the site being ready for Direct Access, along with the cost of those options. A section of the form is designated for the ESP to indicate which options have been selected. The form also includes contact information for SCE's Metering Operations.

General Instructions

1. MI forms will be mailed or faxed to the designated ESP metering contact.
2. A response to an MI is expected within 15 business days. *If no response is received by the 15th business day, the DASR that initiated the MI will be canceled*.
3. Scheduling of meter installations or other work associated with a meter investigation will occur after the MI is returned to SCE by the ESP. SCE's Scheduling Coordinator will contact the ESP to negotiate specific dates.
4. Please type this form or print in black ink.
5. Send completed forms by fax or mail to:

   Mail: SCE Metering Operations
   CTAC - Bldg. 6042
   6042 Irwindale Ave.
   Irwindale, CA 91702

   FAX: (626)633-3192

6. Please make a copy of the completed MI form for your records.
7. If you have any questions, please call:

   Metering Operations Support Desk at (800) 203-4634

Meter Investigation Form
Instructions for Preparation

Heading Information

This section shows the code for the Electric Service Provider (ESP), the SCE Account Number for the MI, the Customer Name, the Zip Code and Zone Code for the account.

Existing Metering Information section

This section shows information on the existing meter and identifies whether a joint meet is required for new meter installations. The following information is provided:

Site DA Ready checkbox:

> If checked, designates a site where demand history is <50kW, but for which SCE received a request for a meter owner change. A meter change is not required, but may be elected if the ESP so desires. In that case, the ESP must provide the meter that will be installed.
>
> If not checked, a meter change is required before the account can be switched to Direct Access.

Joint Meet checkbox:

> If the ESP is certified to install meters, this box will be checked if SCE must meet the ESP representative at the site.

Information about meter location and access instructions.

Specific information about the meter(s) installed at the site. If more than one meter is installed, additional pages are provided. The information about an individual meter is enclosed within a rectangular box.

Center section - General Information, Installation Options, Meter Reading Information

General Information: SCE's identification number for this MI, and the address for this location.

SCE Installation Metering Options:

> SCE Provided Metering Option 1 Basic Meter - shows the type of meter, the SCE material code, the meter cost and the installation cost for a basic meter which could be installed at this site. Please note that the total cost for this option is the meter cost plus the installation fee.
>
> SCE Provided Metering Option 2 Basic Meter Plus - shows the type of meter, the SCE material code, the meter cost and the installation cost for an enhanced meter which could be installed at this site. Please note that the total cost for this option is the meter cost plus the installation fee.
>
> ESP Provided Metering Options - Prior approvals are required for this option. Please see Section IV of this Chapter. If such approval has been secured, the meter should be sent to the address shown on the MI form. The meter must be received at least 6 days prior to the scheduled installation date to allow time for internal SCE handling.

ESP Installation Metering Options:

> The installation date must still be agreed to by both the ESP and SCE. If the removed meter belongs to SCE, it must be returned within 5 business days to the location identified on the MI form. Regardless of who owns the removed meter, the Basic Install/Remove Notification must be sent within 3 business days to the location identified on the MI form. Instructions for completing the Basic Install/Remove Notification are found elsewhere in this document.

Meter Reading Information:

> The SCE cycle number and the three next scheduled read dates are shown in this section.

Meter Investigation Form
Instructions for Preparation *(continued)*

Meter Investigation Response from ESP Section

This section is provided for the ESP to indicate the options that have been selected for this account.. Yes/No checkboxes are provided in each section, so that the applicable section can easily be identified. If the No checkbox is marked, no further information is needed for that section. If the Yes checkbox is marked, the following instructions apply:

SCE Metering Equipment: Indicate your selection (by checking the appropriate box) as to whether the Basic or Basic Plus type of meter should be installed by SCE. Note that the middle section of the form identifies the type of meter which will be installed and the price for the meter, along with the installation cost.

ESP Metering Equipment: Write in the appropriate AEP number range that corresponds to the meter or meters that will be installed by SCE for the Meter Investigation being submitted. The lower left hand corner of the Meter Investigation form provides an entry space for the AEP Starting # and AEP Ending # for each page (each page depicts the attributes specific to the meter listed on the page). Since each AEP number is specific to a meter type, you may be providing multiple ranges that correspond to various meters for one meter Investigation. If a modem will be installed please check the appropriate box. The meter or meters should be sent to the location identified in the center section of the firm. A sample of the Meter Investigation form is included in this Section of Appendix B.

ESP Installs Metering: Write in the certification number, name, address and phone number of the MSP that will install the meter for this location. If the joint meet box is checked on the upper left portion on the form, the ESP ŝ requested joint meet date and time should be filled in here. SCE ŝ Scheduling Coordinator will contact the ESP to confirm a date and time agreeable to both parties. Note that the ESP Meter Return Date must be within 5 days after the install date, and the ESP Meter Install Record Return Date must be within 2 days after the install date.

Meter Ownership Changes: The ESP should fill in the Current Owner name and address and the New Owner name and address, along with the proposed effective date of the ownership transfer.

Note: *The Meter Investigation form is being revised at the time of this publication in March, 1998. The revisions are in the area of meter ownership and MDMA information. SCE will begin to send the revised forms in the near future.*

Additional Information section

Any specific special instructions or additional information unique to this Meter Investigation will be shown in this section.

SCE Meter Investigation—(MI) for Electric Service Provider

Meter Investigation for Service Account— *Customer Name*:

Existing Metering Information *Contact:.* *Phone:* *FAX:*

Account Tariff Rate: GS-2
Site DA Ready o Joint Meet? o
Meter Location: Left Outside Wall
Meter Reading Instructions
ENT DR TO THE RIGHT.
RING BELL ON INSIDE WALL

Meter Number	
Manufacturer	
Model	
Serial #	
Meter Class	
Meter Kh	
Billing Constant	
Register Constant	
Register Ratio	
Number of Dials	
Form	
Purchase Year	
No. of CTs	
CT Ratio	
No. of PTs	
PT Ratio	
No. of Phases	
No. of Wires	
Delta/Wye	
Service Voltage	
Meter Voltage	
KYZ Output	

If ESP Equipment Enter AEP Range

ESP New Meter Information
AEP Starting # _____
AEP Ending # _____
Specific Meter AEP# _____

General Information

Meter Investigation #	257
Customer Address	

SCE Installation Metering Options

SCE Provided Metering Options—Zone (3)	
Opt 1. Basic Meter	**N/A**
SCE Material Code	
Installation Cost	
Opt 2. Basic Meter Plus-	**Datastar-$1,538.00***
SCE Material Code	
Installation Cost	$214.00*

ESP Provided Metering Options ***SCE Approval Required*	
Meter Must Be Received 6 Days Prior to Install Date	Ship ESP Meter To:
	SCE Westminister Warehouse
	Attn: Receiving Clerk—ESP
	14660 Chestnut St.

*Note: Meter & Installation Charges Are NOT Combined

ESP Installation Metering Options—N/A*

Meter Must Be Returned within 5 Days after Install Date	Return SCE Meter To:
Fee for Non-Returned Meters—$275	
Meter Installation Record Must Be Returned in 2 Days after Install Date	Return SCE Meter Record To:

Meter Reading Information

Read Schedule Is for This Account's Billing Cycle	Next 3 Scheduled Reads
	Cycle = 53
	1/6/98, 2/4/98, 3/6/98

Meter Investigation

Metering Equipment Selec

Option 1—SCE Metering Equipmen	
SCE Provided Meter	
Option 2—ESP Metering Equipmen	
Modem Required for ESP Mete	
Option 2—Requires AEP# Ran —Enter Information on Low	
	SCE Metering Ope
SCE	CTAC—Bldg 6042
Address	6042 Irwindale Av
Phone	Irwindale, CA 917

ESP Installs Metering

ESP Sets Meter	
Joint Meet Time	
ESP Set Date	
ESP Meter Return Date	
ESP Meter Install Record Return Date	
MSP Certification #	
MSP	SCE Metering Ope
Name	CTAC—Bldg 6042
Address	6042 Irwindale Av
Phone#	Irwindale, CA 917

Meter Owners

Current Owner	Southern Cal
Current	Southern California
Owner	P.O. Box 800
Address	Rosemead, CA 91
New Owner	
New	
Owner	
Address	

Additional In

SCE Meter Investigation—(MI) for Electric Service Provider

Meter Investigation for Service Account— *Customer Name*:

Existing Metering Information *Contact:.* *Phone:* *FAX:*

Account Tariff Rate: GS-2
Site DA Ready o Joint Meet? o
Meter Location: Left Outside Wall
Meter Reading Instructions
ENT DR TO THE RIGHT.
RING BELL ON INSIDE WALL

Meter Number	
Manufacturer	
Model	
Serial #	
Meter Class	
Meter Kh	
Billing Constant	
Register Constant	
Register Ratio	
Number of Dials	
Form	
Purchase Year	
No. of CTs	
CT Ratio	
No. of PTs	
PT Ratio	
No. of Phases	
No. of Wires	
Delta/Wye	
Service Voltage	
Meter Voltage	
KYZ Output	

ESP New Meter Information
AEP Starting # _____
AEP Ending # _____
Specific Meter AEP# _____

General Information

Meter Investigation #	
Customer Address	

SCE Installation Metering Options

SCE Provided Metering Options— Zone (3)	
Opt 1. Basic Meter	**N/A**
SCE Material Code	
Installation Cost	
Opt 2. Basic Meter Plus-	
SCE Material Code	
Installation Cost	

ESP Provided Metering Options ***SCE Approval Required*	
Meter Must Be Received 6 Days Prior to Install Date	Ship ESP Meter To:
	SCE Westminister Warehouse
	Attn: Receiving Clerk— ESP
	14660 Chestnut St.
	Westminister, CA 92683

*Note: Meter & Installation Charges Are NOT Combined

ESP Installation Metering Options— N/A

Meter Must Be Returned within 5 Days after Install Date	Return SCE Meter To:
	XXXXXXXXXXXXXXXXXX
	XXXXXXXXXXXXXXXXXX
	XXXXXXXXXXXXXXXXXX
	XXXXXXXXXXXXXXXXXX
Fee for Non-Returned Meters— $275	
Meter Installation Record Must Be Returned in 2 Days after Install Date	Return SCE Meter Record To:
	XXXXXXXXXXXXXXXXXX
	XXXXXXXXXXXXXXXXXX
	XXXXXXXXXXXXXXXXXX
	XXXXXXXXXXXXXXXXXX

Meter Reading Information

Read Schedule Is for This Account's Billing Cycle	

Meter Investigatio

Metering Equipment Se

Option 1— SCE Metering Equipn	
SCE Provided Meter	
Option 2— ESP Metering Equipn	
Modem Required for ESP M	
Option 2— Requires AEP# — Enter Information on	
	SCE Metering
SCE	CTAC— Bldg 6
Address	6042 Irwindale
Phone	Irwindale, CA 9

ESP Installs Meter

ESP Sets Meter	
Joint Meet Time	
ESP Set Date	
ESP Meter Return Date	
ESP Meter Install Record Return Dat	
MSP Certification #	
MSP	SCE Metering
Name	CTAC— Bldg 6
Address	6042 Irwindale
Phone#	Irwindale, CA 9

Meter Own

Current Owner	Southern
Current	Southern Califo
Owner	P.O. Box 800
Address	Rosemead, CA
New Owner	
New	
Owner	
Address	

Additiona

Appendix C: SCE Acknowledgment

Acknowledgment

ESP Information (send acknowledgment to):

ESP Name: _____
Address: _____
City/State/Zip: _____
Contact Name: _____
Phone: _____
Fax: _____
E-mail: _____

Account Information:

Service Account #: _____
Customer Name: _____
Address: _____
City/State/Zip: _____
Contact Name: _____
Phone: _____
E-mail: _____

SCE Meter Number: _____
Date DASR submitted to SCE: _____

Acknowledgment of Choices Selected:

SCE Metering Option: ❑ Basic OR ❑ Basic Plus

ESP Equipment to be installed by SCE: ❑ YES ❑ NO

(not currently applicable) ESP to install ESP equipment?: ❑ YES ❑ NO

(not currently applicable) Joint Meet required: ❑ YES ❑ NO

Installation Date: _____

Appendix D: Return Meter

ESP Return Meter Information

ESP Information (SCE to return ESP meter to):

ESP Name: _____
Address: _____
City/State/Zip: _____
Contact Name: _____
Phone: _____
Fax: _____
E-mail: _____

Appendix E: Basic Install/Remove Notification

Complete this form for each meter installed/removed

Meter Type: (circle one) kW kVAR Recorder

General Information:
SCE Account Number: _____ Meter Investigation :_____
Date Sent to SCE: _____

Customer Name: _____
Service Address: _____
Service City: _____

	"old" **AS FOUND METER**		"new" **AS LEFT METER**
Meter Owner Name			
Meter Owner Street Address			
Meter Owner City Address			
Meter Service Provider Name			
MSP Street Address			
MSP City Address			
MSP Phone Number			
Electric Service Provider Name			
MDMA Service Provider			
Meter Number			
Serial Number			
Manufacturer			
Model			
Meter Class			
Form Configuration			
Meter voltage			
Meter Amps			
Service Voltage			
Number of Phases			
Number of Wires			
Delta/Wye			
CT Number			
CT Ratio			
PT Number			
PT Ratio			
KYZ Output			
Disk Constant			
Pulses per Disk Revolution			
Dial Constant			
Billing Constant			
Register Constant			
Register Ratio			
Number of Dials			
Recorder Number, if applicable			
Time and Date of Event			
Special Meter Read Instructions			
Field Conditions Satisfactory? Y/N			
Hazardous Condition Code			
Meter Disposition			
Meter reads:			
kW			
kWh			
kVARh			

Appendix F: 1998 Meter Reading Schedule —ESM –14.41.6)

Cycle	Jan	Days	Feb	Days	Mar	Days	Apr	Days	May	Days	Jun	Days	Jul	Days	Aug	Days	Sep	Days	Oct
51	01-02	31	02-02	31	03-04	30	04-02	29	05-01	29	06-02	32	07-01	29	07-31	30	08-31	31	09-30
52	01-05	33	02-03	29	03-05	30	04-03	29	05-04	31	06-03	30	07-02	29	08-03	32	09-01	29	10-01
53	01-06	33	02-04	29	03-06	30	04-06	31	05-05	29	06-04	30	07-06	32	08-04	29	09-02	29	10-02
54	01-07	33	02-05	29	03-09	32	04-07	29	05-06	29	06-05	30	07-07	32	08-05	29	09-03	29	10-05
55	01-08	31	02-06	29	03-10	32	04-08	29	05-07	29	06-08	32	07-08	30	08-06	29	09-04	29	10-06
56	01-09	31	02-09	31	03-11	30	04-09	29	05-08	29	06-09	32	07-09	30	08-07	29	09-08	32	10-07
57	01-12	33	02-10	29	03-12	30	04-10	29	05-11	31	06-10	30	07-10	30	08-10	31	09-09	30	10-08
58	01-13	33	02-11	29	03-13	30	04-13	31	05-12	29	06-11	30	07-13	32	08-11	29	09-10	30	10-09
59	01-14	33	02-12	29	03-16	32	04-14	29	05-13	29	06-12	30	07-14	32	08-12	29	09-11	30	10-13
60	01-15	31	02-13	29	03-17	32	04-15	29	05-14	29	06-15	32	07-15	30	08-13	29	09-14	32	10-14
61	01-16	31	02-17	32	03-18	29	04-16	29	05-15	29	06-16	32	07-16	30	08-14	29	09-15	32	10-15
62	01-19	33	02-18	30	03-19	29	04-17	29	05-18	31	06-17	30	07-17	30	08-17	31	09-16	30	10-16
63	01-20	33	02-19	30	03-20	29	04-20	31	05-19	29	06-18	30	07-20	32	08-18	29	09-17	30	10-19
64	01-21	33	02-20	30	03-23	31	04-21	29	05-20	29	06-19	30	07-21	32	08-19	29	09-18	30	10-20
65	01-22	31	02-23	32	03-24	29	04-22	29	05-21	29	06-22	32	07-22	30	08-20	29	09-21	32	10-21
66	01-23	31	02-24	32	03-25	29	04-23	29	05-22	29	06-23	32	07-23	30	08-21	29	09-22	32	10-22
67	01-26	33	02-25	30	03-26	29	04-24	29	05-26	32	06-24	29	07-24	30	08-24	31	09-23	30	10-23
68	01-27	32	02-26	30	03-27	29	04-27	31	05-27	30	06-25	29	07-27	32	08-25	29	09-24	30	10-26
69	01-28	30	02-27	30	03-30	31	04-28	29	05-28	30	06-26	29	07-28	32	08-26	29	09-25	30	10-27
70	01-29	30	03-02	32	03-31	29	04-29	29	05-29	30	06-29	31	07-29	30	08-27	29	09-28	32	10-28
71	01-30	30	03-03	32	04-01	29	04-30	29	06-01	32	06-30	29	07-30	30	08-28	29	09-29	32	10-29

11-21 ----- Requires an additional meter read day. (Saturday)

NOTE:

All scheduled read cycles which fall outside of 27-33 days must b

Appendix G: 1999 Meter Reading Schedule —ESM –14.41.6)

Cycle	Jan	Days	Feb	Days	Mar	Days	Apr	Days	May	Days	Jun	Days	Jul	Days	Aug	Days	Sep	Days	Oc
51	01/04	33	02/02	29	03/04	30	04/02	29	05/03	31	06/02	30	07/01	29	08/02	32	08/31	29	09/3
52	01/05	33	02/03	29	03/05	30	04/05	31	05/04	29	06/03	30	07/02	29	08/03	32	09/01	29	10/(
53	01/06	33	02/04	29	03/08	32	04/06	29	05/05	29	06/04	30	07/06	32	08/04	29	09/02	29	10/(
54	01/07	31	02/05	29	03/09	32	04/07	29	05/06	29	06/07	32	07/07	30	08/05	29	09/03	29	10/(
55	01/08	31	02/08	31	03/10	30	04/08	29	05/07	29	06/08	32	07/08	30	08/06	29	09/07	32	10/(
56	01/11	33	02/09	29	03/11	30	04/09	29	05/10	31	06/09	30	07/09	30	08/09	31	09/08	30	10/(
57	01/12	33	02/10	29	03/12	30	04/12	31	05/11	29	06/10	30	07/12	32	08/10	29	09/09	30	10/(
58	01/13	33	02/11	29	03/15	32	04/13	29	05/12	29	06/11	30	07/13	32	08/11	29	09/10	30	10/1
59	01/14	31	02/12	29	03/16	32	04/14	29	05/13	29	06/14	32	07/14	30	08/12	29	09/13	32	10/1
60	01/15	31	02/16	32	03/17	29	04/15	29	05/14	29	06/15	32	07/15	30	08/13	29	09/14	32	10/1
61	01/18	33	02/17	30	03/18	29	04/16	29	05/17	31	06/16	30	07/16	30	08/16	31	09/15	30	10/1
62	01/19	33	02/18	30	03/19	29	04/19	31	05/18	29	06/17	30	07/19	32	08/17	29	09/16	30	10/1
63	01/20	33	02/19	30	03/22	31	04/20	29	05/19	29	06/18	30	07/20	32	08/18	29	09/17	30	10/1
64	01/21	31	02/22	32	03/23	29	04/21	29	05/20	29	06/21	32	07/21	30	08/19	29	09/20	32	10/2
65	01/22	31	02/23	32	03/24	29	04/22	29	05/21	29	06/22	32	07/22	30	08/20	29	09/21	32	10/2
66	01/25	33	02/24	30	03/25	29	04/23	29	05/24	31	06/23	30	07/23	30	08/23	31	09/22	30	10/2
67	01/26	33	02/25	30	03/26	29	04/26	31	05/25	29	06/24	30	07/26	32	08/24	29	09/23	30	10/2
68	01/27	30	02/26	30	03/29	31	04/27	29	05/26	29	06/25	30	07/27	32	08/25	29	09/24	30	10/2
69	01/28	30	03/01	32	03/30	29	04/28	29	05/27	29	06/28	32	07/28	30	08/26	29	09/27	32	10/2
70	01/29	30	03/02	32	03/31	29	04/29	29	05/28	29	06/29	32	07/29	30	08/27	29	09/28	32	10/2
71	02/01	32	03/03	30	04/01	29	04/30	29	06/01	32	06/30	29	07/30	30	08/30	31	09/29	30	10/2

various ----- Requires an additional meter read day. (Saturday)

All scheduled read cycles which fall outside of 27-33 days must be read within the 27 and 33 days.
Please adjust your routine reading schedule to adhere to this requirement.

Appendix H
Meter Reading and Meter Maintenance Zones

Note: At the request of stakeholder in the Avoided Cost Credit Proceeding, SCE, PG&E, and SDG&E have agreed to develop a common methodology for zones This may result in changes to this table by mid-March. Also, zones may no longer apply to meter maintenance.

Zip Code	Zone		Zip Code	Zone		Zip Code	Zone
90001	3		90266	1		90703	2
90002	3		90270	2		90704	1
90008	3		90274	3		90706	2
90022	2		90275	3		90710	3
90023	2		90277	1		90712	3
90024	3		90278	1		90713	3
90025	4		90280	2		90715	3
90032	3		90290	4		90716	3
90040	3		90292	1		90717	2
90043	3		90301	2		90720	2
90044	2		90302	2		90723	2
90046	1		90303	2		90731	3
90047	3		90304	2		90732	3
90048	3		90305	3		90740	3
90056	3		90401	3		90743	2
90059	3		90402	3		90745	3
90061	3		90403	1		90746	3
90063	2		90404	1		90801	1
90066	3		90405	1		90802	1
90069	1		90501	2		90803	1
90201	2		90502	3		90804	1
90210	3		90503	3		90805	3
90211	3		90504	3		90806	3
90212	2		90505	3		90807	3
90220	3		90601	2		90808	3
90221	3		90602	2		90810	3
90222	3		90603	3		90813	1
90230	3		90604	3		90814	1
90232	3		90605	3		90815	3
90240	3		90606	3		91001	3
90241	3		90620	3		91006	3
90242	3		90621	2		91007	2
90245	2		90623	2		91010	3
90247	2		90630	2		91011	3
90248	3		90631	3		91016	3
90249	3		90638	2		91020	1
90250	2		90640	2		91023	4
90254	2		90650	3		91024	3
90255	2		90660	3		91030	2

Appendix H:

Meter Reading and Meter Maintenance Zones

Zip Code	Zone	Zip Code	Zone	Zip Code	Zone
90260	2	90670	3	91042	5
90262	3	90680	2	91104	2
90265	4	90701	3	91107	3
91108	3	91746	3	92258	5
91214	2	91748	3	92260	2
91301	2	91750	3	92262	3
91302	2	91752	3	92264	2
91307	2	91754	3	92266	5
91310	5	91755	2	92267	5
91311	2	91759	5	92268	5
91320	2	91760	3	92270	2
91321	2	91761	2	92277	5
91340	3	91762	3	92282	5
91342	5	91763	3	92284	5
91350	3	91764	3	92285	5
91351	2	91765	3	92301	3
91354	3	91766	3	92304	5
91355	3	91767	3	92305	5
91360	2	91768	3	92307	4
91361	2	91770	3	92308	4
91362	2	91773	3	92309	5
91381	2	91775	2	92311	5
91384	4	91776	2	92313	3
91608	2	91780	2	92315	5
91701	2	91784	3	92316	3
91702	3	91786	2	92317	5
91706	3	91789	3	92320	2
91709	2	91790	3	92321	5
91710	3	91791	3	92322	4
91711	3	91792	2	92324	5
91719	3	91801	2	92325	5
91720	3	91803	3	92326	1
91722	3	92028	4	92327	5
91723	3	92210	2	92328	5
91724	3	92211	2	92332	1
91730	2	92220	5	92335	3
91731	3	92223	3	92336	2
91732	3	92225	4	92337	1
91733	3	92230	5	92339	5
91737	2	92234	2	92341	5

Appendix H:

Meter Reading and Meter Maintenance Zones

Zip Code	Zone	Zip Code	Zone	Zip Code	Zone
91739	2	92239	5	92342	2
91740	3	92240	3	92345	4
91741	3	92241	5	92346	2
91744	3	92252	5	92347	5
91745	3	92256	5	92351	5
92352	4	92506	4	92621	5
92354	1	92507	3	92625	2
92356	5	92508	4	92626	3
92357	5	92509	3	92627	3
92358	4	92530	3	92628	1
92359	4	92532	3	92630	1
92363	5	92536	5	92631	1
92364	5	92543	3	92640	4
92365	5	92544	3	92641	4
92368	5	92545	2	92646	3
92370	4	92548	3	92647	3
92371	5	92549	4	92648	2
92372	5	92551	2	92649	2
92373	3	92553	2	92651	3
92374	2	92555	3	92653	1
92376	2	92557	2	92655	3
92377	3	92561	5	92656	1
92378	5	92562	3	92657	2
92380	4	92563	3	92659	1
92382	5	92567	4	92660	3
92383	3	92570	4	92661	2
92384	5	92571	3	92662	3
92385	5	92582	4	92663	2
92386	5	92583	2	92666	4
92389	5	92584	5	92667	4
92391	5	92585	3	92668	5
92392	4	92586	2	92670	5
92394	4	92587	4	92676	5
92396	5	92590	3	92677	1
92397	4	92591	2	92678	1
92398	5	92592	2	92679	1
92399	3	92593	1	92680	1
92401	3	92595	3	92683	3
92404	3	92596	5	92686	4
92405	3	92599	5	92688	1

Appendix H

Meter Reading and Meter Maintenance Zones

Zip Code	Zone	Zip Code	Zone	Zip Code	Zone
92407	3	92604	2	92691	3
92408	4	92606	1	92692	2
92410	3	92610	1	92701	2
92411	3	92612	1	92703	2
92501	3	92614	1	92704	3
92503	3	92618	4	92705	3
92504	5	92620	1	92706	3
92707	3	93033	2	93260	5
92708	3	93035	1	93261	3
92714	5	93040	5	93265	4
92715	3	93041	2	93267	4
92717	4	93043	5	93270	4
92718	4	93060	2	93271	4
92720	3	93063	2	93272	3
92780	2	93065	2	93274	3
92782	2	93066	4	93275	4
92804	2	93067	2	93277	3
92807	4	93101	2	93283	5
92821	2	93103	2	93285	4
92823	4	93105	3	93286	3
92831	2	93108	4	93287	4
92832	3	93109	3	93291	3
92833	2	93110	3	93292	3
92835	3	93111	3	93301	5
92840	3	93117	3	93501	3
92841	3	93202	3	93505	4
92843	2	93205	5	93510	4
92844	2	93207	4	93512	5
92845	3	93208	4	93513	5
92861	4	93214	5	93514	4
92865	3	93215	3	93516	5
92866	2	93218	4	93517	5
92867	2	93219	3	93518	5
92868	2	93221	3	93519	5
92869	2	93222	4	93523	5
92870	2	93223	3	93527	5
92886	2	93225	4	93528	5
92887	2	93226	5	93529	5
93001	2	93230	3	93530	5
93003	2	93235	3	93531	5

Appendix H

Meter Reading and Meter Maintenance Zones

Zip Code	Zone	Zip Code	Zone	Zip Code	Zone
93004	2	93236	5	93532	3
93010	3	93238	4	93534	2
93012	2	93240	4	93535	2
93013	3	93244	4	93536	3
93015	3	93247	3	93541	5
93021	2	93250	3	93543	3
93022	2	93255	5	93544	5
93023	3	93256	3	93546	2
93030	3	93257	3	93550	2
93551	3				
93552	1				
93553	5				
93554	5				
93555	3				
93560	3				
93561	2				
93562	5				
93591	2				
93605	5				
93629	5				
93643	5				
93664	5				
95389	5				

Appendix I—Meters that SCE accepts and reads

- Schlumberger Data Star
- ABB A1TL
- GE TMR92

Appendix J: SOUTHERN CALIFORNIA EDISON METER PURCHASE AND INSTALLATION AUTHORIZATION FORM

Customer Name _____ Date _____ MI #(if applicable) _____

Service Address _____ City _____ Zip _____ Zone _____

Contact Name _____ Phone Number _____

Item	Qty	Price	Bill Amount
Meter (specify)			
Installation (specify zone)			
Other meter-related services (specify)			
Total Bill Amount			
Paid (Advance pay - SCE sign and date))			
Balance			

**Multiple service addresses or Meter requests may be attached to this document.*

Buyer agrees to purchase from Southern California Edison Company ("Seller") the products or services identified above Buyer shall pay the purchase price associated with these products or services within seventeen (17) days after receiving an invoice.

Buyer realizes upon receipt of payment, Seller does absolutely and unconditionally give, grant, bargain, sell transfer, set over, assign, convey, release, confirm and deliver (collectively, "Transfer") to Buyer, and Buyer accepts, the Meter(s). Title shall automatically transfer to the Buyer, under the terms and conditions set out herein, upon receipt of full payment for the Meter(s) by the Seller. Buyer should retain a copy of this document as part of Buyer's records.

Buyer further acknowledges that any of the Meters sold to the Buyer under this arrangement will be transferred by Seller subject only to the manufacturer's printed warranty in effect on the date of delivery of such Meter(s) (to the extent such warranty may be transferred by Seller to Buyer pursuant to this instrument), and further acknowledges that it has received a copy of the manufacturer's printed warranty. Seller will transfer the meters to the Buyer without any representation or warranties, express, implied or statutory, of any kind whatsoever by Seller. Without limiting the generality of the foregoing, Buyer acknowledges that, with respect to any meters obtained under this arrangement, Seller expressly disclaims and negates, to the fullest extent permitted by law: (a) any implied or express warranty of merchantability; (b) any implied or express warranty of fitness for particular purpose; and (c) any implied or express warranty arising from usage of trade or course of dealing. In no event shall Seller be liable for any damages which arise in connection with or as a result of the Meter(s), including, but not limited to, consequential damages.

Buyer is authorized to purchase the identified products or services and is submitting this Meter Purchase and Installation Form as of the day and year signed below, with the intent to be contractually bound.

BUYER:

By: _____ Date: _____

Name:

Title

Appendix K: Southern California Edison

Metering Agent Service Request

Requestor Information

MASR	Received Date	Sent By	Phone #	Requested By	Date Discovered
402					
Ticket 101	5/8/98	Elton S. Yackenbush		Phil Santana	**05/07/98**

Entity Name	Street	City	State
APNX	40 N 855th Street	Soupvulle	PN

Site Information

Service Account	Site Customer Name:	Meter ID #	Current Meter
258606328	Albetty's Inc. # 1984	KZF014-498052	

Street	City	State	Zip Code:
13 HENDERSON	PORTERVILLE	PNA	92612- 4568

Non-Hazardous **Hazardous**

Service Request Information

Equipment Request: **Meter Sale** **Requested Complete By** 5/14/98

Service **Form** **Meter**

Failed Meter Accuracy **Field Conditions Report:** **Change in Read Frequency / Schedule:**

Meter Read - Customer Request: **Usage Adjustment:** **Non-Compliant:**

Billing Adjustment **Meter Configuration / Information Adjustment:**

Comments: Missing Kvar Channel__Span: 4/1-4/9/98. Please submit missing read data.

Please return this form to: metering@sce.com
Southern California Edison Metering Operations Support Desk

The ESP Handbook

Chapter 15
Obtaining Consumer Usage and Metering Information

Version 2.5
November 23, 1998

Chapter 15: Obtaining Consumer Usage and Metering Information

SCE is committed to providing timely and accurate information to its customers or their authorized agents, including ESPs, in accordance with CPUC and SCE guidelines.

Prospective ESPs may access an array of information about SCE customers. This information includes:

- Non-confidential information
- Standard confidential end-user information
- Basic meter information
- Interval data (if available)
- Statistical load profiling information (if applicable)

15.1. Non-Confidential Information

On October 9, 1997, the California Public Utilities Commission (CPUC) approved the release of certain customer-specific energy usage information to Electricity Service Providers and others requesting the information. The information SCE will provide, which is called the non-confidential customer information database (NCDB), includes twelve (12) months of individual usage history for most of SCE's approximately four million customers, omitting confidential customer identification information such as the customer's name and address. The CPUC has ordered SCE to make the NCDB available.

Information for residential customers includes:

- Five-digit zip code
- Rate category
- Monthly usage
- Meter read date

Information for non-residential customers includes:

- First three digits of the zip code
- The first two digits of the standard industrial code
- Rate category
- Monthly usage
- Meter read date

Monthly usage is based on the last available energy usage data, up to twelve (12) months, for the period of October 1996 through September 1997. SCE screened the customer information using procedures designed to preserve the confidentiality of customer

identity, and omitted some customers or combine some zip code categories. Customers with usage of 500 kW or above (those customers on rate schedule TOU-8) were not included due to confidentiality considerations.

The cost of an individual copy of the NCDB is $920.13.

If you are interested, please complete a NCDB order form. To obtain an order form, please contact ESP Services at (888) 371-3777.

15.2. Standard Confidential Customer Information

Confidential information includes energy usage and billing histories on a customer-specific basis. Standard confidential customer information includes:

- Customer name
- Service account number
- Service address
- Billing address
- Rate schedule
- Usage data by peak, by month, default 12 months (includes read date, number of days in billing cycle, kW, kWh, KVAR), if applicable
- Revenue (total billed, by peak, by month), if applicable
- SIC code
- Service voltage

ESPs will receive this standard information automatically in the process of completing the Direct Access Service Request (DASR), provided the customer is switching from bundled service to Direct Access. Effective December 1, 1998 this information will be sent via the California Metering Exchange Protocol (CMEP) format. Customer information released as part of processing a DASR will be released no later than 5 days before the DASR effective date.

In addition, ESPs can obtain this data in advance of the DASR process by obtaining signed authorization forms from the customer allowing the release of this information. ESPs should use the Customer Information Service Request (CISR) to obtain the required authorizations and to obtain customer data in advance of the DASR. The CISR authorizes the release of existing basic meter data, historical billing and usage records, (provided for 12 months or up to 36 months upon request) and interval data requests detailed on page 3. (Residential / Domestic service accounts are limited to 12 months historical billing data.) A CISR form is included in this Kit in Chapter 3, page 51. ESPs should note that SCE will only accept SCE Authorization forms and letters submitted on customer letterhead that are signed by the customer of record, or someone having

financial authority if account is a DBA. SCE will process approved CISR requests within ten (10) days of receipt.

SCE will provide standard customer information without charge, up to two times within a 12 month period per service account. After two requests in a year, customer may be responsible for charges that may be incurred to process the request.

The ESPs that receive confidential customer information are expected to maintain a level of confidentiality agreed to by the customer. This information should not be released to another party without the explicit consent of the customer.

15.3. Existing Customer Metering

Existing customer metering information is also available to ESPs. This information includes the following:

- Meter number
- Make
- Model
- Meter form
- Power Transformer (PT) ratio
- Current Transformer (CT) ratio
- Meter voltage
- Billing constant (Multiplier)

ESPs may receive this information automatically in the process of completing the Direct Access Service Request (DASR) provided the customer is switching from bundled service with SCE to Direct Access. Effective December 1, 1998 this information will be sent via the California Metering Exchange Protocol (CMEP) format. In addition, ESPs can obtain this data in advance of the DASR process through the CISR. A CISR form is included as part of the ESP Basic Information Packet. Customer information will be available electronically and in hard copy.

15.4. Interval Data

Interval data is available for accounts above 500 kW and will be provided to ESPs upon customer consent. Interval data will be provided for 12 months, with up to 18 months upon request. This information can only be obtained through a CISR.

ESPs should note that a single request for both standard confidential customer information and interval information will count as one request. If, however, requests are submitted separately for confidential customer information and interval information, each individual request will count as one request. Customer information will be available electronically.

15.5. A Field by Field Description of Standard Confidential Information

To assist ESPs in understanding standard confidential information a list of each field and a description are included below.

From
SDG&E's Manual

METER DATA MANAGEMENT AGENT (MDMA) SERVICES

ESPs may elect to provide meter reading service themselves or to have SDG&E or another qualified agent provide meter reading, usage calculation, data access, and data archiving. The specifications and requirements for these MDMA services are defined in the *Meter and Data Communications Standards (MDCS) Workshop Report* of Dec. 3, 1997 available from the CPUC on its Web site: **http://www.cpuc.ca.gov**.

When signing an ESP service agreement with SDG&E, an ESP will identify its MDMA service providers. The ESP should provide contact information and related details so SDG&E can establish communication with the MDMA.

Meter data will be provided according to the customer's billing cycle and the schedule published by SDG&E. Timeliness for publication is as required by the *MDCS Workshop Report*.

The format for the meter data will be as provided in the *MDCS Workshop Report* and published by PG&E on its Internet site **http://mads.pge.com/PGE-MEP.htm** and is featured below. However, SDG&E will only be using the records types that were agreed to for communication meter data. They are **MEPMD01** and **MEPMD02** (see handout).

Meter data is to be provided to SDG&E in the future as an alternative to 15 minutes interval data for some tariffs. This data will provide the data elements that SDG&E requires to bill customers on its current UDC tariff. These tariff data element requirements will be provided as part of the information given to ESPs by SDG&E.

MEPMD01 - Metering Data Type 1 - Interval Data

Interval Data is data that represents regular interval accumulation of energy usage information, such as 15-minute, hourly, daily, or monthly accumulation or demand. Most energy metering information may be represented using this record. The exception is traditional Time-Of-Use (TOU) usage accumulation that has complex irregular interval definition. TOU data may be represented using MEPMD02" record type.

MEPMD01 represents a format to facilitate the transfer of metering data. It is not intended to define how a utility customer's energy use is administered or billed."MEPMD01" supports single meter socket values. Utility customers with more than one meter per account must be explicitly handled. Billing for a single utility customer that involves the aggregation of metering values may be done by some negotiated scheme by the UDC acting as a metering agent. It could also be handled by using "MEPMD01" records to transfer metering values separately, as separate metering accounts, to be combined later in that customer's billing service. Both methods are supportable by "MEPMD01". The sequence of fields in this record is:

1. **Record Type:** Protocol Text: Always "MEPMD01"

2. **Record Version:** Date ("CCYYMMDD"): Currently "19970819"

3. **Sender ID:** Arbitrary Text: Identity of the entity sending this record. It will typically be an abbreviation of the sender's company name. Currently, only the first

16 characters of this field will be recognized by PG&E.

4. **Sender customer ID:** Arbitrary Text: This is the senders identification reference for the account to which this record applies. Currently, only the first 12 characters of this field will be recognized by PG&E.

5. **Receiver ID:** Arbitrary Text: Identity of the intended recipient entity of this record. It will typically be an abbreviation of the receiver's company name. Currently, only the first 16 characters of this field will be recognized by PG&E.

6. **Receiver customer ID:** Arbitrary Text: This is the receiving entities identification reference for the account to which this record applies. Currently, only the first 12 characters of this field will be recognized by PG&E.

7. **Time stamp:** Date/Time ("CCYYMMDDHHMM"): Date and Time that this record was created.

8. **Meter ID:** Arbitrary Text: This is the placard identifier or faceplate serial number to physically identify a meter. This is usually some arbitrary combination of letters and numbers that make up a meter manufacturer's serial number. It may, however, be some other easily found identifying label on the metering equipment. This field may optionally be used as a channel identifier for situations where that information is useful. Currently, only the first 12 characters of this entry will be recognized by PG&E.

9. **Purpose:** Protocol Text: Indicates the reason for this data transmission. Defined values are:

   "OK" - Normal transmission.

   "RESEND" - Retransmission of previously sent data.

   "SUMMARY" - Summary of SP-totaled data. Summary data usually consists of values calculated from metering data such as monthly totals calculated from 15 minute readings. This data is often supplied on a regular basis (such as for quarterly reports).

   "HISTORY" - Archival account data. Archival data is retrieved from long term storage and may be of lesser time resolution than its original collection period. This data of generally supplied once per request for analysis purposes.

   "PROFILE" - Account usage profile data.

   "TEMPLATE" - Account usage template data.

10. **Commodity: Protocol Text**: Describes what commodity type this account is for. Defined values are:

    “E”- Electricity.
    "G" - Gas.
    “W" - Water.
    "S" - Steam.

11. **Units:** Protocol Text: Describes the units of the data values. Examples of values are: "KWHREG", "KWH", and "THERM". A complete list of abbreviations is supplied in the Protocol Text Units listing. . Data quality flags are used to indicate the raw, estimated, valid, etc. status of values transmitted

12. **Calculation Constant:** Numeric Floating-Point: Defines an optional value which is used as a multiplier to convert data values to engineering units. Typically this parameter is used with "PULSE" data to allow calculation of equivalent " KWH" and "THERM" values. 1

13. Interval: Time Interval ("MMDDHHMM"): Describes the time interval between readings. Metering data is transmitted as Date/Time and value pairs. In many cases, however, the time intervals for the data values is so regular that Date/Time information past the first reading is essentially redundant. This field may be used to minimize this redundancy problem. If a Date/Time field, after the first reading in a line, is empty, it is calculated by adding this interval to the Date/Time of the previous value. This field is ignored if no empty Date/Time fields are encountered in the record. This field is optional if Date/Time fields are supplied for all values.

14. Count: Numeric Integer: Indicates the number of Date/Time, flag, and value sets to follow. A maximum of 48 sets is allowed per record.

15. Data: Date/Time ("CCYYMMDDHHMM"), Protocol Text, and Numeric Floating-Point triplet: Each data entry is a set of three fields. The number of data entry sets is described in the "Count" field above. When an "Interval" field is supplied, Date/Time fields after the first may left empty to be calculated when the record is read. An empty Date/Time field is calculated by adding the time interval described in the "Interval" field to the supplied or calculated Date/Time value of the previous entry pair in this record. The Protocol Text field is an optional field used as a data quality flag. Defined values are:

    - (empty) - An empty flag field indicates that the value is OK and validated.
    - "E" - Value is estimated. Estimation method is described in account's "MEPAD01" record.
    - "A" - Value is an adjustment. Adjustments are made to correct metering inconsistencies or errors.
    - "N" - Value is empty. No value is being sent for this interval. May be sent as the first entry for a new account.
    - "R" - Value is raw. No validation has been performed on value.

MEPMD02 - Metering Data Type 2 - *TOU Data*

The sequence of fields in this record is:

1. **Record Type**: Protocol Text: Always "MEPMD02"

2. **Record Version**: Date ("CCYYMMDD"): Currently "19970819"

3. **Sender ID:** Arbitrary Text: Identity of the entity sending this record. It will typically be an abbreviation of the sender's company name. Currently, only the first 16 characters of this field will be recognized by PG&E.

4. **Sender customer ID:** Arbitrary Text: This is the senders identification reference for the account to which this record applies. Currently, only the first 12 characters of this field will be recognized by PG&E.

5. **Receiver ID:** Arbitrary Text: Identity of the intended recipient entity of this record. It will typically be an abbreviation of the receiver's company name. Currently, only the first 16 characters of this field will be recognized by PG&E.

6. **Receiver customer ID:** Arbitrary Text: This is the receiving entities identification reference for the account to which this record applies. Currently, only the first 12 characters of this field will be recognized by PG&E.

7. **Time stamp:** Date/Time ("CCYYMMDDHHMM"): Date and Time that this record was created.

8. **Meter ID:** Arbitrary Text: This is the placard identifier or faceplate serial number to physically identify a meter. This is usually some arbitrary combination of letters and numbers that make up a meter manufacturer's serial number. It may, however, be some other easily found identifying label on the metering equipment. This field may optionally be used as a channel identifier for situations where that information is useful. Currently, only the first 12 characters of this entry will be recognized by PG&E.

9. **Purpose:** Protocol Text: Indicates the reason for this data transmission. Defined values are:

   "OK" - Normal transmission.

   "RESEND" - Retransmission of previously sent data.

   "SUMMARY" - Summary of SP totaled data. Summary data usually consists of values calculated from metering data such as monthly totals calculated from daily readings. This data is often supplied on a regular basis (such as for quarterly reports).

   "HISTORY" - Archival account data. Archival data is retrieved from long term storage and may be of lesser time resolution than its original collection period. This data of generally supplied once per request for analysis purposes.

   "PROFILE" - Account usage profile data.
   "TEMPLATE" - Account usage template data.

10. **Commodity: Protocol Text:** Describes what commodity type this account is for. Defined values are:

    - "E" - Electricity.
    - "G" - Gas.
    - "W" - Water.
    - "S" - Steam.

11. **Units: Protocol Text:** Describes the units of the data values. Examples of values are: "KWHREG", "KWH", and "THERM". A complete list of abbreviations is supplied in the Protocol Text Units listing. Where multiple unit types and seasons are transmitted, separate MEPMD02 records are sent for each. Data quality flags are used to indicate the raw, estimated, valid, etc. status of values transmitted.

12. **Season identifier:** Protocol Text: This identifies the season for which the values apply. Defined values are: "S" - Summer. "W" - Winter. This field may be left blank for accounts that do not differentiate between seasons. If this field is blank, it will be interpreted as indicating winter for those accounts that do. A record may contain data for one season only. Data for different seasons must be sent in separate records.

13. **Calculation Constant:** Numeric Floating-Point: Defines an optional value which is used as a multiplier to convert data values to engineering units. Typically this parameter is used with "PULSE" data to allow calculation of equivalent " KWH" and "THERM" values.

14. **Data Start Time:** Date/Time ("CCYYMMDDHHMM"): Describes date and time that the data interval reported in this record began.

15. **Data Time Stamp:** Date/Time ("CCYYMMDDHHMM"): Describes date and time that ends the interval reported in this record.

16. **Count: Numeric Integer:** Indicates the number of label-flag-value sets to follow. A maximum of 6 sets is allowed per record.

17. **Data: Protocol Text,** Protocol Text, and Numeric Floating-Point triplet: Each data entry is a set of three fields. A maximum of 6 sets is allowed per record. Each set consists of a Protocol Text Time-Of-Use component label field, a Protocol Text data quality flag, and a Numeric Floating-Point value. The number of data entry sets is described in the "Count" field above. Defined values for the quality flag field are described in the "MEPMD01" record above. (An empty indicates that the value is OK.) Defined values for the label field are:

    - "ON-PEAK"
    - "OFF-PEAK"
    - “PART-PEAK"
    - “PEAK-2"
    - "PEAK-3"
    - "PEAK-4"
    - "TOTAL"

Billing Service Data Records

California Metering Exchange Protocol billing communications occur to enable billing information to be transferred between companies. Billing communications usually occurs between the Billing Agent (BA) and other SPs or the UDC. The billing record types are:

1. **"MEPBD01" - Billing Data Type 1 - Customer billing charges and adjustments.** This record contains specific billing component values as would be printed on a customer's bill. This information is sent once per billing period per customer. This category of information is typically sent from the BA to the SP.

2. **"MEPBD02" - Billing Data Type 2 - Interval account pricing plan.** Simple hourly pricing plan information is transmitted using this record type. This category of information is typically sent from the SP to the BA for billing by the BA.

3. **"MEPBD03" - Billing Data Type 3 - Time-Of-Use account pricing plan.** Simple hourly pricing plan information is normally transmitted using "MEPMD02" - Metering Data Type 2 records. Some accounts, however, use complex energy pricing plans. In fact, some larger accounts will be tailored to their customer's specific business needs to a degree that designing a record to describe their pricing plans is impossible. This record is designed to handle a Time-Of-Use of account pricing situations. This category of information is typically sent from the SP to the MA for billing by the MA.

Pricing and Billing Values vs. Date/Time Intervals

The values transmitted in Metering Service Data Records are typically an accumulation of some quantity, such as kilowatt hours, over an interval of time. Each value has an associated Date/Time field as a timestamp. That timestamp could conceivably identify the beginning or ending time of the interval. Each of these approaches has advantages and disadvantages. The California Metering Exchange Protocol uses end-of-interval Date/Time timestamps.

Whether beginning or end of interval timestamps are used, a problem arises that complicates totaling commodity usage on a day by day basis. Either the first or last reading for a day will be listed with the previous or next day's date. The use of end-of-interval timestamps does not complicate this problem. Totaling algorithms must deal with the fact that the timestamp for the last interval of the day will be for the beginning of the first interval of the next day.

One potential solution to the end-of-interval totaling problem is to simply offset the midnight reading to 23:59. This is approach is inadequate simply because billing days often do not begin and end at midnight. Some other time of the day, such as 0700 local time is used. Offsetting all timestamps by one minute might minimize this one minor totaling problem but would introduce a systemic error in data representation. If such measures are desirable, they should be applied to the data after it is transmitted via California Metering Exchange Protocol.

SDG&E DIRECT ACCESS COMMUNICATIONS STANDARDS

Introduction

This standards document has been provided as a guide for communications connectivity for installation of DA option 2 (Power Source PLUS) or option 3 (Power Source INSTANT DATA) utilizing SDG&E as the selected provider.

It addresses the following three components which are required for DA communications:

- Telephone line and dial tone
- Extension of phone line to metering location
- Modular phone jack

Customers may elect to provide these components on their own or may have SDG&E coordinate these activities for them. SDG&E has the expertise to direct the activities as outlined in this document working with various internal groups and outside telecom vendors. All costs associated with the communications links are passed through at cost. (The communications and wiring costs are addressed in the document, *Scenarios for Communication Requirements*, available at a later date).

Communications Characteristics

DA options 2 and 3 require communications to the meter in the form of a phone line. This section addresses the characteristics of the telephone line.

Option 2 - Power Source PLUS

Since the meter initiates the call to the DA platform at SDG&E, a shared telephone line may be used. Each day's call is initiated at a predetermined time between 12 a.m. and 6 a.m. and will last less than three minutes. No toll charges will be incurred since the number of the platform called by the meter is toll-free to the customer. Any standard, per-minute usage charges are applicable. A dedicated phone line may also be used if a shared line is not available. In either case, the line must have the capability of making direct outward dialed calls.

If a shared line is to be used, consideration should be given to the selection of the line to be connected. Although calls will be made in the early morning hours, care should be taken so that a line required for a 24-hour operation is not used. Should the shared line come off hook during the transmission of the data, the meter call will be terminated. To avoid interfering or delaying meter reads, the line should be chosen accordingly.

Option 3 - Power Source INSTANT DATA

Under this instant data option, each call is initiated by the DA platform at SDG&E. This will require the use of a dedicated line so as to not interfere with normal business operations. This line will need the capability of making both direct inward dialed and direct outward dialed calls.

Since the platform initiates the call, no toll charges are incurred by the customer. Calls may be made at anytime throughout the day. Customers who are equipped with the appropriate software may also make calls to the meter as required.

Communications Links Specifications

With either option, it is important to note that the telephone lines must be standard analog service as opposed to digital services which may be available through a customer PBX. This is applicable whether a shared or dedicated line is used. Specifications for the phone line are as follows:

NOTE: The telephone lines must be standard analog service

- Analog only dial tone service
- Either a PBX extension or measured business line is acceptable
- The meter can dial "9" or other outside line access digits as required

Extension of the Phone Line

Consideration must be given to the extension of the phone line from the existing point of service to the meter location. In the case of a dedicated, measured business (1MB) line , the line must be extended from the PacBell Minimum Point of Entry (MPOE) to the meter. If an existing customer PBX line is used, the extension will be from the nearest point of service to the meter. The line needs to be extended so that a new modular jack can be installed within six inches from the top of the metering panel.

The customer is responsible for the cost of providing the telephone line for DA metering which requires telephone wire installation for remote meter reading.

(See the document *Scenarios for Communication Requirements* for additional line and wiring information.)

Modular Phone Jack

The phone jack recommended is a telephone network interface box and meets the Siecor modular jack standard TR-NWT-000049 (part number CAC970-R1A from Pacific Bell). This interface box is a waterproofed, lockable box that has an RJ-11 standard telephone jack located inside. This box must be located within six inches at the top of the metering panel.

SDG&E will provide the penetration through the top of the metering panel (as needed) to connect the meter's communication line to the interface box. See Figure 1 for further clarification regarding the location of this jack.

Prior to meter installation, the phone line must be thoroughly tested to verify the following:

- Dial tone is available
- Outbound calls can be made
- Inbound calls can be received
- The assigned phone number is correct
- Outside line access digit is correct

This testing can be easily accomplished by plugging in a standard telephone set into the jack on the interface box and making both inbound and outbound calls.

Summary

Adherence to these standards will simplify and expedite the installation of the DA metering options. Should any clarification be required or if there are questions regarding this information, please contact the SDG&E Advanced Metering Team:

Steve Taylor
(619) 636-6842

GUIDELINES FOR REVENUE PROTECTION

Tampering of electric metering equipment poses hazards to utility workers as well as customers and their property. Customers and/or persons they employ who tamper with electric metering equipment may install devices and equipment with reckless disregard for safety. Awareness of theft of service not only protects the rates and revenues of the utility industry, it also protects utility workers and customers.

SDG&E maintains an experienced organization, Meter Revenue Protection (MRP), to manage theft and unauthorized use, and it intends to cooperate with the ESPs and their Meter Service Personnel (MSPs) to manage theft and unauthorized use.

Reporting

The ESP and/or its MSP should contact the MRP section of SDG&E prior to making any customer contact specifically related to theft of service or unauthorized use.

SDG&E is not encouraging the ESPs or their MSPs to make a determination of whether or not theft has occurred. The responsibility for the investigation of unauthorized use of energy, as it relates to determining theft of service, lies with the MRP section of SDG&E. MRP will coordinate with the ESP's efforts to accurately account for energy used and not recorded on the metering equipment.

Reporting of unauthorized use and/or theft of energy may be accomplished through SDG&E's Web site at sdge.com. SDG&E's MRP can be reached during business hours at (619) 654-8734 or (619) 654-8735 for incident-specific questions.

Occasionally, ESPs or their MSP may receive information regarding possible theft of service and unauthorized use through telephoned or mailed reports. This information is critical to the SDG&E investigation process and should be as detailed as possible. It is not necessary to identify the individuals providing the information. Any written documentation or telephone reports received by the ESPs should be immediately forwarded and reported to the MRP section at SDG&E:

SDG&E Meter Revenue Protection
8326 Century Park Court, Suite 6130
San Diego, CA 92123

Correction of Unauthorized Use or Theft

MSP shall contact SDG&E's MRP for guidance prior to correcting any incidents of unauthorized use or theft. The purpose in contacting MRP is to establish if an investigation is in progress and to determine the appropriate action and documentation that may be necessary for the proper and accurate billing of the customer.

Exceptions to this would include hazardous situations where immediate action is necessary to prevent bodily injury or property damage. SDG&E's Trouble Department can be reached at (800) 611-7343 in the event that unsafe condition are discovered outside of regular MRP business hours.

Responsibility for correcting any energy diversion belongs to the customer of record. The SDG&E MRP will coordinate any replacement and/or repairs with the ESP and their customers for correction of the tampering or unauthorized use.

If the MSP must take immediate action to make the situation safe, the MSP should contact SDG&E's Direct Access Project Coordinators once the installation is safe:

John Acuna
(619) 636-6843
or
Steve Taylor
(619) 636-6842

Indications of Tampering

This list is an aid in identifying possible improper handling of the metering equipment, however evidence of these conditions does not confirm that tampering, unauthorized use or theft is occurring.

- Missing/altered and/or tampered:

- Meter seals
- Test switch cover seals
- Pull section seals
- Panel seals
    - Body oil, dirt and smudges on the meter panel
    - Negative or unusual readings (high or low)
    - Non-SDG&E or non-ESP seals
    - Holes in the meter covers
    - Back feed to the load side of the meter socket
    - Unusual buss connections, wires, etc.
    - Dial pointer alignment (unable or difficult to read)
    - Unusual Identification plates on meters
    - Meter crooked in meter base
    - Obvious load in use and no meter registration
    - Warped meter disk
    - Arc burns or pits on meter /meter panel surface
    - Scratches and excessive wear on:
- meter panels
- retainer rings
- meter cover
- meter socket
- meter prongs/blades/stabs
- potential links and/or set screws
- meter disk
- register face
- ID plate
- test switches
- test blocks
    - Disengaged index drive gears

Methods of Tampering

The MSP must be aware that any irregularity or discrepancy they have found may be a method of theft of service. However, the existence of a condition is not conclusive evidence that theft has occurred. The following is a list of the more common methods used in the theft of energy.

- Inverted electric meters
- Jumpered test blocks with no apparent test block damage.
- Improperly wired test blocks
- Jumpered test switches
- Foreign material on test switches
- Jumpered meter sockets
- Unusual wiring behind meter sockets (loops/jumpers)
- Holes in meter covers with foreign objects inserted through meter cover
- Magnets on the metering equipment
- Open potential links
- Open potential links with wires attached
- Devices attached to potential coils

Tampering with electric or gas metering facilities maintained by the proper authority for the purpose of consuming unmetered/stolen energy may violate sections in the California State Penal Code.

METERING ISSUES

UDC/ESP Relationship

The relationship between the UDC and ESP for metering issues is critical to the successful implementation of DA. All formal communications (form submittals, scheduling, etc.) regarding metering services should be exclusively between the UDC and ESP.

SDG&E Meter Number Assignment

SDG&E requires a unique meter number be assigned to every meter in its service territory. For DA customers special blocks of meter numbers have been designated for identification as follows:

- 8,xxx,xxx series for all SDG&E-owned DA meter sets
- 9,xxx,xxx series for all ESP-owned DA meter sets

Meter Inventory, Delivery, & Return Issues

SDG&E will maintain an inventory of all meters within its service territory. The above designated DA meter number series will aid in the identification of ESP meters by field personnel. SDG&E will issue blocks of meter numbers to qualified ESPs for their use. These meter numbers must be prominently displayed on the meter set.

SDG&E's South Bay metering facility will serve as the centralized point for meter delivery and return of all ESP meters. All ESP meters should be delivered to the South Bay facility already programmed, clearly identified, and ready for installation. Once the ESP has removed the existing SDG&E meter, it should be returned to the South Bay facility within 5 business days. All meter read information should be forwarded to SDG&E within 3 business days. All returned meters should be clearly identified and delivered to:

South Bay Metering
Attn: Jeff Strickland
1800 Maxwell Rd
Chula Vista, Ca 91911

Meter Installation/Removal/Data Recovery Issues

SDG&E or the ESP can be responsible for installation, removal, and data recovery for meters of customers changing to DA. If the ESP, or its designated alternate, chooses to act as the MSP, it will be responsible for the following:

- ESP will provide its own CPUC-approved meters. Meters installed prior to 1/1/98 must be approved by SDG&E.
- Customer (or its designated ESP) is responsible for telecom installation.
- ESP, or its designated alternate, will comply with approved *California Meter Service Provider Certification Guidelines* as outlined in the MDCS final decision of 12/3/97.
- ESP will file MDCR with UDC at least 5 business days prior to meter installation. MDCR processing is currently manual (please see page 5) however, a desktop application is under development. Only MDCRs from authorized ESP personnel will be accepted.
- ESP/MSP will coordinate installation of meters with SDG&E's Direct Access Project Coordination Team. Scheduling of meter installations and the arrangement of necessary joint meets will occur at this time. If SDG&E is acting as the meter reading agent, the ESP or its MSP must contact SDG&E's Translation area during a meter change to confirm proper communications are taking place. They may be reached at **(619) 654-8649**.
- SDG&E meters removed as a result of DA must be shipped to SDG&E's South Bay Meter Shop within 5 business days. Service order completion requires that all pertinent information, including meter reads, be available to UDC within 3 business days.

Joint Meet Policy

SDG&E will require joint meets consistent with CPUC decisions (see SDG&E Rule 25). SDG&E reserves the right to waive the joint meet.

Energy Management Systems

Energy management systems should be coordinated through the customer by whomever is serving as the MSP. If SDG&E is serving as the MSP, prior notification of all customers with an energy management system should be made to the DAPC. These systems should normally be connected at the time of the meter change. The customer is responsible for all hardware and/or software necessary to make the change to DA.

Meter Installation Example 1: SDG&E Bundled Service

SDG&E Installs Communications: If the ESP chooses SDG&E's *Basic Meter Service* option, no telecommunication is required. If telecom installation is required, it will be in conformance with *SDG&E Communications Standards* (available from the ESP's Direct Access Project Coordinator) and applicable fees will be charged as stated in Schedule DA found in this manual's appendix.

SDG&E Provides Meters: SDG&E will provide a pre-programmed meter for installation at customer premise.

SDG&E Installs, Maintains, Tests, and Reads the Meter: SDG&E field personnel will install the new meter in accordance with Schedule DA. SDG&E will connect meter to the telecom installation. If the customer has an energy management system, SDG&E's field personnel will hook it up to the meter. SDG&E will provide maintenance, testing, and meter reading services consistent with fees in Schedule DA.

Meter Installation Example 2: SDG&E Installs ESP Meters

ESP Installs Communications: If the ESP chooses SDG&E's *Basic Meter Service* option, no telecommunication is required. If telecom installation is required it should be in conformance with SDG&E *Communications Standards*. Notification is required to SDG&E Direct Access Project Coordinators (DAPC) when communications are tested and complete.

ESP Provides Meters: The meter will require programming before being delivered to SDG&E prior to installation. The ESP will determine the priority for meter installations. Meters should be delivered to SDG&E's South Bay Meter Shop (address is on page 20).

SDG&E Installs the Meter: SDG&E field personnel will install the new meter in accordance with Schedule DA. SDG&E will connect the meter to the telecom installation. If the customer has an energy management system, SDG&E field personnel will hook it up to the meter.

SDG&E Meter Reading (Pre-1/1/98): SDG&E cannot read these meters with the normal meter reading workforce. SDG&E will set up the MV-90 to do all monthly reads until DA begins. SDG&E will perform billing.

SDG&E Meter Reading (Post-1/1/98): SDG&E will take final meter read in conformance with Rule 25-DA. The ESP will take over the MDMA and meter reading functions. Usage data and meter data will be transferred between SDG&E and the ESP.

Meter Installation Example 3: ESP Installs ESP Meters - Pre-1/1/98*

ESP Installs Communications: If ESP chooses SDG&E's *Basic Meter Service* option, no telecommunication is required. If telecom installation is required, it should be in conformance with SDG&E *Communications Standards*. Notification is required to SDG&E DAPCs when communications are tested and complete.

Site Preparation (Pre-site): ESP pre-sites should include checking for locking rings and assessing whether SDG&E must come and remove the ring (if so, please notify an SDG&E DAPC). Meter seals, test switches, and instrument transformers should be assessed.

ESP/SDG&E Joint Meets: SDG&E will require a Joint Meet for the following:

- First 50 installations per ESP
- All IDR meter changes
- All pre-1/1/98 installations

SDG&E will obtain final reads and retrieve the meter. If SDG&E is acting as the MDMA, the ESP should assure that MV-90 can read the meter.

SDG&E Meter Reading (Pre-1/1/98): SDG&E cannot read these meters with the normal meter reading workforce. SDG&E will set up the MV-90 to do all monthly reads until DA begins. SDG&E will perform billing.

SDG&E Meter Reading (Post-1/1/98): SDG&E will take final meter read in conformance with Rule 25-DA. The ESP will take over the MDMA and meter reading functions. Usage data and meter data will be transferred between SDG&E and the ESP.

*****Subject to ESP and/or designated MSP receiving CPUC certification.

Meter Installation Example 4: ESP Installs ESP Meters - Post 1/1/98*

ESP Installs Communications: If the ESP chooses SDG&E's *Basic Meter Service* option, no telecommunication is required. If telecom installation is required, it should be in conformance with SDG&E Communications Standards. If SDG&E is acting as MDMA, notification is required to SDG&E DAPCs when communications are tested and complete.

Site Preparation (Pre-site) and Meter Locking Ring Keys: It is suggested that if the ESP pre-sites a premise it should include checking for locking rings and assessing whether SDG&E must come and remove the ring (if so, please notify a DAPC). Meter seals, test switches, and instrument transformers should be assessed.

ESP/SDG&E Joint Meets: SDG&E will require a Joint Meet for the following:

- First 50 installations per ESP
- All IDR meter changes

SDG&E will obtain final reads and retrieve the meter. If SDG&E is acting as the MDMA, the ESP should assure that MV-90 can read the meter.

ESP Sets Meter: The ESP returns meter to South Bay facility within 5 business days of removal. The ESP will provide final meter reads within 3 business days to SDG&E. The ESP will seal the meter and follow MRP policies.

DA Begins: DA begins in conformance with SDG&E Rule 25.

*****Subject to ESP and/or designated MSP receiving CPUC certification.

From PG&E's Manual

Chapter 5

METERING

This chapter was last updated on: 5/4/98

Overview

This chapter focus upon DA interval metering issues including meter ownership and ownership changes, meter installations, Meter Data Management Agent requirements (MDMA), ESP/PG&E meter maintenance obligations, procedures for ESP/PG&E meter reading, meter data access, and customer service for ESPs.
Within the context of this chapter, the term "meter" refers to an hourly, non-load profile meters, known as interval meters. As of the DA implementation date interval meters will be required for DA customers whose maximum electrical demand is equal to or exceeds 50kW. For DA customers whose demand is less than 50kW existing meters will be adequate for DA load profiles. However, if a customer using less than 50kW wants to participate under PG&E's hourly PX rate option, that customer will have to have an interval meter installed. In addition, customers on electric rate schedules A-10 or E19V will be required to have interval meters installed if a "spike" of 80kW or over is reflected within their last twelve (12) months of usage.

Meter Ownership and Ownership Changes

1. Only the Customer, its ESP, or PG&E may own the DA interval meter for any given Customer Account.

2. If the Customer account has a DA interval meter that is not owned by PG&E, the DA interval meter must meet PG&E's interval meter standards and be compatible with PG&Es' meter reading systems or it will be replaced, at the Customer's expense, with a standard PG&E meter upon.

3. The Customer may retain ownership of a DA interval meter used for a full service account only if the Customer:

    a) grants PG&E rights acceptable to PG&E to access, test, maintain and read the DA interval meter at any time, as provided in these rules;

b) pays any costs that PG&E incurs in providing metering services using the DA interval meter to the extent those costs exceed the costs that PG&E would incur using a standard PG&E meter for Full Service; and

c) agrees that PG&E may, at its discretion and at Customer's expense, replace the DA interval meter if it malfunctions with a standard PG&E meter for Full Service.

5. Regardless of ownership, PG&E will have the right at any time to access any DA interval meter and any DA interval meter data, and to read, test, or inspect the DA interval meter, as provided in these rules.

Meter Installation Requirements

This section covers topics related to meter installations including:

- Meter installation requests
- Meter installation prioritization and forecasting
- Meter related phone service quality and phone service billing requirements

Meter installations can occur not only during initial DA setup, but also subsequently due to either a customer initiated meter installation request or an action on the part of PG&E to replace a meter which does not meet PG&E's meter requirements standards.

Until the CPUC has ruled upon permanent standards regarding interval meter installations, meter installations will be conducted according to PG&E's standards. In addition, initial installations and testing will be done in accordance with applicable provisions of Appendix B to the *Meter and Data Workshop Report*, available through the CPUC website at, **http://162.15.5.2/wk-group/dai/**.

Meter installations for new construction accounts

ESPs with new construction customers who are interested in DA at the onset of their energy service, should be familiar with the following process:

- The ESP needs to contact ESP Relations at PG&E to discuss details regarding new construction customers that wish to participate in DA from day one of their energy service. (See the **DA Contacts** link on the *ESP Resource Center* website at **http://www.pge.com/esp**.) ESP Relations will contact the appropriate Service Planning office within PG&E that will coordinate the customer's new construction project.
- The ESP will then receive an *Application for Service* from an assigned New Business Representative. The ESP will specify the ESP, MSP, and MDMA as well as provide accurate load and project site information on the form.
- After the application has been processed and the project estimated and approved, PG&E will pre-assign an account number for the ESP's customer. This account number will be provided to the customer's construction manager.

- The customer's construction manager must contact PG&E at 1-800-PGE-5000 in order to complete account setup and activation before the ESP will be able to submit a Direct Access Service Request (DASR) on their behalf.

Please note that an active PG&E account number does not necessarily indicate a customer relationship with PG&E, but is required for processing purposes. However, in the event that circumstances preclude the account from becoming DA at the inception of service, the customer account will be established as a PG&E account initially and then will switch to DA.

- Once the customer's PG&E account has been activated, the ESP will need to submit a DASR to begin the DA process. Additionally, if the account requires an interval meter and PG&E will be the meter installer, the ESP will need to ensure that phone line requirements have been met. Details on the DASR process are covered within Chapters 2 and 3 of this guide. Phone line requirements are described within this chapter in the section, "***Phone Service requirements when PG&E is the meter installer and the MDMA***".
- Once a DASR has been submitted, PG&E's Meter Event Group (MEG) will work with the ESP and customer/construction manager to coordinate the joint meet (if required), meter set, and go live date.

Customer initiated meter installations

DA Customers can initiate meter installations as result of switching their ESP or if they elect to own and install their own meter. Regardless, the installation requirements and procedures for both situations are the same.

METER EQUIPMENT REQUIREMENTS

All meters installed by the ESP or third-party MSPs must conform with PG&E's requirement criteria. For the current list of meter makes and models which meet PG&E's requirements, see Appendix D ("**DA Approved Meters**")of this handbook.

ESP AND THIRD PARTY METER INSTALLATION TERMS AND CONDITIONS

1. ESP shall notify PG&E electronically prior to installation of any metering equipment for a DA customer.

2. No DA interval meter installation or maintenance may be provided or commenced by ESP for any customer unless ESP has submitted a DASR for that customer and PG&E has approved commencement of DA interval meter installation by ESP.

3. When an ESP installs a DA interval meter for a DA Customer, the ESP will provide PG&E, within two (2) working days of the DA interval meter installation, the results of the initial DA interval meter test, the stop-read for the Full Service or DA interval meter that was removed (if applicable),

the start-read for the replacement DA interval meter, the voltage, data collection capabilities, data acquisition methods, DA interval meter constants and other pertinent information about the replacement DA interval meter facilities that are necessary for identification or billing purposes. If ESP performs meter installation, ESP shall provide PG&E with PG&E-specified meter information and shall keep that information current.

4. The Customer or its ESP may elect to have PG&E remove the existing PG&E meter at the Customer's Premises. The coordination of the meter removal by PG&E and the installation of the new DA interval meter replacement is the responsibility of the Customer's ESP. A service charge for the removal of a PG&E meter must be paid in full to PG&E prior to any work being performed.

5. If an ESP removes a PG&E meter, the ESP must return the PG&E meter within ten (10) working days to a location approved in advance by PG&E. The PG&E meter must be properly identified and returned to PG&E in the same condition that the meter was in prior to the meter being removed from service.

6. Communication facilities associated with transferring metering data should be coordinated by the DA Customer's ESP with PG&E. If PG&E is providing the Meter reading service for the DA Account, the DA interval meter and associated communication facilities for the Account must be capable of correctly interfacing with PG&E's electronic data transfer system before PG&E will approve the DASR requesting that the Account be placed on DA Service.

7. PG&E will inspect any work on the DA interval meter or associated facilities which require the de-energization of a Customer's service. PG&E retains the right to inspect third -party DA interval meter installations prior to the Account receiving DA Service, even if the Customer's service did not need to be de-energized for such installation.

8. PG&E must approve the satisfactory operation of all ESP-installed metering equipment and data communication systems, as they interface with PG&E's system.

9. PG&E shall have no liability for any damage or injury caused by ESP-installed metering equipment

PG&E initiated meter installations

PG&E has the right to replace an existing non-PG&E owned meter if the existing meter fails to meet standard requirements. If PG&E should decide to replace a service account meter, the installation terms, conditions and procedures discussed below will apply.

PG&E METER INSTALLATION TERMS AND CONDITIONS

1. If the ESP does not elect to provide metering services, PG&E will provide those services at tariffed rates to the DA customer.

2. PG&E will perform all metering services for full service customers except meter ownership, which may remain with a customer who has returned to Full Service.

3. If PG&E removes the DA interval meter, PG&E will return the DA interval meter within ten (10) working days to the Customer. The DA interval meter will be properly identified and returned to the Customer in the same condition that the meter was in prior to the meter being removed from service.

4. If PG&E installs a DA interval meter at ESP's request, ESP will be required to pay the charges set forth in PG&E's rate schedules. These charges must be paid in full by the ESP or Customer prior to any work being rendered by PG&E.

Meter Installation Prioritization and Job Forecasting by PG&E

Meter installation scheduling is based upon:

- Each DASR's renewable and non-renewable energy supply status
- Each PG&E division's capacity to install meters in conjunction with other metering work
- The date the DASR was received.

DIVISION CAPACITY

A division's capacity to install DA interval meters is dependent upon:

- New business volume
- PUC compliance work such as meter testing
- Meter data recovery
- Weather

Available meter installation capacity within a division is divided among ESPs on a first-come, first-served basis. PG&E is divided into seven (7) areas and also into eighteen (18) operating divisions. Each area covers 2 to 3 divisions and follows the same geographic boundaries as the divisions. **Appendix B**, **"Service Territories &Divisions**" contains a table which provides information on area and division boundaries.
ESPs can determine where a meter is located within PG&E's system and service territory by matching the second and third characters of the service account number with the City Code indicated in the Metering Service Areas & Divisions table.

PRIORITIZATION DATE

The time stamp used for prioritizing meter installations is the one placed on the DASR when it is received by the QUE. DASRs that are pending due to additional validation clarification may fall outside of this date sequence.

Installation Job Forecasting PG&E plans to issue a monthly forecast report to ESPs using the following process:

1. Once a month, approximately three (3) weeks prior to the start of the forecast month, PG&E will issue a Monthly Installation Forecast to each ESP requesting meter services. This forecast shows the meter installations planned, considering division capacity, backlogged requests, and new requests. This report tells the ESP which sites will be scheduled for installation, pending phone service activation

2. Generally, renewable power requests will bump non-renewable requests to a lower position in the priority list. However, once the meter installation is scheduled, it cannot be bumped to a lower position in the forecast schedule by new renewable power requests. (Requests for Virtual Direct Access (VDA) meters will be treated like non-renewable DA requests.)

3. The Monthly Installation Forecast Report is expected to contain:

    - ESP Name
    - Meter order number
    - Customer name
    - Service account number
    - Service address
    - Service city
    - Forecast month
    - Report date

4. After receiving the forecast, the ESP should then arrange for phone installation. (See the section "***Meter Phone Service Requirements***".) PG&E will not schedule the meter installation until the meter phone service has been installed and activated.

5. Once the phone service has been installed and activated, the ESP will notify the PG&E Meter Event Group (MEG) by sending a Site Ready Notification form. PG&E will then schedule the installation for a particular week and provide the ESP with the scheduled date that the meter will be installed.

6. If the ESP wants to coordinate a field meeting, they must notify the MEG by sending a Field Meeting Request. Detailed meeting arrangements will depend on the nature of the request. Sufficient notice should be provided to PG&E in order to properly schedule the meeting.

7. MEG will send the ESP notification of the scheduled installation at least three (3) calendar days prior to the installation. Currently, division scheduling will occur on Thursdays and the installation schedule will be sent to the ESP on Fridays.

8. Anyone present at the time the meter is being installed must comply with all applicable safety requirements.

9. For meters installed after the DA implementation date, the meter installation date will be the effective date of the switch to DA. For sites that have interval metering installed prior to the DA implementation date, the switch date to DA will be the next regularly scheduled reading date per the 1998 meter read schedule (see Appendix A, " **Meter Read Schedule**").

EVENTS REQUIRING RESCHEDULING

The procedures below indicate how meter installation rescheduling takes place based upon different event scenarios.

SITE NOT READY

1. When appropriate, a PG&E meter technician will place notification at the site that the installation was not completed.
2. MEG will inform the ESP about the problem by fax or email.
3. The ESP then corrects the problem and resubmits a Site Ready Notification form to MEG.
4. The installation request is re-scheduled for the next available week within the normal scheduling cycle.

METER OR METER MATERIALS NOT AVAILABLE

1. A PG&E meter technician will indicate that the site is not ready within PG&E's metering database.
2. Within 24 hours, MEG informs the ESP of the problem, including an estimated date that the site will be installed.
3. When materials arrive and are available, the division reschedules the installation within the next week's schedule.

COULD NOT MEET SCHEDULE INSTALLATION DUE TO OTHER OPERATIONAL REASONS

1. MEG will inform the ESP about the delay by fax or email and provide an estimated date that the installation will be ready for scheduling.
2. When operating conditions stabilize, the installation request is re-scheduled for the next available week within the normal scheduling cycle.

Phone service requirements when PG&E is the meter installer and the MDMA

In situations where PG&E is the meter installer and MDMA, the ESP is responsible for making sure that a telephone service provider installs a dedicated phone line for metering purposes at the customer site. The ESP must inform PG&E that the phone service is installed and ready before PG&E will install the interval meter. If the installation of a dedicated phone line is not feasible, the ESP should contact ESP Relations (see the "DA Contacts" link on the ESP Resource Center website at **http://www.pge.com**) to discuss other viable alternatives. Appendix C to this guide, " **Metering Phone Service Providers**", includes the names and telephone numbers of providers within PG&E's service territory.

PHONE LINE INSTALLATION REQUEST

The steps below describe the process for establishing metering phone service.

1. The ESP will have phone service established under its name by the phone service provider. The ESP shall pay the installation and monthly service fees directly to the phone service provider.

2. When requesting the phone service, the ESP should inform the phone service provider that the phone line will be for electric meter reading.

3. Upon completion of the phone line installation, the ESP shall fax the assigned telephone number to the MEG (see the "**DA Contacts**" link on the *ESP Resource Center* website).

4. After PG&E installs and tests the interval meter, and confirms the communication link, PG&E shall inform the ESP.

WIRED PHONE LINE REQUIREMENTS

The ESP shall work with the customer and the telephone service provider to install a dedicated phone line according to these requirements:

1. The phone line shall be installed from the phone minimum point of entry (MPOE) to the meter location. The ESP should be aware that in some instances, the ESP may be required by the customer or phone service provider to install a conduit, trench, or penetrate a fire wall in order to accommodate the installation.

2. The phone line shall be a "measured business" line with blocking on long distance, collect, 900, and 976 calls.

3. The phone line shall be installed in accordance with applicable codes and standards.

4. The phone line shall be labeled to read ***"For Electric Meter Use Only."***

5. The phone line shall be further labeled to show:

   a) the telephone number

   b) the maintenance and repair telephone number, and

   c) the telephone service provider's name

6. For security reasons, a telephone network interface unit (NIU) shall be installed at the phone line termination point. A Joslyn telephone network interface model #7550, #7090 or equivalent should be used, following the rules below:

   a) Generally, the NIU should not be mounted on the switchboard, meter panels, poles or pedestals. If these are the only location choices, the mounting must be secure without compromising the safety aspects of the particular enclosure. In the case of pole mounted terminations, the NIU

should be placed below the meter panel or otherwise not interfering with the pole climbing path.

b) The NIU should be installed within 5 circuit feet of the meter centerline ; and from a minimum of 18 inches and to maximum of 72 inches above finished grade. (A circuit foot is the length of wire or conduit that needs to be run along walls, etc. from the meter to the NIU. It is NOT a straight-line distance.)

WIRELESS PHONE INSTALLATION REQUIREMENTS

For situations in which it is not feasible for the telephone company to install a hardwired phone service, the ESP shall arrange for a cellular telemetry system to be installed and activated.

1. The cellular telemetry system shall meet the following specifications:

   a) NEMA 3R weatherproof enclosure

   b) Thermal shutoff protection

   c) 5% to 95% relative humidity, non-condensing

   d) Cellular radio with antenna connector

   e) Capacity to operate in 120VAC, 0.5 watts standby and 25 Watts

   f) User replaceable fuse

   g) Transient and overcurrent protection for RJ11 connections

   h) External ground lug

   i) One RJ11 Jack for data and one RJ45 Jack for communications

   j) Two wire, loop start

   k) Ring voltage, 25 Hz, 60 VRM, !%) V p-p

   l) 350Hz/440Hz square wave dial tone

2. RJ45 Jack for cellular handset programming and testing

3. The power supply for cellular telemetry system shall be outside any sealed section and on the load side of meter. The power supply should further be on a dedicated circuit or otherwise connected so that it is energized at all times.

4. Mounting of the cellular telemetry system shall be the same requirement as the installation of NIU as described above.

5. The ESP shall ensure that any accessories to the cellular telemetry system, such as an antenna and a mounting bracket, are properly installed or attached.

6. The ESP shall have the system activated and functionally tested prior to notifying PG&E that the site is ready.

7. The cellular telemetry system unit shall be labeled to read ***"For Electric Meter Use Only."***

8. The unit shall be further labeled to show:

   a) the telephone number

   b) the maintenance and repair telephone number, and

   c) the cellular telephone service provider's name

9. The ESP is responsible for the maintenance, repair and replacement of the cellular telemetry unit.

INFORMING PG&E OF A PHONE LINE INSTALLATION

Once the phone line has been installed and tested for operability, the ESP must fax *the Phone Service Notification* form to the Metering Event Group (MEG). The *Phone Service Notification* form can be downloaded from the "DA Documents" link on the ESP Resource Center website at **http://www.pge.com/esp**. Please see the "DA Contacts" link on *the ESP Resource Center* website for the current fax number for MEG.

CHANGING PHONE LINE RESPONSIBILITIES WHEN A PHONE LINE IS IN PLACE AND PG&E IS CURRENTLY BEING CHARGED FOR PHONE SERVICES

If a phone line for an interval meter is already in place and PG& E is currently being charged for phone services by the phone service provider, the phone account responsibility will need to be changed to that of the ESP.
The ESP should contact ESP Relations (see the "DA Contacts" link on the ESP Resource Center website at **http://www.pge.com**) to discuss the process involved with the account switch. ESPs should be prepared to provide the following information:

- Billing names, addresses, contact names, and contact phone numbers for accounts which will be switched to the ESP.
- Meter installation schedule.
- Phone numbers of existing lines.

ON-GOING PHONE LINE OPERABILITY REQUIREMENTS

The ESP is ultimately responsible for the on-going phone line operability requirements below.

- *Payment*: The ESP must ensure that monthly payments for use of the phone line are made directly to the phone service provider.

- *Maintenance*: The ESP must make certain that the phone line and any ancillary devices which may impact data transmission are maintained as required. Failure to make repairs to the phone line or related devices within three (3) days of the inception of phone-related problems will result in the actions and penalties outlined within Section G "Metering Services" of DA Rule 22.

Meter Service Provider (MSP) Requirements

Beginning 1/1/98, ESPs will be able to select Meter Service Providers (MSPs) other than PG&E to perform interval meter installation and other related services. The MSP is an entity that installs, calibrates, validates, and maintains the physical meter.
During 1998, ESPs may utilize compliant metering service providers other than PG&E for customers whose maximum demand is equal to or greater than 20 kWh only. However, starting January 1, 1999, ESPs may use compliant metering service providers for all DA customers.

MSP Certification Process and Requirements

See CPUC decision document 97-12-04 for requirements. This document is available at **http://www.cpuc.ca.gov**.

Joint Meet Requirements

During a joint meet session, the installation of a meter is attended by representatives of both the MSP and PG&E. The PG&E representative evaluates the installation by the MSP, noting compliance or non-compliance of working conditions and procedures on the *Joint Meet Checklist*, a form which PG&E uses to review installations by MSPs. At the end of the joint meet session the checklist is signed by the MSP and PG&E.
Below are categorical descriptions of the MSP compliance items which will be reviewed by PG&E during joint meet sessions. **Should the MSP not satisfy compliance on items within the "Safety" category and other items designated by an **, the installation will be considered "failed"**. Prior to the installation, PG&E will provide the MSP with a copy of PG&E's electrical safety standards filed on 2/1/98.

SAFETY

The following safety item shall be observed to ensure the safety of the worker, customer, and public.

- Look for and identify electrical or physical hazards that may be present at the site. Hazards shall be corrected immediately.
- Inspect for unsafe conditions at the customer's premises. If unsafe conditions exist, take necessary action to correct.
- Long sleeves of natural fabric shall be worn when exposed to energized equipment.

- No rings or metal watches shall be worn when exposed to energized equipment.
- Safety glasses shall be worn when exposed to energized equipment.
- On self-contained meters with no bypass, the load shall be disconnected before replacing the meter.
- On self-contained meters with a bypass, the meter shall be bypassed and de-energized, if possible, before replacing the meter.
- On transformer-rated meters, the test switch shall be opened before removing the meter and shall be left open until a meter is secured in the socket.
- While working on exposed energized equipment at voltages above 300 volts phase-to-phase, rubber gloves with protector and face shield shall be worn in addition to the items listed above.

CUSTOMER CONTACT

The DA customer shall be contacted to communicate:

- Who the MSP employee is.
- The company represented.
- The purpose of the visit.

SITE METERING REQUIREMENTS

The following items shall be observed by the MSP to ensure successful meter installations:

- Locate and identify the customer's meter which is to be changed.
- Identify whether the meter is self-contained or transformer-rated and if there is a Test Bypass Facility (TBF) or test switch.
- Measure and record service voltages both phase-to-phase and phase-to-ground.
- Determine service type and connections at meter socket.
- ******Determine correct meter form to be installed per *PG&E's Electric and Gas Service Requirements* pages 6-10 and 6-11
- Locate communications termination, if used, and verify that it functions properly.

UDC STANDARDS, PROCEDURES, AND REQUIREMENTS

Per the requirements outlined in *PG&E's Electric and Gas Service Requirements* guide, the MSP shall observe the following items:

- Safe working space.
- **Meter installation complies with all UDC requirements.

- **Meter site should not be altered in such a way that will result in unneccessary or unsafe work for any MSPs in the future.
- MSP's metering installation shall not require any metering work of the UDC.
- **Meter installation does not create a potentially hazardous condition for the customer, public, MSP, or UDC.

ACCURATE AND RELIABLE METER INSTALLATIONS

The MSP shall observe the following items to ensure accurate metering:

- **Inspect for evidence of tampering/energy diversion.
- **Install the proper meter given the service at the site.
- **Program the meter to comply with DA requirements.
- **Observe that the meter is functioning properly at the time of installation.
- **On transformer-rated meters, verify the billing constant is correct.

The MSP shall observe the following items to ensure the meter site will reliably measure power consumed:

- **Ensure all connections are correct and tight, including communication termination, if used.
- **Ensure all metering equipment is properly sealed.

DOCUMENTATION

The MSP's documentation of the work performed at the site will be observed for accuracy and completeness by PG&E.

- **Proper forms accurately completed (i.e. M3 and I or C - see Meter Information Forms for Data Exchange.
- **Identify and record RKVA meter number and reads, if present.

Meter Maintenance

The installer of the DA interval meter will be responsible for the routine maintenance of the DA interval meter, including but not limited to, DA interval meter testing (including but not limited to potential and current transformer testing) and record keeping to assure safe and proper operation of the DA interval meter in accordance with Commission and other applicable standards. PG&E may perform these services upon request by ESP if it determines that the DA interval meter meets Commission and other applicable installation and safety standards. The charges for such services are specified in PG&E's rate schedules.

Meter Data Management Agent (MDMA) Requirements

This section addresses the major systems responsibilities and requirements that Meter Data Management Agents (MDMAs) are required to perform. An MDMA is an entity that takes raw meter outputs, validates them using validation, editing, and estimating rules, adds corollary information needed to

characterize the customer, and makes complete customer information available to others for use in various applications. As some of the rules and requirements for interval and monthly (template data) are different, the two usage types will be addressed separately.

MDMA responsibilities and requirements were established in decision 97-12-048 and the Retail Settlement and Information Flow (RSIF) Workshops. Decision and workshop reports are available for those interested in obtaining comprehensive information on MDMA responsibilities at the CPUC website address, **http://www.cpuc.ca.gov/**.

During 1998, ESPs may utilize compliant metering service providers other than PG&E for customers whose maximum demand is equal to or greater than 20 kWh only. However, starting January 1, 1999, ESPs may use compliant metering service providers for all DA customers.

MDMA Approval Process and Requirements

The CPUC Decision on the Meter and Data Communication Standards Workshop Report of December 3, 1997, directed the UDCs to develop a MDMA qualification/approval process for ESPs and MDMAs who wish to offer MDMA services.

The CPUC requires that potential MDMAs comply with current UDC standards in experience, education and training in order to perform the following functions of an MDMA:

- Manage the meter reading schedule
- Read and retrieve meter data
- Submit meter data to MDMA server using CMEP protocol
- Calculate usage
- Validate, edit and estimate meter data
- Format data
- Manage data on MDMA server
- Meter/device management

APPLICATION AND CHECKLIST

The potential MDMA must complete the "Application for MDMA Approval" and checklist which are available on the "DA Documents" link on the *ESP Resource Center website* at **http://www.pge.com/esp**. The name of the document is "MDMA Qualification Instructions." The MDMA must forward the application and checklist per the specifications in the section below, "***Written Requirements***."

WRITTEN REQUIREMENTS

The potential MDMA forwards the completed application, the checklist as well as all written requirements by mail or fax to:

ESP Relations
PG & E
P.O. Box 770000, M/C H28B
San Francisco, California 94177
Fax: 415-973-8494

The PG&E will review the submitted documentation of this test, determine if the potential MDMA is compliant with its standards and notify the MDMA via e-mail. PG&E has established a goal of 10 business days to review the documentation and respond to the potential MDMA. If the applicant is found to be compliant, the MDMA may

immediately begin to serve accounts for which the ESP has identified the specific MDMA relationship through the submission of DASRs. Inception of MDMA service is also contingent upon the coordination between PG&E and the MDMA regarding read scheduling.
Omitted documentation of the submitted written requirements will result in the PG&E requesting that additional information. If it is deemed after the UDC's review of the submitted written requirements that the potential MDMAs process is insufficient, the potential MDMA will fail the written requirements portion and will need to resubmit for qualification/approval.

SERVER ACCEPTANCE TEST

1. Subsequent to the PG&E receiving the completed qualification documentation, the potential MDMA may contact PG&E to schedule the acceptance test.

2. PG&E will work with the applicant to ensure that it meets hardware and software requirements and will also send a sample test to the applicant prior to the test date.

3. PG&E will then provide the potential MDMA with data for the server acceptance test. The purpose of the server acceptance test is for the potential MDMA to demonstrate that it can calculate usage, validate, estimate and edit usage; format the usage in the California Metering Exchange Protocol (CMEP) format; post the data to the potential MDMA's server; and provide the UDC with access to the server. Detailed steps are outlined in the MDMA Server Acceptance Testing document .

4. The acceptance test is then performed. The UDC's have established a 48 hour turn-around time requirement for the completion of this test.

5. If the potential MDMA fails the server acceptance test the first time, they can reschedule for re-test. However, if a failure occurs twice, the potential MDMA must wait three months before re-testing will be allowed.

6. In addition, re-testing will be required if new software is installed or if new technology is implemented by the potential MDMA and their use of the server.

BACK-UP READING PROCESS

If the potential MDMAs primary source of reading meters is a method other than the manual process, the potential MDMA, in addition to submitting documentation on its primary method must also demonstrate that it has a capable back-up process in place. Details of the backup process is also outlined on the checklist.

DATA FORMAT

MDMA data format requirements for each UDC is included with the application and checklist.

SECURITY AND CONFIDENTIALITY

Data security and confidentiality requirements are outlined in more detail by PG&E. However in general, data must be located in a secure facility and have firewall or equivalent protection.

HELP DESK

The CPUC decision requires that a technical help desk be provided by the UDCs as well as MDMAs. Each UDC have toll free numbers available. The potential MDMAs must provide a technical support number as well. This phone must be answered immediately during normal business hours. However, after hour calls regarding the server must be returned within one hour. All other after hour calls can be deferred to the next business day.

Validating and Editing Data

The MDMA will be responsible for performing approved quality checks to the raw data retrieved from the meters as described in the CA VEE Rules, located on the Direct Access Implementation Workshops Web page at **http://162.15.5.2/wk-group/dai/dai3/**. The quality checks include validating and editing the usage data. Upon completion of the validation and editing processes, an estimation will be performed on the data, if necessary. Data estimations are summarized in the subsequent section " ***Estimating Data***". A comprehensive description of the rules for validating, editing, and estimating is also addressed within the CA VEE Rules document.
Below are the basic quality checks for interval and monthly data.

INTERVAL DATA

The interval data validations are summarized below. For a complete description of the rules, refer to the CA VEE Rules (**http://162.15.5.2/wk-group/dai/dai3**)..

1. **Spike Check**: The highest interval recorded in a 24 hour calendar day cannot exceed the third highest interval for that day by more than 180%. When a spike is identified, the usage for that interval is flagged as missing and the estimation rules are used to fill the missing intervals.

2. **High Low Average Daily Usage Check**: An average daily total consumption is calculated from the current month's usage data and is compared to the average daily consumption calculated from the previous year's data for the same billing month. If the current month's average consumption is outside of plus or minus 50% of the historical average consumption, then the MDMA must verify the usage (i.e., re-polling, meter test, etc.). If the data is verified, the usage is flagged as verified and continues on the data flow path.

3. **Sum Check**: The energy use recorded by the meter is compared to the energy use recorded by the pulse recorder. If the difference is greater than one meter multiplier (constant used to convert meter read to KWh) the data must be verified by the MDMA (i.e., repolling, meter test, etc.). If the data is verified, the usage is flagged as verified and continues on the data flow path.

4. **Hardware Checks**: The MDMA must ensure that the polling device is synchronized to the national time standard before data collection begins. The MDMA must verify that the time difference in the meter device is within 180 seconds for a 30-day time period. An interval tolerance check comparing the number of expected data intervals to the number intervals received is performed to ensure the time drift is less than 5 intervals. See the CA VEE Rules for a complete description of how to correct the time drift.

5. **Kilovolt-Ampere-Reactive hours (KVARH) Checks (if collected)**: If the kWh channel has zero consumption and for the corresponding time the kVARh channel has registered consumption, the

kWh data must be treated as missing. The kWh data should be estimated using the estimation rules described in the CA VEE Rules.

MONTHLY DATA

The MDMA function for monthly data customers (customers under 20 KW) does not unbundle until January 1, 1999. Therefore, the validating and editing functions for monthly data will only be performed by PG&E during 1998.

Estimating Data

Following the validation and editing (flagging usage as missing) of the usage data, the estimation routines are performed to ensure that complete usage data will be provided for the given billing period. Where raw data is available with incomplete entries, the MDMA will estimate the data gaps using approved and documented algorithms. After performing the estimation the MDMA will be responsible for providing the usage to the UDC and ESP. The following are the estimation rules for interval and monthly data.

INTERVAL DATA ESTIMATION RULES

GREATER THAN TWO CONTINUOUS HOURS OF MISSING INTERVAL DATA

1. Compute the average daily profile by using the days from the current usage period and as much historical data (up to 90 days) as required to select three complete days (which were not estimated) corresponding to the day of week or holiday with missing data. See the CA VEE Rules for additional details on how to select historical data when three complete days worth of data are not available.

2. If no historical holidays exist, use Sundays.

3. The historical data used should be that data immediately preceding the usage period, regardless of seasonal crossover.

4. Estimate the missing data by applying the appropriate average daily profile to fill the missing intervals.

TWO HOURS OR LESS OF CONTINUOUS MISSING INTERVAL DATA

1. Use the point to point linear interpolation method to estimate the missing data where there is a gap in the data.

2. If the gap occurs at the beginning of the span, use the last interval from the historical data as the first point, if the historical data is available and the interval data is not estimated. Otherwise, use the second point (the nearest good interval data) as the first point (i.e., a flat load). If the gap occurs at the end of the span, use the first point as the second point (i.e., a flat load) .

MONTHLY DATA

The MDMA function for monthly data customers (customers under 20 KW) does not unbundle until January 1, 1999. Therefore, the estimation functions for monthly data will only be performed by the UDCs during 1998.

Accuracy and Timeliness of Usage Data

All usage data will be accurate unless otherwise indicated. Data known to be inaccurate or missing will be estimated and flagged as estimated data. The following accuracy and timeliness standards for interval and monthly data must be followed by MDMAs. The accuracy and timeliness requirements stated below were adopted by the CPUC in decision 97-12-048..

INTERVAL DATA

ACCURACY

Either no more than 10% of the accounts will contain estimated data, or no more that 1% of all the data will be estimated.

TIMELINESS

Assuming that the meter read date is time zero:

- 80% of all usage data will be made available within 1 day of the scheduled read date of the meter
- 90% of all usage data will be made available within 2 days of the scheduled read date of the meter
- 99.99% of all usage data will be made available within 5 days of the scheduled read date of the meter

MONTHLY DATA

ACCURACY

Either no more than 10% of the accounts will contain estimated data, or no more than 1% of the data will be estimated.

TIMELINESS

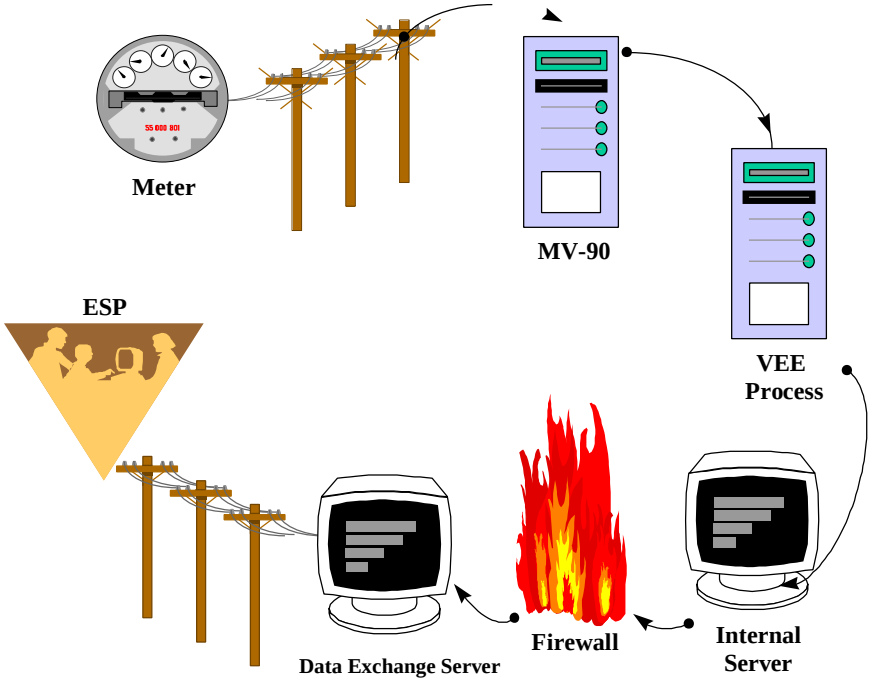
- 85% of all the monthly meter reads will be made available by 6:00 am on the 1st working day after the scheduled meter read date.
- 95% of all the monthly meter reads will be made available by 6:00 am on the 2nd working day after the scheduled meter read date.
- 99.99% of all monthly meter reads will be made available by 6:00 am on the 5th working day after the scheduled meter read date.

Data retention period

On a monthly basis, the MDMA will provide interval data for the billing period in 27 to 33 measured usage intervals. The interval may or may not be equal to a twenty four hour period depending upon the meter read cycle and scheduling. Once the interval data or the monthly usage is posted to the MDMA server it will remain available for three business days. Upon request, this data will be available after the three business day period. The MDMA must also store 36 months of historical consumption data.

Electronic exchange of metering data

The diagram below illustrates the flow of metering information from the meter to the ESP.



METERING CONFIGURATION CHANGES AND METERING CHANGE OUTS

Currently, ESPs submit metering configuration changes and metering change outs requests by fax and not by DASR. PG&E anticipates that electronic submission of these requests will be feasible by early 1998.
Metering configuration changes and metering change outs should be faxed to the MEG (see the "DA Contacts" link on the ESP Resource Center website).

INTERVAL AND TIME-OF-USE (TOU) DATA

Interval data, which represents regular interval energy usage information (i.e. 5 minute, 15 minute, hourly), is submitted via the CMEP MEPMD01 record format type. Most metering information may be represented by using MEPMD01. Time-Of-Use data, which is characterized by consumption reads at different time periods, is represented by using the CMEP MEPMD02 record format type.

Field definitions and requirements for the MEPMD01 and MEPMD02 record format types are provided within the "CMEP Transaction Map" link on the Data Exchange Service website at **http://mads.pge.com**.

Meter Reading

METER READING DATA OBLIGATIONS

1. Meter data for DA Customers shall be read, validated, edited, and transferred pursuant to CPUC-approved standards.

2. Regardless of whether ESP or PG&E perform Meter reading services both PG&E and ESP shall have access to the server containing the data including at minimum the following data:

   a) Customer account number;

   b) Customer location;

   c) Starting and ending read, date and time if available;

   d) Usage data (e.g. kWh, kW, interval use, kVArh if measured);

   e) Estimated usage and adjustment flag or adjustment code;

   f) Meter identification number;

   g) Load point;

   h) ESP identification number;

   i) Identity of metering agent, if any, employed by ESP or PG&E;

   j) Load Profile ID (if applicable).

3. PG&E and ESP shall provide reasonable and timely access to Meter data to the ISO, Scheduling Coordinators (or their designated agents), and each other as required to allow the proper performance of billing, settlement, scheduling, forecasting and other functions.

4. The Party providing Meter reading services is required to keep the most recent 12 months of Customer consumption data for each DA Customer. Such data must be retained for a period of 36 months. Such data must be released on request to any ESP, or to PG&E, if authorized by the Customer.

PG&E METER READING

1. PG&E will read DA interval meters for DA customers on PG&E's read schedule for each service account provided that the meter is compatible with PG&E's meter reading systems and processes. The ESP will be responsible for any meter reading costs for this service as set forth in DA Rule 22.

2. PG&E, or its metering and data management agent (MDMA), will be required to install and maintain a data server in accordance with standards approved by the CPUC.

ESP METER READING

GENERAL REQUIREMENTS

1. No ESP may perform meter reading services for its own or any affiliated entity's use of DA Services.

2. No meter reading service may be provided by ESP until that ESP been approved by PG&E.

3. The ESP must keep PG&E notified at all times of the identity of the ESP's agent, if any, conducting Meter reading.

SCHEDULE FOR ESP METER READING

If ESP or it agents perform meter reading, it must do so on PG&E's meter read schedule for that service account as specified by PG&E, unless a different schedule is mutually agreed to by PG&E and ESP.

Metered Usage Rates

Metered usage rates are determined by end-use customers' electric rate schedules. Electric rate schedule information is available on PG&E's *Web Tariff Book* website at **http://www.pge.com/customer_services/business/tariffs/**.

Life Support Customers and Medical Baseline Quantities

Life Support customers are residential end-use customers who have a medical disability necessitating the use of a medical device(s) powered by utility supplied gas and/or electricity . These customers may qualify for a **Standard Medical Baseline Quantity** in addition to their regular baseline quantity (i.e. gas and/or electricity at the lowest Tier 1 residential rate). The Standard Medical Baseline Quantity is 500 kWh of electricity and/or 25 therms of gas per month year-round. Additional amounts of gas and electricity (**Medical Baseline Quantities**) are available at the Tier 1 rate to customers when a full-time member of the household is:

- dependent upon a medical life-support device used in the home.
- a paraplegic, hemiplegic, or quadriplegic person or a multiple sclerosis patient with special heating and/or cooling needs.

- a person being treated for a life-threatening illness or a person with a compromised immune system with special heating and/or cooling needs to sustain the life of the person or prevent deterioration of the person's medical condition.
- a scleroderma patient with special heating needs.

ESPs who have identified end-use customers which require Standard and/or additional Medical Baseline Quantities should refer to Electric Rule 14 for information concerning commodity service continuity and Rule 19 for details on end-use customer qualifications. These rules can be found within *PG&E's Web Tariff Book* at **http://www.pge.com/customer_services/business/tariffs/**.

For information on additional DASR requirements when submitting DASRs for Life Support customers, see the subsection "***ESP evaluates customer DA elections and obtains customer information…***" within Chapter 3, "**Processing Direct Access Service Requests**".

Metering Service Fees

PG&E will charge the ESP for any metering services it performs for DA Customers in accordance with CPUC-approved tariffs. DA filing document "E-ESP" includes information on approved metering service fees and is located on PG&E's Web Tariff Book website at **http://www.pge.com/customer_services/business/tariffs/**.

Meters supplied and installed by PG&E

If PG&E provides and installs a DA interval meter at the ESP's request, the ESP will be responsible for the meter cost, local sales tax, the Service Base Charge, the meter installation charge, and the programming and testing of the DA interval meter. An additional charge will apply for removal of the existing Meter. These charges are set forth in PG&E's rate schedules and must be paid in full by the ESP prior to any work being performed by PG&E.

Meters supplied by the ESP and installed by PG&E

If PG&E installs a DA interval meter provided by the ESP at the ESP's request, the ESP will be responsible for the Service Base Charge and the meter installation charge. Additionally, PG&E will charge the ESP for meter programming and testing, if these tasks have not been performed by the ESP in accordance with the provisions of PG&E's DA Rule 22. An additional charge will apply for removal of the existing Meter. These charges are set forth in PG&E's rate schedules and must be paid in full by the ESP prior to any work being performed by PG&E.

Customer Service

Metering Event Group (MEG)

The Metering Event Group (MEG) works with ESPs and PG&E field technicians to ensure that metering service requests are fulfilled in an efficient and timely manner. MEG is prepared to answer questions and resolve metering issues related to the following topics:

- Meter passwords
- Meter installations to include installation job forecasting
- Research on the status/tracking of meters
- Cancellation of DASRs and orders/jobs
- Meter events - the completed work that an ESP has been billed for
- Meter configuration data associated with a DA interval meter installation

ESPs should contact a MEG analyst (see the "DA Contacts" link on the ESP Resource Center website**)** for questions related to the topics noted above.

Chapter 6

DASR PROCESSES FOR METERING DATA ADJUSTMENTS AND CHANGES

This chapter was last updated on: 5/21/98

Overview

This chapter covers information on PG&E DASR processes which are initiated as a result of metering data adjustments and changes to DA account commodity status. The purpose of including this information in the handbook is to foster ESPs' understanding of the PG&E-initiated transaction records it may receive when certain account events take place and to make ESPs aware of situations in which they may need to initiate DASR transactions in response.

The processes and scenarios addressed include those which occur subsequent to the initial DA customer account switch. Additional DASR processes related to initial DA account setup and switching are discussed in Chapter 3, "**Processing Direct Access Service Requests**", under the section heading, "***Additional DASR procedures performed by PG&E***".

The material addressed includes details which are specific to CMEP transaction record types MEPAD01 (DASR) , MEPMD01, and MEPMD02. Readers may want to familiarize themselves with these record types and gain an understanding of regular metering data records before proceeding with the material in this chapter. For detailed information on CMEP DASR transactions see the "CMEP Transaction Map" link on the *DES* website at **http://www.mads.com/**.

DA Account Commodity Status Changes

DA Account Commodity Shut-Offs

PG&E can initiate the DA account commodity shut-off process if the end-use customer requests this action or in cases of non-payment. The processes discussed do not apply to situations where the ESP decides to discontinue service to the end-use customer.

PROCESS

Please note that the following processes apply to both monthly, TOU, demand and interval metered accounts.

1. When all meters associated with an account commodity have either been locked or removed, the account commodity status is considered "Removed" or "Closed" by PG&E. Due to the frequency with which end-use customers oftentimes change their commodity shut-off dates and also because of the lack of lead time, PG&E will initiate disconnect notification to the ESP after the final shut-off meter read is taken and the **Commodity Status** of the account has been changed to "REMOVED" or "CLOSED".

2. PG&E will then issue an administrative data type record ,MEPAD01, to the current, pending, and any ancillary service providers communicating the date the account commodity was shut-off. This transaction record will reflect "SVC" within the **Operation Type** field, "DISCONNECT" within the **Reason** field, and the date the commodity was shut-off in the **Effective End Date** field.

3. PG&E will also issue the metering data record(s), MEPMD01 and/or MEPMD02 to the current ESP, and current bill-calculator if PG&E is not the MDMA. These records will include usage information, but will not indicate that the end-use customer has been shut-off.

PG&E's system should initiate the relevant administrative and metering data records within two (2) business days following the account commodity status change.

MATRIX OF PG&E-INITIATED RECORDS RELATED TO SHUT-OFFS BY METER TYPE

The records indicated in the table below are issued by PG&E at the time the DA account commodity is shut-off.

Action	Issue record to current ESP, pending ESP, and all associated ESPs	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Record Type Issued	MEPAD01	MEPMD01	MEPMD02
Monthly Single-Metered	One MEPAD01 record: **Operation Type** field = "SVC" **Reason** field = "DISCONNECT" **Effective End Date Field** = date the account commodity was closed	One MEPMD01 record: Normal start/end read information record.	One MEPMD02 record: Normal totalized usage information record.
Monthly Multi-Metered	Same as above	A MEPMD01 record for each meter: Normal start/end read information record	A MEPMD02 record: Normal totalized usage information record. **Meter** field = "TOTAL"
Interval Single-Metered	Same as above	1. One or more MEPMD01 record(s), depending upon interval and period reported: normal (monthly, not interval) start/end read information record. 2. One or more MEPMD01 record(s): normal usage information record by interval.	None

Action	Issue record to current ESP, pending ESP, and all associated ESPs	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Interval Multi-Metered	Same as above	1. One or more MEPMD01 record(s), depending upon interval and period reported: normal (monthly, not interval) start/end read information record. 2. One or more MEPMD01 record(s): normal usage information record by interval. **Meter** field = "TOTAL"	None
Demand Metered	Same as above	One MEPMD01 Record: normal start/end red information record	1. One MEPMD02 record: normal usage information record 2. One MEPMD02 Record: normal demand usage information
TOU Metered	Same as above	None	1. One MEPMD02 record: normal start read information 2. One MEPMD02 record: normal end read information 3. One MEPMD02 record: normal usage information record

EXAMPLE

Scenario: An interval metered customer has been billed from 5/15 to 6/15. The customer requests a shut-off for 7/28.

Process:

1. PG&E will issue the metering data record(s), MEPMD01 and/or MEPMD02, to the current ESP as well as the bill-calculator if PG&E is not the MDMA for the period 6/15 to 7/15.

2. After the 7/28 shut-off is processed, the current ESP, the pending ESP, and any ancillary service providers will receive an administrative data record MEPAD01, indicating that the account commodity service has been disconnected and the effective date of 7/28.

3. The current ESP, as well as the bill-calculator if PG&E is not the MDMA, will receive a metering data record MEPMD01 for the period 7/15 to 7/28. This metering record will be initiated as soon as the shut-off has been processed , it will not be subject to the timing of the customer's normal billing cycle.

Exception: If a Lock Pending is issued, this means the account is marked to not bill until the account commodity is closed (i.e., there will not be a bill for on-cycle bill on 7/15). In this case, the metering records will be for the period 6/15 to 7/28.

Meter Change

A meter change should not cause an interruption of DA service. Monthly, interval, demand, and time-of-use (TOU) metered accounts should receive the metering records shown in the table below at the time of the customer's normal billing cycle.

MATRIX OF PG&E-INITIATED RECORDS RELATED TO METER CHANGE

The records indicated in the table below are issued by PG&E in correspondence with the customer's regular bill cycle.

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Record Type Issued	MEPMD01	MEPMD02
Monthly Single-Metered	• One MEPMD01 record for the old meter: normal start/end read information **Meter** field = old meter number • One MEPMD01 record for the new meter: normal start/end read information **Meter** field = new meter number	One MEPMD02 record: Normal totalized usage information record for both meters **Meter** field = "TOTAL"

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Monthly Multi-Metered	• One MEPMD01 record for each old meter removed: normal start/end read information **Meter** field = old meter number • One MEPMD01 record for each new meter installed: normal start/end read information **Meter** field = new meter number	One MEPMD02: Normal usage information record totalizing usage for all meters. **Meter** field = "TOTAL"

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Interval Single-Metered	• One MEPMD01 record for the old meter: normal monthly (not interval)start/end read information **Meter** field = old meter number • One MEPMD01 record for the new meter: normal monthly (not interval) start/end read information **Meter** field = new meter number • One MEPMD01 record: normal totalized usage record **Meter** field = “TOTAL”	None

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Interval Multi-Metered	• One MEPMD01 record for each old meter: normal start/end read information **Meter** field = old meter number • One MEPMD01 record for each new meter: normal start/end read information **Meter** field = new meter number • One MEPMD01 record: totalized usage record **Meter** field = "TOTAL"	None

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Demand Metered	• One MEPMD01 record for the old meter: normal start/end read information (KWHREG) **Meter** field = old meter number • One MEPMD01 record for the new meter: normal start/end read information (KWHREG) **Meter** field = new meter number	• One MEPMD02 record for the old meter: usage information (KWH) • One MEPMD02 record for the new meter: usage information (KWH) • One MEPMD02 record for the old meter: demand usage information (KW) • One MEPMD02 record for the new meter: demand usage information (KW)

ACTION	ISSUE RECORD TO CURRENT ESP AND BILL CALCULATOR	ISSUE RECORD TO CURRENT ESP AND BILL CALCULATOR
TOU METERED	NONE	• ONE MEPMD02 RECORDS FOR THE OLD METER: START READS INFORMATION **METER** FIELD = OLD METER NUMBER • ONE MEPMD02 RECORDS FOR THE NEW METER: START READS INFORMATION **METER** FIELD = NEW METER NUMBER • ONE MEPMD02 RECORDS FOR THE OLD METER: END READS INFORMATION **METER** FIELD = OLD METER NUMBER • ONE MEPMD02 RECORDS FOR THE NEW METER: END READS INFORMATION **METER** FIELD = NEW METER NUMBER • ONE MEPMD02 RECORD FOR THE OLD AND NEW METERS' TOTALIZED USAGE INFORMATION **METER** FIELD = "TOTAL"

EXAMPLE

Scenario: 1/2 was the last on cycle billing read date with a read of 00500. On 1/15 there was a meter change, and the old meter had an end read of 00550. The new meter had a start read of 00000. On 2/2 the billing cycle end read was 00060. Thus, the billing cycle usage reflects 50 kWh for the old meter and 60 kWh for the new meter for a total of 110 kWh totalized usage.

Process:

1. PG&E will issue to the ESP, the appropriate metering data type records, (MEPMD01, MEPMD02) on 2/2. The appropriate metering data type records will show the old meter number and new meter number start/end reads as described in the above matrix. The metering data record for usage will indicate "TOTAL" in the Meter Field.

NEW METER SETS WHICH ARE NOT CONCURRENT WITH OLD METER REMOVALS

The example above assumes that the new meter is set on the same day that the old meter is removed. In reality, there may be situations where the old meter is removed, but the new meter cannot be set on the same day. In these cases, the account **Commodity Status** will be changed to "REMOVED" until the new meter is set.
If the account is a *dual* commodity, the **Commodity Status** for the commodity receiving the new meter will be changed to "OPEN" after the new meter has been set and the **Account #** and **GENID** fields will remain unchanged.
If the account is a *single* commodity, a new account may be created after the new meter has been set. A new GENID will be created if a new account number is created.
For both dual and single commodity accounts, an account status of CLOSED or REMOVED will require PG&E's system to initiate a disconnect notice to the ESP. The ESP will be required to initiate a SP-REQ/CONNECT MEPMD01 record to re-establish the account once the **Commodity Status** changes to "OPEN".

METER CONFIGURATION DATA

PG&E will communicate the new meter configuration information to ESPs through its Metering Event Group (MEG).

Usage Adjustments

Usage adjustments occur when previously reported usage for the account requires modification. The modification can be read and/or usage changes or changes in the reported periods (i.e., billing dates, interval period). PG&E communicates usage adjustments to ESPs through metering data type records MEPMD01 and MEPMD02. The adjustment transaction records look just like the original metering records with the period adjusted identified by the presence of an "A" in the **Quality Code** field. The adjusted reads/usage records for an account will reflect the correct reads/usage for a period which has already been reported. The metering data records will reflect usage amounts only and not dollar values associated with usage. The initiation of adjustment records is not dependent upon the timing of the end-use customer's billing cycle. Therefore, PG&E can issue adjustment records to the ESP immediately following an adjustment transaction at any time during a billing cycle.
In the adjusted metering data records sent to the ESPs, the set with adjustments in any of the following fields: reported periods, reads, usage, will be denoted by an 'A' in the Quality Code field. The set without adjustments will be reported with a blank in the Quality Code field. See example below.

USAGE ADJUSTMENTS TO MONTHLY METER DATA DUE TO ADDITIONAL VALIDATION CHECKING OF DATA WHEN PG&E IS THE MDMA

One reason adjustments may occur, when PG&E is the MDMA, is that PG&E continues to perform validation of meter data after that data is sent to ESPs. PG&E uses several systems to validate meter data. A metering record will sometimes pass initial validation checks, and fail later checks. Data is sent to the ESP after the initial checks. If potential problems are identified as the record is passed through additional tests, the information is re-verified to determine if there is in fact an error. In many cases, the data is not in error and does not have to be adjusted. However, when there is an error, adjustments need to be made to the data. Adjustments made in accordance with the processes described in the subsequent sections of this document are then sent to the ESP.

MATRIX OF PG&E-INITIATED RECORDS RELATED TO USAGE ADJUSTMENTS

The records indicated in the table below are issued by PG&E at the time the adjustment is made.

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Record Type Issued	MEPMD01	MEPMD02
Monthly Single-Metered	• One MEPMD01 record with the adjusted read in the **Data** field for each adjusted period **Example for a two months adjustment:** **Data** field = "199804150001, ,750,199805150001,A,1300" **Data** field = "199805150001,A,1300,199806150001,A ,1650"	One MEPMD02 record for each adjusted period with the adjusted total usage Example for a two months adjustment: **Eff Start** field = "199804150001" **Eff End** field = "199805150001" **Data** field = "TOTAL,A,550" **Eff Start** field = "199805150001" **Eff End** field = "199806150001" **Data** field = "TOTAL,A,350"
Monthly Multi-Metered	• One MEPMD01 record for the adjusted meter, with the adjusted reads in the **Data** field (similar to monthly single-metered reads adjustment record). **Meter** field = adjusted meter number	One MEPMD02 record for each adjusted period with the adjusted totalized usage for all the meters (similar to single-metered usage adjustment record). **Meter** field = "TOTAL"

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
Interval Single-Metered	• One or more MEPMD01 record(s) with adjusted start/end reads information record (similar to monthly single-metered reads adjustment record). • One or more MEPMD01 record(s) with adjusted totalized usage (similar to monthly single-metered usage adjustment record).	None
Interval Multi-Metered	Same as above.	None
Demand Metered	• One MEPMD01 record with the adjusted reads in the **Data** field (similar to monthly single-metered reads adjustment record).	• One MEPMD02 record with the adjusted total usage in the **Data** field (similar to monthly single-metered usage adjustment record). • One MEPMD02 with the adjusted demand usage information (similar to the monthly single-metered usage adjustment record).

Action	Issue record to current ESP and Bill Calculator	Issue record to current ESP and Bill Calculator
TOU Metered	None	• One MEPMD02 record with the adjusted start reads information • One MEPMD02 record with the adjusted end reads information • One MEPMD02 record with the adjusted totalized usage information

Example

Scenario: A monthly metered account has been billed in the following manner and the normal MEPMD01 and MEPMD02 record(s) have already been sent to the ESP when the account was billed:

ESP Name	Date	MEPMD02 Usage	MEPMD01: Start Read	End Read
PG&E	2/15 -3/15	400 kWh	0	400
PG&E	3/15 - 4/15	350 kWh	400	750
ESP	4/15 - 5/15	500 kWh	750	1250
ESP	5/15 - 6/15	400 kWh	1250	1650

On 6/23 a correction is made to the period 4/15 - 5/15. The usage for the period should have been reported as 550 kWh with an end read of 1300. Then on 6/26 a correction is made to the period 5/15 - 6/15. The usage should have been 350 kWh with an end read of 1650.

Process:

Under the given scenario PG&E would issue the records shown in the table below when the adjustment is made to the account.

TIMING ORDER	RECORD TYPE ISSUED	DATA INCLUDED IN RECORD
1.	MEPMD01	DATA FIELD = 199804150001, ,750,199805150001,A,1300
2.	MEPMD02	EFF START FIELD = 199804150001 EFF STOP FIELD = 199805150001 DATA FIELD = TOTAL,A,550
3.	MEPMD01	DATA FIELD = 199805150001,A,1300,199806150001,A,1650
4.	MEPMD02	EFF START FIELD = 199805150001 EFF STOP FIELD = 199806150001 DATA FIELD = TOTAL,A,350

Records for items 1 and 2 will be sent on the same day (6/23) when the bill period 4/14 - 5/15 is adjusted. Then the records for items 3 and 4 will be sent on the same day (6/26) when the bill period 5/15 - 6/15 is adjusted. The timing between the sending of the two sets of records will be around 3 days and based on when each adjustment transaction is processed.

STAND ALONE REBATE TRANSACTIONS (REVERSAL ONLY ADJUSTMENT)

Under some circumstances only a rebate transaction will need to be made to the account. A rebate is a reversal of what was originally billed. This business scenario may occur when PG&E needs to reverse a bill and then wait for the next on cycle bill to rebill the account. In this situation, PG&E's system will wait for three (3) processing days after a rebill transaction is processed by the biller. If the rebill transaction does not occur within three (3) processing days of the rebate, the system will interpret the rebill as an reversal only adjustment and send the rebate as a meter adjustment record reversing the reads, and with 0 usage. When the rebill transaction is eventually processed through the system, then the rebill transaction will be sent to the ESP's as adjusted reads/usage records. Using the same scenario as the previous example, adjust the billing for the bill period of 5/15 - 6/15. The adjustment is to just reverse the bill and let next month's on cycle read generate the rebill. So, on 6/20, a reversal is processed. On 6/23, the system did not receive the rebill for 5/15 to 6/15, so it assumed the biller wanted to do just a reversal only adjustment. The system will send to the ESP the following records on 6/23:
MEPMD01 - DATA field = 199805150001,A,1250,199805150001,A,1250
MEPMD02 - Eff Start field = 199805150001 Eff Stop field = 199805150001 DATA field = TOTAL, A,0
On 7/15 - the next on cycle billing, the following records will be sent. Note, since the billing period includes the bill period that was reversed, the quality code will be A to indicate an adjustment to a previously sent metering data record.
MEPMD01 - DATA field = 199805150001, ,1250,199807150001,A,1850
MEPMD02 - Eff Start field = 199805150001 Eff Stop field = 199807150001 DATA field = TOTAL,A,600

Corrections

Corrected Closing

TBD

Corrected Commencing

TBD