



Meter Data Management Agent (MDMA)

Qualification Package

Version 4.1

March 6, 1998

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MDMA Qualification Package

TABLE OF CONTENTS

Section	Description	Page
1.0	QUALIFYING AS A METER DATA MANAGEMENT AGENT	1
2.0	APPLICATION FOR MDMA SERVICES	3
3.0	MDMA COMPLIANCE EVALUATION CHECKLIST	5
4.0	SCE'S HIRING/TRAINING REQUIREMENTS FOR METER READING PERSONNEL	11
5.0	SCE'S HIRING/TRAINING REQUIREMENTS FOR MDMA SYSTEMS AND APPLICATION PERSONNEL	22
6.0	ENERGY DIVERSION	28
7.0	SUBCONTRACTOR POLICY	29
8.0	TELEPHONIC & AUTOMATED METER READING	30
9.0	STANDARDS OF CONDUCT	31
10.0	TITLE 8 OF OSHA SAFETY ORDERS	32
11.0	MDMA SERVER ACCEPTANCE TESTING	34
12.0	TEMPLATE OF ACCEPTANCE TEST SUMMARY REPORT	47
13.0	DISASTER RECOVERY PLAN TEMPLATE	49
14.0	CALIFORNIA METERING EXCHANGE PROTOCOL (CMEP); ALSO KNOWN AS PG&E METERING EXCHANGE PROTOCOL	53
15.0	Utility Industry Group Implementation Guide for EDI – Transaction Set 867	86
16.0	Field Definitions of Test Data	105

Instructions for Qualifying or Being Approved as a Meter Data Management Agent (MDMA)

Background

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

The CPUC requires that potential MDMA's 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
- Calculate usage
- Validate, edit and estimate meter data
- Format data
- Manage data on MDMA server
- Meter/device management

The intent of this document is to provide instructions on what is required to become a qualified/approved MDMA.

Application

The potential MDMA completes the "Interim Application for MDMA Services." (Attached).

Checklist

A checklist identifying all required written documentation will also be included with the application. (Attached).

Written Requirements

The potential MDMA forwards the completed application, the checklist, as well as all written requirements to the appropriate UDC ESP Services/Relations Organization.

Customer Choice Services

SCE

6020 N. Irwindale Avenue, Suite I
Irwindale, CA 91702
Attn: Electronic Communications
Coordinator

ESP Relations

PG&E

P.O. Box 770000
Mail Code H28B
San Francisco, CA 94177

ESP Administration

SDG&E

8326 Center Park Ct
Suite 6200
San Diego, CA 92123-1582

The UDCs will review the submitted documentation, determine if the potential MDMA's standards are consistent with the UDC's standards, and notify the MDMA via e-mail. The UDCs have established a goal of 10 business days to review the documentation and respond to the potential MDMA. "Omitted" documentation of the submitted written requirements will result in the UDC requesting that additional information. MDMA's will be notified to submit "omitted" information. However, insufficient requirements will require the potential MDMA's to resubmit that portion of the requirements.

Once the potential MDMA's application and documentation are complete, and the MDMA has passed the server acceptance test, after coordination with the UDC's Meter Reading organization concerning read scheduling, the MDMA may begin to immediately offer services.

Server Acceptance Test

After the UDC receives the completed qualification documentation, the potential MDMA may contact the UDC to schedule the acceptance test. SCE applicants may contact the Meter Operations Support Desk (MOSD) at 1-800-203-4634.

The UDC 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) or Electronic Data Interchange (EDI) formats; post the data to the potential MDMA's server; and provide the UDC with automated access to the server. Detailed steps are outlined in the MDMA Server Acceptance Testing document.

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

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

In addition, re-testing will be required if new software is installed or if new technology is implemented by the potential MDMA.

Back-up Reading Process

If the potential MDMA's 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 this are outlined in the attached checklist).

Data Format

MDMA data format requirements for each UDC are included in the package as an Appendix.

Security and Confidentiality

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

Help Desk

The CPUC decision requires that a technical help desk be provided by the UDCs as well as MDMA's. Each UDC must have toll free numbers available. All potential MDMA's must provide 24/365 access to technical assistance. This includes help desk phone number, e-mail address, contact names and pager numbers. The help desk phone must be answered promptly during normal business hours. However, the 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.



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APPLICATION FOR MDMA SERVICES

Purpose: This application and the attached documents are to be used by Applicants when applying for Meter Data Management Agent (MDMA) acceptance. Use this cover letter and the attached list to indicate what information you have included with your application and to ensure that you have all the required documentation.

You will receive an acknowledgement that we have received your application, as well as any necessary requests for additional information, within ten business days. You will also receive information on the Acceptance Test with sample data, contact names and procedures.

If this application is approved by SCE, the **MDMA** is not authorized to provide **MDMA** services except on behalf of an Electric Service Provider (ESP) who is duly authorized to provide direct access services in a UDC service territory under a UDC’s direct access tariffs and a valid ESP Service Agreement.

By signing this agreement, the applicant agrees to keep confidential all data transmitted to it by the UDC in the acceptance testing process.

MDMA NAME: _____ **CONTACT PERSON:** _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

BUSINESS PHONE: (____) _____

THE INFORMATION BELOW IS NEEDED FOR CONNECTIVITY:

COMPLETE URL ADDRESS: _____ **USER CODE:** _____

PASSWORD: _____

LIST OF ESP’s YOU ARE DOING BUSINESS WITH:

** Priority is given to those MDMA’s who are doing business with an ESP who has a signed agreement.

SIGNATURE: _____ **DATE:** _____

** Signature should be someone who has legal authority at the MDMA business, i.e., officer.

TITLE: _____

MAIL TO:

Southern California Edison
Customer Choice Service
Attn: Electronic Communications Coordinator
6020 N. Irwindale Avenue, Suite I
Irwindale, CA 91702

SCE Key Contacts:

MDMA Web Address.....<http://www.sce.com/d-db/meter-data/meter-datamanagement.htm>

Chris Tran.....1-626-812-7675
Customer Choice Services

Linda Fuentes.....1-626-967-8375
Manager
Interval Data Operations

Luis Chacon.....1-626-543-6814
IT Manager
MDMA Systems Support

MDMA Approval Checklist

MDMA Services Applied For: (check all that apply)

- Interval Data Services (Hourly)
- Cumulative Data Services (Monthly)
- Interval Data Services (15 minute) – EDI
- Each MDMA shall be required to submit a written application to the UDC with which it is request MDMA approval.
- Each MDMA applicant with an executed ESP agreement with the UDC which it is requesting MDMA approval, will receive priority.
- This MDMA approval will be granted to MDMA agents that possess the ability to perform these functions as outlined by the three UDCs in the December MDMA Workshops.
- The approval is based on the review of the written application, completed documents and a Data Management Acceptance Test.
- Upon request from the MDMA applicant and submission of application, the UDC will electronically forward a copy of the Data Management Acceptance Test.
- **The written application shall include:**
 - A completed written application, including the name and address of the MDMA.
 - A completed approval checklist
 - A description of the MDMA applicant’s experience in meter reading and meter data management.
 - **Meter Reading Training Program/Manuals, including but not limited to the following:**
(Check all that apply)

<input type="checkbox"/> Safety	<input type="checkbox"/> Meter Reader Work Practices & Job Description
<input type="checkbox"/> Security	<input type="checkbox"/> Meter Reading Training Guide (e.g., Meter Pro License)
<input type="checkbox"/> Hand held device training manual	<input type="checkbox"/> Uniform & equipment
<input type="checkbox"/> Performance Responsibilities	<input type="checkbox"/> Vehicle Insurance
<input type="checkbox"/> Customer Relations	<input type="checkbox"/> Additional documentation and/or manuals to meter reading
<input type="checkbox"/> Hiring Practices & Criteria	<input type="checkbox"/> Subcontractor list, if applicable
 - **Meter Data Management Agent Training Curriculum and Operational Procedures, including but not limited to the following:** (Check all that apply) If the required information identified in the Acceptance package is not included in the documents listed below, please include the document or describe how the requirement is being met.

<input type="checkbox"/> Hiring Practices	<input type="checkbox"/> Position Descriptions
<input type="checkbox"/> Training Curriculum	<input type="checkbox"/> Operational Procedures (Sample)
<input type="checkbox"/> Disaster Recovery	<input type="checkbox"/> Position Descriptions
<input type="checkbox"/> Operations/System Description	
 - **Successful completion of the Data Management Acceptance Test will include, but not be limited to the following:**
 - ⇒ Input and output data will be matched to the test questions using the MEPMD01 field “Receiver customer ID” with the following format: MDMATESTnn where nn=test question number
 - ⇒ VEE data must be produced through automated means that provide a systematic and consistent set of results.
 - ⇒ If data are manipulated manually, the MDMA must document the procedures that it has implemented to insure consistency.

Manual Meter Reading Qualification Requirements Checklist

as developed by SCE, SDG&E, and PG&E at San Francisco, California on
January 20, 1998

***Applicants must contact the appropriate UDC to consider any deviation
from the following requirements.***

Section I. Please provide a brief description for items 1-5.

1.0. Capability

- 1.1. Experience in providing meter reading services and current capability

2.0. Initial Meter Reader Applicant Screening

- 2.1. Education requirements
- 2.2. Security screening
- 2.3. Drug screening
- 2.4. Photo I.D. required
- 2.5. Proof of valid driver's licenses

3.0. Job Training Requirements

- 3.1. Combination classroom and field training – minimum of 10 days
- 3.2. Meter Pro training (or other “how to read” training programs) and testing
- 3.3. Hand-held device training
- 3.4. Equal Employment Opportunity Information

4.0. Safety Training

- 4.1. Cal OSHA Title 8 General Safety Orders
- 4.2. Safety policy
- 4.3. Accident reporting
- 4.4. Defensive driving
- 4.5. Hazardous material communication
- 4.6. Environmental safety/ergonomics
- 4.7. Dog bite prevention

Manual Meter Reading Requirements Checklist (continued)

5.0 Meter Reader Work Policies

- 5.1. Standards of conduct
- 5.2. Identification of hazardous conditions (i.e., wires down)
- 5.3. Company uniform/identification card
- 5.4. Customer key security
- 5.5. Insurance requirements (personal vehicle insurance if non-company vehicle)

Section II. Please provide copies of all lesson outlines, training manuals, and learning aids (lists of videos, brochures, etc.)

1.0. Lesson outlines for all job and safety training

2.0. Training manuals for all job and safety training

- 2.1. Hand-held Training Manual
- 2.2. Energy Diversion Program
- 2.3. Meter Reading Training Manual
- 2.4. Accident Prevention Manual

3.0 Learning aids

- 3.1. Customer communications

Section III. Please provide the following details and documentation regarding sub-contractors employed to perform MDMA services

1.0 MDMA Sub-contractors

- 1.1. Sub-contractor list
- 1.2. Sub-contractor documentation – training, safety, policies, and procedures
- 1.3. Sub-contractor Memorandum of Understanding
- 1.4. Sub-contractor back-up operational procedures

Telephonic & Automated Meter Reading Requirements Checklist

Section I. Please provide a description and/or documentation of telephonic and automated meter reading capabilities, including the methods used to identify possible theft.

1.0. Telephonic and Automated Meter Reading (AMR)

- 1.1. Compliance to state, local, federal laws
- 1.2. Telephone lines – customer has first priority
- 1.3. Tampering/energy diversion identification methods (tilt, reverse rotation, and power activation alarms)
- 1.4. Orphaned meter alarms
- 1.5. Control documentation

**MDMA Server
Qualification Requirements Checklist**

SCE, SDG&E, and PG&E continue to work to standardize these requirements.

1.0 Capability

- 1.1. Experience of Meter Data Management
- 1.2. Overview of System Design
- 1.3. Validating, Estimating, and Editing
- 1.4. Protection (Security) of Data
- 1.5. Archiving Data (3 yrs) and Data Recovery
- 1.6. Technical Support Desk and 24 hour availability
- 1.7. System Availability
- 1.8. Security of System

2.0 Disaster Recovery Plan (See Section 13)

3.0 Education and Hiring Process

- 3.1. Hiring Practices
 - 3.1.1. Education Requirements
 - 3.1.2. Screening Process
 - 3.1.3. Required competencies
 - 3.1.4. Experience
 - 3.1.5. Demonstrated skill operating required software
 - 3.1.6. Programming skills, if applicable
 - 3.1.7. Hardware support skills, if applicable
 - 3.1.8. Typing, oral, written, or other communication requirements
- 3.2. Training Practices
 - 3.2.1. Safety
 - 3.2.2. Interpersonal relations with internal and external customers
 - 3.2.3. Overview of MDMA requirements

MDMA Server Qualification Requirements Checklist (continued)

- 3.3. Copies of Training Manuals
 - 3.3.1. Written procedures for each major group of tasks written at the level for new hire to use after on the job demonstration
 - 3.3.2. Daily operations procedures (ex: system function checks, polling cycle reviews, troubleshooting, file imports and exports, VEE, etc.)
 - 3.3.3. Weekly processes to ensure productivity, performance, and data quality

4.0 Education and Hiring Process

- 4.1. System availability and Security of System



Southern California Edison Hiring/Training Requirements for Meter Reading Personnel

Various technologies are available to retrieve raw meter data. SCE's requirements for meter reading personnel focus on retrieval via hand-held equipment. While hand-held equipment is not required to read meters, a contingency plan to obtain meter data via hand-held equipment in the event of system or equipment failure is necessary.

Meter readers require meter reading and safety training to ensure Direct Access meters are read accurately and safely by experienced meter readers.

MDMA meter reading services will be performed in accordance with CPUC regulations. MDMA's must comply with the pertinent electrical safety provisions of CAL OSHA and SCE's safety requirements as they apply to the reading of electric meters.

To comply with SCE's requirements for meter reading services, potential MDMA's must properly train employees to:

- Accurately read Direct Access meter types using various technologies;
- Recognize and report meter, safety, hazardous, and tampering conditions to the ESP and UDC;
- Practice safe work habits considering environmental, equipment, and access conditions;
- Maintain and communicate site specific information to the ESP and UDC (access and location instructions);
- Maintain access to meter locations compatible with UDC guidelines; and,
- Comply with AB 400 (False Representation of Public Utility or District Employee Law) by carrying employee identification and a written description of the purpose of a site visit.

SCE meter reading standards include adhering to all State and Federal laws as they pertain to meter reading including Title 8 of the California Code of Regulations (see attached) and Title 13 of California Department of Motor Vehicles Code. The General Industry Safety Orders of Section 3203 of Title 8 require employees to use reasonable care in the performance of duties and act in such a manner as to assure safety and health to themselves, coworkers, and the public. Title 13 of the California Department of Motor Vehicles requires drivers of vehicles to be familiar with and obey all state vehicle codes, local traffic rules and ordinances governing vehicle operation. The Code requires the possession of a valid driver's license when operating a vehicle.

The following is an outline of SCE's Meter Reading hiring and training requirements. As directed by the CPUC, these standards will be used to qualify MDMA meter reading services until national standards are developed.

Southern California Edison Meter Reading Hiring/Training Requirements

I. Hiring Process

A. General Requirements

1. Initial Applicant Screening

- a) Work experience in "physical/outdoor activity"
- b) Record of job stability
- c) Experience in customer service-related occupations
- d) Criminal record investigation

2. Applicant Training

- a) 30 min. Clerical/Mechanical test
 - identifying tables/numbers
 - following directions
- b) Equal Opportunity (EOC) guidelines followed
- c) Confidential test data

3. Interview

Dimensional Interview focusing on experience:

- Aggressive Animals
- Physical Capabilities
- Customer Service
- Repetitive Duties
- Quality Control

4. Processing New Hire

- a) Security Forms
 - last 10 years of employment
 - last 10 years of residence
- b) Security Screening (internal)
- c) Formal Application
- d) Drug Screen
- e) Photo ID required for company ID
- f) Complete "Statement of Traffic Infraction Violations"
- g) DMV printout of driving record (<30 days) last five years
 - No more than 3 moving violations in last two years
 - No pending "failure to appear" violations
 - No pending accident (litigation)
 - Cannot be on probation – applicant may be eligible if on summary probation and no check in is required or fines pending

5. Falsification of Company Documents

If in the hiring process, the employee does not reveal a criminal record, the employee will/may be terminated.

6. Finalization

- a) Drug testing results
- b) Forms completed

II. Initial Training

Six days of classroom and 4 days of field training are provided to all new hires in the first two weeks of employment. Training includes the following subjects and activities:

<u>Description</u>	<u>Hours</u>
◆ Field exposure with current Meter Reader	40.00
◆ Meter Pro Training & Testing (equipment)	8.00
◆ Equal Employment Opportunity information	1.00
◆ Safety	
● DBU Safety Policy	0.50
● Injury & Illness Prevention Manual	1.00
● Defensive Driving	0.75
* Video / Discussion	
● Hazardous Communication	0.75
* Chemical Exposure in workplace and field	
● Fire Prevention	0.50
● Customer Communications	3.00
* Safety, Success & You	
* Customer Relations	
* SCE Policies & Procedures	
● Teamwork, Skill Building	1.00
* Video / Project	
● More Safety	
* Slips, Twists, Falls	3.00
* Dog bite Prevention	2.00
* Environmental Safety	1.50
- Street Smart video	
● Revenue Protection	2.00
* Overview of identifying:	
- Code violations	
- Hazards	
- Unsafe conditions	
● Handheld Equipment	5.00
* FS2/laptop	
● Identification	0.75
* Uniform (Company Logo)	
* Picture ID issued	
● Documentation of training received	0.50
* Rosters & General Office records	

III. Training Program Descriptions

A. New Hire Meter Reading Training

A comprehensive training program that focuses on technical (FS/2 device), field, safety, Equal Opportunity, Union, corporate security, energy diversion, and customer communication skills. Providing the student a wide range of the knowledge and skills required of meter reading personnel with special emphasis on safe work practices, customer relationships, and corporate policies.

B. Dog Bite Prevention & Protection Program

This beneficial safety program is to provide all field service employees with knowledge and skills to prevent and protect from the occurrence of a dog bite in the field. The course includes (4) main modules:

1. Module 1 – Introduction

- Statistics on Dog Bites
- Employee Experiences
- Bottom Line

2. Module 2 – Canine Characteristics

- Dog Behaviors
- Canine Body Language
- Breed Characteristics

2. Module 3 – Staying Safe

- Prevention Practices
- Injury Reporting
- Video

4. Module 4 – Wrap-up

- Course Summary
- Post-Survey

C. Equal Employment Opportunity Policy

Overview of SCE Corporate Equal Employment Opportunity Policy Statement as it adheres to State and Federal laws, its implications, and compliance issues for all employees. Topics covered include equal opportunity, affirmative action, sexual harassment and harassment. Information as to employee rights and procedures of reporting harassment and discrimination are provided.

D. Slips, Falls & Twists – The Field Employee Guide to Safety Education and Prevention Measure to Avert Slips, Falls, & Twists

This comprehensive safety program is comprised of two major modules, divided into several sections:

1. Module 1 – Safety Education

This module increases employee awareness and knowledge levels of the background education needed to understand the importance of the program in the prevention of injuries caused by Slips, Falls, & Twists. Sections include “The Four Elements of a Successful Safety Program” and “The Causes of Accidents.”

2. Module 2 – Prevention Measures

This module addresses the importance of prevention measures and practices necessary to focus on the avoidance of injuries caused by Slips, Falls, & Twists. To highlight these prevention measures, two videos are included to demonstrate these types of injuries. This Module also addresses the issue of what to do if the employee is injured; this is in the section: First-Step Personal First-Aid treatments. To conclude the program, beneficial warm-up/cool-down stretching exercises are explained and examples shown for employees to practice.

E. Meter Reader Communication Workshop, Module 1 – Safety, Success, & You

The Communication Workshop focuses on providing the employee with tools to deal with customer confrontation and crisis in a safer and more successful manner. The workshop consists of sections such as The Anatomy of a Crisis Development, The Balcony Tool, The Johari Window, The DISC (personal profile), and video role-play.

F. Meter Reader Communication Workshop, Module 2 – The Policies, Procedures, Customer and Me Paradigm

The main objective in this Communication Workshop is to provide employees the framework for dialog to learn about SCE's policies and procedures and the direct link to safety in the meeting of desired business goals. The course includes review and discussion of the video, "The Business of Paradigms" to move into the direction of breaking old paradigms of linear "blindness" thought processes, to a non-linear "big picture focus." To conclude the program, a section, The Competitive Edge, is facilitated with a classroom exercise to be completed and discussion on how important personal accountability and how teamwork is so vital to our success as a competitive company.

G. Customer Relations Training – C.A.T.S.

The main focus in this training program is to provide the employee with communication skills to assist them in the field and telephone interactions with customers to ensure satisfaction of their concerns and inquiries. C.A.T.S. is based on the video, "I'll Be Back," by Bob Farrell.

1. Consistency – consistent standards of service
2. Attitude – communication, listening skills, non-verbal interaction, face-to-face interaction, verbal techniques, difficult customer: anatomy of a crisis development, empathy, tone, solutions
3. Teamwork – building, rewarding teamwork and high performance
4. Service – providing excellent customer service

H. FS/2 Device Enhancement Training

This enhancement training is comprised of a combination of discussion, review, demonstration, and hands-on training of the FS/2 device in such areas as: resequencing, instruction/location codes, adding/updating special instructions, probe reading procedures, water meter reading safety and instruction, and general trouble-shooting procedures.

I. Premier Plus Workstation Enhancement Training

This enhancement training is comprised of a combination of discussion, review, demonstration, and hands-on training of the Premier Workstation in all work station activities and operations such as: working with Windows, setting up equipment and employees, managing routes, creating and editing daily assignments, uploading and downloading procedures, and general troubleshooting procedures.

IV. Standards of Performance

The following certification requirements are taken from the SCE Meter Reading Standards of Performance. The general descriptions included are applicable to any meter reading workforce with emphasis on safety and performance policies.

A. Safety Awareness

Safety is viewed as a top priority and it is the Meter Reader's responsibility to practice safe work habits daily. Awareness of field and office environments is required for the prevention of industrial and vehicle accidents.

1. Dog Bite Protection

Meter Readers are exposed to a variety of situations and conditions. The vast majority of injuries to Meter Readers are the result of dog bites. Consequently, it is mandatory for one of the following items to be carried while reading meters:

- a) Umbrella Company Issued
- b) Dog Stick Company Issued
- c) Dog Spray (as a last resort) Company Issued

2. Industrial Protection

Hard hats, ear protection and/or goggles should be worn in posted areas, whenever it is required by the "Injury and Illness Prevention Manual" and "The Fire, Information, Rules and Education Manual", or when instructed to do so by supervision.

All Industrial accidents are to be reported to supervisors as soon as possible. Company accident reports are to be completed on the date of occurrence using appropriate forms. All dog bites causing a break in the skin must be seen by a physician on the same day.

***NOTE – It is the responsibility of the Meter Reader to update special instruction changes (notes) and meter route conditions**

3. Accident and Damage Reports

Any accident involving company and/or customer vehicles no matter how slight, must be reported to supervision immediately. Company supplied damage report must be filled out and given to supervision on the day of the occurrence. All accidents, industrial and vehicle, will be reviewed and investigated. If the accident is found to be preventable, disciplinary action will take place, which may include suspension and/or termination.

Any damage to customer's property is to be reported to supervision immediately and the proper accident forms completed on the day of the occurrence and turned in supervision.

4. Accident Prevention Rules

Employees are to comply with all applicable safety rules and safe work practices contained in the "Injury and Illness Prevention Manual" and "The Fire, Information, Rules, and Education Manual". Each employee will be assigned a current copy of the manuals issued to him/her. In addition, each employee will be responsible to replace update pages when addenda are presented. Unsafe work conditions are to be reported to supervision immediately.

5. Customer Contact

Meter Readers are constantly entering customer's property and occasionally enter homes or businesses. Contact with the public in the normal course of Company business must be courteous and professional at all times. Adherence to SCE Standards of Conduct (attached) is required to maintain the trust and confidence of customers. Good customer relations is one of the basic responsibilities of meter reading. Arguments are to be avoided. The Meter Reader role is to build good will in handling the pleasant situations, and to do everything possible to change the unpleasant ones.

If a Meter Reader believes he/she is being harassed by a customer or feels unsafe due to a person or persons, leave the area of conflict/danger and refer the matter to supervision as soon as practical.

Company ID cards are provided and are to be presented to a customer upon request to assist in gaining access.

6. Uniforms

The professional appearance of the Meter Reading personnel is vital. Each Meter Reader is issued a complete set of uniforms. Adherence to the following Uniform Policy is mandatory:

- a) Uniformed personnel will be required, while on the job, to wear the "official" uniform, which consists of trousers or shorts, and shirts. When a jacket and/or cap is worn, it must be of the official uniform jacket and/or cap. **NO SUBSTITUTIONS ALLOWED.**
- b) The employee name tag is part of the official uniform and will be worn at all times.
- c) Foot wear is to have a hard or thick sole with plenty of support for feet and ankles. It should be lightweight to avoid fatigue, but be thick enough to protect from puncture wounds.
- d) If a violation of the Uniform Policy occurs, disciplinary action will be taken!

B. Performance Policy

1. Alcohol and Drug Abuse Policy

The purpose of this policy is to outline Company standards and procedures designed to guide employees in conducting their daily business in such a manner as to ensure the highest utilization of Company resources, as well as the greatest efficiency of Company employees.

a) Alcoholic Beverages

Possession or use of alcoholic beverages by an employee that may adversely impact the Company's safe and efficient operations, or its image, will result in disciplinary action including suspension and/or termination. This includes use and/or possession on Company property or during working hours including lunch period.

b) Drugs

Any employee who unlawfully possesses, uses, or is under the influence of drugs while on the job or during working hours, including lunch break shall be terminated.

2. Fitness For Duty

All employees are expected to report for work in a manner fit to perform his/her job. An employee who, for any reason, is unfit to work shall be relieved from duty and will be subject to discipline up to and including termination of employment.

The Company reserves the right to immediately terminate any employee at any time for just cause (per Corporate Policy Statement 19.98.1). So there is no misunderstanding, this document re-emphasizes those situations which include possession or use of alcoholic beverages or illegal drugs during working hours; grossly unacceptable job performance; gross misconduct; and, falsification of Company records.

3. Misconduct

Acts or omissions that are inappropriate to the workplace, including, but not limited to the following will result in disciplinary action including suspension and/or termination.

4. Insubordination

Failure to comply with company and other applicable rules and policies or the orders and/or the instructions given by a supervisor.

5. Dishonesty

Any misappropriation of money or property, falsification of company reports, records, and/or expense accounts, failure to tell the truth in matters relating to an employee's conduct on the job and in matters relating to an employee's absence from the job, abuse of benefits, including sick leave, long term disability and leaves of absence.

6. Falsification of Records

Falsification of company records is a cause for immediate termination. The following list includes, but is not limited to descriptions of the falsification of Company for which an employee will be held responsible.

a) Company Documents

Recording any information on a Company document known to be untrue at the time of recordation. This includes daily assignment/productivity sheets completed by Field Service Representatives.

b) Meter Reading

Under no circumstances are you to assume a “read without actually reading the meter. In addition, read must be entered into reading device at time of reading unless directed by supervisor (i.e., Device failure).

7. Energy Theft

The detection and reporting of missing or tampered seals, wiring infractions and any other abnormalities should be promptly report to Revenue Protection. Only visual inspections are allowed. Do not touch the meter socket area.

C. Meter Reader Safety Training Guidelines

The following safety training topics will be administrated for the purpose of continued awareness and prevention. Recommended frequency is provided.

1. Bi-Annually

Vehicle/First Aid Kit Inspections.

2. Annually

- a) Substance Abuse
- b) Hazard Communications
- c) Basic First-aid Instruction/CPR Training
- d) Field Safety Checks (SB-198)
- e) Customer Harassment Awareness
- f) Fence Jumping Policies/Awareness
- g) Dog Bit Protection

3. Every Two Years

- a) Snake Bite Instruction
- b) Defensive Driving

4. Safety Tool Listing

Each employee is responsible for safety publications and tools provided:

- a) First Aid Kit
- b) Hard Hat
- c) Meter Reader Manual

- d) Injury and Illness Prevention Manual
- e) Fire, Information, Rules, and Education Manual
- f) Dog Protection (umbrella/dog stick)
- g) Eye protection
- h) Ear protection
- i) Step ladder

5. Meter Reader Responsibility

Each Meter Reader shall be responsible for the safety training knowledge gained through this list and the proper use of tools in the prevention of controllable industrial and vehicle accidents.

V. Injury and Illness Prevention Program

SCE adheres to CAL OSHA Title 8 General Industry Safety Orders. The purpose of these orders is to secure safety in places of employment and to provide guidance to employers and employees alike. Section 3203 specifically addresses injury and illness prevention programs. SCE has established the following policies and programs to satisfy Title 8 requirements.

- A. Injury and Illness Prevention Manual – annual update and distribution
- B. Distribution Business Unit Safety Policy – annual update and distribution
- C. Annual Requirements – annual safety training requirements
- D. Distribution Business Unit Safety Investigations – investigation of every accident
- E. Day Training for New Meter Readers – encompassing safety, equipment, policies and procedures
- F. Annual Inspection – documented walk along/vehicle inspection of each meter reader (Senate Bill 198)
- G. Safety Council – communicate accident investigation results, complete work-site inspections, submit accident prevention recommendations, and provide health and safety information to employees
- H. Safety Teams – accident investigation, prevention recommendations, employee health and safety communication

Additional Follow-up Training

A. Best Practice Training

Length of training 2 hours

Experienced Meter readers share best practices with new hires describing successful methods utilized in handling a variety of situations encountered in the field. The descriptions focus on how to work safely.

B. Accident Follow-up

Length of training 2 hours

Any Meter Reader involved in an accident is required to attend a 2 hours overview of safe work practices. Attendees share methods of preventing the reoccurrence of the same type of accident. Safety policies are reviewed and best practices shared.

C. Meter Reading Training Follow-up

Length of training 8 hours

Follow-up Class for all newly hired Meter Readers that have been in the field for (60) days or more in some cases). This follow-up is designed to ensure complete understanding and validation of the (6) Day New Hire Meter Reader Training new employees have completed. The following course topics will be the focus of this 1 Day Follow-up Training:

1. FS/2 Premier Plus Training
2. Revenue Protection
3. Access & Accuracy
4. Safety Awareness Overview
5. Course Evaluation & Validation Test



Southern California Edison Education and Training Criteria for MDMA System and Application Personnel

I. Education Description

The Education Criteria are proposed as minimum requirements for an MDMA. The information provided should be furnished for each Job Function or Operational Job Category (System Operators, System Administrators, Information System Analyst, etc.). Use the checklist to ensure that the required topics are included in your documents. Check off each item that is included and submit a copy of each relevant document with this application.

Example: Job Description

The Data Retrieval Analyst/Operator is responsible for operating data retrieval software and systems which can retrieve internal usage data from meter/data recording equipment remotely by radio frequency, phone lines, or other technology. The Data Retrieval Analyst/Operator: Schedules automatic retrieval cycles; reviews error reports; Investigates reasons why sites did not call in and resolves those problems; Performs quality checks and estimation procedures; Imports and exports data files to other systems including UDC sites; Interactions with internal staff, external vendors, UDCs, and customers; and ensures data quality and maintains a safe working environment.

Education

Education is defined as the education level required to perform the Data Retrieval Analyst/Operator functions, and personal attributes and skills developed prior to employment in the position.

II. Training Curriculum Description

The training program for an MDMA should include lesson items. Training may be accomplished by a combination of on-the-job training, vendor provided training using classroom instruction, and self-paced training including video instruction. Use the checklist to ensure that the required topics are included in your documents. Check off each item that is included and submit a copy of each relevant document with this application. Please include an example class outline, curriculum, and or test to show how the training is performed and the level of detail provided in the training program. It is only necessary to provide an example document. **Do not include all training curriculum.**

III. Training Manual Description

The training manual for MDMA should include the items listed below. Use the checklist below to ensure that the required topics are included in your manuals. Check off each item that is included and submit a copy of a manual with this application. Please provide an example of a training manual that shows the type of information and detail contained in your other training manuals. It is only necessary to provide an example manual. **Do not include all training manuals.**

Southern California Edison Hiring/Training Requirements for MDMA Systems & Applications Personnel

I. Hiring Process

A. General Requirements

1. Initial Applicant Screening

- a) Work experience associated to required application; C+; C++; Oracle; Object oriented analysis and design; analytical ability; knowledge of complex metering technology
- b) Record of job stability
- c) Previous experience
- d) Criminal record investigation

2. Applicant Testing

- a) 30 wpm Clerical and Aptitude test
 - identifying tables/numbers
 - following directions
- b) Equal Opportunity (EOC) guidelines followed
- c) Confidential test data

3. Interview

Dimensional Interview focusing on experience:

- Software Development and maintenance
- Hardware maintenance
- Customer Service
- Quality Control

4. Processing New Hire

- a) Security Forms
 - last 10 years of employment
 - last 10 years of residence
- b) Security Screening (internal)
- c) Formal Application
- d) Drug Screen
- e) Photo ID required for company ID
- f) Complete "Statement of Traffic Infraction Violations"

5. Falsification of Company Documents

If an employee does not reveal their criminal record during the hiring process, employee will/may be terminated.

6. Finalization

- a) Drug testing results
- b) Forms Completed

II. Initial Training

Training requirements for MDMA systems personnel are based on the skill set of the applicant and requirements of system operation. Southern California Edison hires professionals with the existing skills acquired through education and experience. Screening and job hiring of capable individuals is pivotal in the data management requirements of our systems.

In the area of hiring MDMA personnel, SCE requires education and experience with:

- Oracle
- C++
- SQL

During first year of employment individuals go through “on the job training” to expand their skill base. This process includes a “mentor” type relationship where a newly hired employee shadows experienced employees to understand system and application operation.

In the area of hiring MDMA systems personnel, SCE currently hires Technical Support Specialist (TSP). To be hired, TSPs are required to have one of the following certifications:

- Microsoft Certified System Engineer (Microsoft MCSE)
- Novell Certified Network Engineer (Novell CNE)
- Compaq Accredited Systems Engineer (Compaq ASE) – hardware related

To receive one of these certificates, the individual is required to go through a testing process (i.e., Drake, which is a U.S. standard). Certification requirements are based on system application (e.g., if working on NT server, MCSE certification is required; if working on Novell, CNE certification is required). It is also preferred that if the individual has acquired the Microsoft or Novell certification that they also have the Compaq (hardware) certification.

III. Training Program Descriptions

A. New Employee Orientation

Overview of Southern California Edison explaining various aspects and benefits of the company. Topics include but are not limited to:

- History of Company
- Industry Restructuring
- Growth and Development Opportunities
- Employee Benefits

B. Equal Employment Opportunity Policy

Overview of SCE Corporate Equal Employment Opportunity Policy Statement as it adheres to State and Federal laws, its implications, and compliance issues for all employees. Topics covered include equal opportunity, affirmative actions, sexual harassment and harassment. Information as to employee rights and procedures of reporting harassment and discrimination are provided.

IV. Standards of Performance

A. Safety Awareness

Safety is viewed as a top priority for Southern California Edison and it is the responsibility of all employees to practice safe work habits daily. Awareness of field and office environments is required for the prevention of industrial and vehicle accidents.

1. Accident Prevention Rules

Employees are to comply with all applicable safety rules and safe work practices contained in the "injury and Illness Prevention Manual" and "The Fire, Information, Rules, and Education Manual". Each employee will be assigned a current copy of the manuals issued to him/her. In addition, each employee will be responsible to replace updated pages when addenda are presented. Unsafe work conditions are to be reported to supervision immediately.

B. Performance Policy

1. Alcohol and Drug Abuse Policy

The purpose of this policy is to outline the company standards and procedures designed to guide employees in the conduct of their daily business in such a manner as to ensure the highest utilization of company resources, as well as the greatest efficiency of company employees.

a) Alcoholic Beverages

Possession or use of alcoholic beverages by an employee which may adversely impact the Company's safe and efficient operations, or its image, will result in disciplinary action including suspension and/or termination. This includes use and/or possession on Company property or during working hours including lunch period.

b) Drugs

Any employee who unlawfully possesses, uses, or is under the influence of drugs while on the job or during working hours, including lunch break, shall be terminated.

2. Fitness for Duty

All employees are expected to report for work in a manner fit to perform his/her job. An employee who, for any reasons, is unfit to work shall be relieved from duty and will be subject to discipline up to and including termination of employment.

The Company reserves the right to immediately terminate any employee at any time for just cause (per Corporate Policy Statement 19.98.1). So there is no misunderstanding, this document re-emphasizes those situations which include possession or use of alcoholic beverages or illegal drugs during working hours; grossly unacceptable job performance; gross misconduct; and, falsification or Company records.

3. Misconduct

Acts or omissions that are inappropriate to the workplace, including, but not limited to the following will result in disciplinary action including suspension and/or termination.

A. Insubordination

Failure to comply with Company and other applicable rules and policies or the orders and/or the instructions given by a supervisor.

B. Dishonesty

Any misappropriation of money, or property, falsification of company reports, records, and/or expense accounts, failure to tell the truth in matters relating to an employee's conduct on the job and in matters relating to an employee's absence from the job, abuse of benefits, including sick leave, long term disability and leaves of absence.

C. Falsification of Records

Falsification of company records is a cause for immediate termination. The following list includes, but is not limited to, descriptions of the falsification of Company for which an employee will be held responsible.

- **Company Documents**

- Recording any information on a Company document known to be untrue at the time of recordation. This includes daily assignment/productivity sheets completed by Field Service Representatives.

V. Injury and Illness Prevention Program

SCE adheres to CAL OSHA Title 8 General Industry Safety Orders. The purpose of these orders is to secure safety in places of employment and to provide guidance to employers and employees alike. Section 3203 specifically addresses injury and illness prevention programs. SCE has established the following policies and programs to satisfy Title 8 requirements.

- A. Injury and Illness Prevention Manual – annual update and distribution
- B. Distribution Business Unit Safety Policy – annual update and distribution
- C. Distribution Business Unit Safety Investigations – investigation of every accident



Energy Diversion Program

SCE is currently developing an Energy Diversion Program designed for Direct Access (DA) participants. The program will include policies and procedures for Electric Service Providers (ESPs), Meter Data Management Agents (MDMAs), and Meter Service Providers (MSPs) and will define their respective roles and responsibilities. Included will be descriptions of the preliminary investigation, reporting, monitoring, and tracking requirements of suspected energy diversion condition.

Tamper alarms required to identify energy diversion will be included in the telephonic and automated meter reading portion of the Energy Diversion Program documentation. This will be an SCE requirement.

Meter Data Management Agent (MDMA) Subcontractors

1.0. Subcontractors

1.1. Subcontractors hired to perform MDMA services are required to meet all SCE and CPUC requirements. SCE requires the MDMA to provide a list of subcontractors employed to perform MDMA services prior to that MDMA becoming qualified. This list shall include:

- Business owner name
- DBA
- Address
- Mailing address
- Contractor license number
- Length of business ownership

1.2. Each MDMA will have on file the training curriculum, safety policies, and performance requirements of the subcontractor. These documents will be available for SCE review upon request.

1.3. MDMA shall provide SCE with a copy of the “Memorandum of Understanding” (or related contractual document) signed by the officers or appropriate personnel of the MDMA and the subcontractor.

1.4. MDMA shall provide SCE with a copy of the operational procedures for back-up MDMA services provided by subcontractors performing MDMA services. This document shall describe the timing of each event that will occur as a back-up to the remote reading process.

Telephonic and Automated Meter Reading Requirements

- 1.0. Hiring and Training
 - 1.1. Telephonic and Automated Meter Reading (AMR) or radio frequency operators are required to meet the hiring process requirements for Meter Readers as specified in the Meter Data Management Agent (MDMA) Qualifications Package (found in section 3, pages 10 and 11).
 - 1.2. The training of these employees is left to the discretion of the MDMA's. The training should meet all requirements necessary to meet CPUC decisions regarding Direct Access. The training outlines and learning aids should be made available to SCE upon request.
- 2.0. Telephonic and Automated Meter Reading Requirements
 - 2.1. All applicable state, Local, and Federal laws regarding communication and radio frequency requirements shall be met within SCE territory while performing telephonic and AMR meter reading including, but not limited to ANSI, FCC, NEC, and CPUC requirements.
 - 2.2. Telephone lines must give customer first priority (i.e., meter must be programmed to hang up if customer initiates call). Dedicated lines are recommended.
 - 2.3. MDMA's shall provide the ability to monitor and communicate meter read information from the tampering and orphaned meter alarms.
 - 2.3.1. Tampering Alarm
Provide the ability to generate an alarm when tampering occurs on a meter. SCE will not detail the types of alarms to be used, but they must satisfy the SCE Energy Diversion Program requirements. Please provide functional descriptions of alarms in system. All tamper alarms must be filtered against any service orders and outages that could have triggered the alarm.
 - 2.3.2. Orphaned Meter Alarm
Provide the ability to identify meters that are being read and the server is unaware of their official existence.
- 3.0. Meter Read Data Control Documentation
 - 3.1. Provide documentation of the "Control Process Document" (or audit trail) documenting the method of obtaining meter read data via telephonic or AMR methods, and the control process for obtaining reads and internally transferring read data to usage calculation.



Southern California Edison

An EDISON INTERNATIONAL Company

STANDARDS OF CONDUCT

SCE and its subsidiary companies have earned the trust and confidence of those with whom they do business by conducting their affairs honestly and fairly. To maintain this trust and confidence, SCE has established Standards of Conduct. They apply to everyone who works for the Company and its subsidiaries.

STANDARDS:

1. Employees shall comply with all laws and regulations applicable to the Company's conduct of its business.
2. Employees shall not discriminate against anyone on the basis of race, religion, sex, age, sexual orientation, national origin, or disability.
3. Employees shall avoid putting themselves in a position in which their personal interest and those of the Company are in conflict, or which might interfere with the employee's ability to perform his or her job.
4. Employees shall not use for personal gain any information they obtain on the job which is not readily available to the general public, and they shall not disclose any such information which might damage the interests of the Company or its employees.
5. Employees shall not use company property or services for personal gain and shall not remove or dispose of Company materials, supplies or equipment without proper authority.
6. Employees shall not accept any form of gratuity which would tend to affect, or give the appearance of affecting, their judgment in the performance of their duties.
7. Employees shall not give or offer to give gratuities in any form to anyone for the purpose of influencing their judgment in the performance of their duties.
8. Employees shall take all actions with due regard for the health and safety of other employees and the public and protection of the environment.
9. Employees shall not authorize the use of Company funds or resources in the support of any political party or its candidates for elected office.
10. Employees shall not be under the influence of alcohol or possess, use, or be under the influence of illegal drugs while on the job or during work hours, including meal breaks.
11. Employees with responsibility to initiate or modify entries in the Company's accounting records shall perform such duties with management's approval and in conformance with the Company's accounting policies and procedures.
12. Employees shall not withhold information from or give false or misleading information to anyone conducting duly authorized investigations.

Subchapter 7. General Industry Safety Orders

INTRODUCTION

§ 3200. Purpose.

To fulfill the expressed social public policy of the State of California set forth in Article XX, Section 21 of the Constitution, to make full provision for securing safety in places of employment, these General Industry Safety Orders are promulgated for the guidance of employers and employees alike. Compliance with these orders may not in itself prevent occupational injuries or diseases, but will, it is believed, provide a safe environment which is a fundamental prerequisite in controlling injuries. Every employer should provide his supervisory staff with a copy of these orders and assure himself that each supervisor is familiar with those sections pertaining to the operations under his supervision.

Note: Authority cited for § 3200 to 4207, inclusive: Sections 6312 and 6500, Labor Code. Additional authority cited: Section 6502 and Section 142.3, Labor Code. Issuing agency: Division of Industrial Safety.

- History
1. New §§ 3200 to 4191, inclusive (except as otherwise noted) filed, and §§ 4201 to 4207, inclusive, refilled 12-19-49 (Register 18, No 8).
 2. Repealer of Subchapter 7 (Groups 1-9, §§ 3210 through 4207, not consecutive) and new Subchapter 7 (Groups 1-4, 6, 8, 10, 13-16, 18, §§ 3210 through 5370, not consecutive) filed 2-1-72 as an emergency; designated effective 2-1-72 (Register 72, No. 6). For prior history, see Register 55, No. 2., Register 57, No. 13, Register 60, No. 19, Register 61, No. 26, Register 62, Nos. 1 and 21, Register 66, Nos. 23 and 38, Register 67, Nos. 18 and 38, Register 68, No. 47, Register 69, No. 9, Register 70, Nos. 1 and 25, Register 71, No. 17, Register 72, No. 2.
 3. Certificate of Compliance filed 4-26-72 (Register 72, No. 19).
 4. Repealer of Subchapter 7 (Groups 1-9, 32 10 through 4207, not consecutive) and new Subchapter 7 (Groups 1-4, 6, 8, 10, 13-16, 18, §§3210 through 5370, not consecutive) refilled 6-1-72 as an emergency; designated effective 6-1-72. Certificate of Compliance included (Register 72, No. 23). For prior history, see Register 72, No. 20.
 5. Amendment and renumbering of subsections (a)(15) through (a)(42) filed 1-31-75 as an emergency; effective upon filing (Register 75, No. 5).
 6. These orders superseded the orders heretofore separately published in Title 8, Chapter 1, Subchapter 4 entitled Dust, Fumes, Vapors and Gases Safety Orders, Engine Safety Orders, Gantry – Truck Safety Orders, General Safety Orders, Laundry Safety Orders, Mechanical Power Transmission Safety Orders, Steam Shovel and Locomotive Crane Safety Orders, Safety Orders for Women in Industry and Woodworking Safety Orders.

§ 3201. Title.

These safety orders shall be known as General Industry Safety Orders.

§ 3202. Application.

(a) These orders establish minimum standards and apply to all employments and places of employment in California as defined by Labor Code Section 6303; provided, however, that when the Occupational Safety and Health Standards Board has adopted or adopts safety orders applying to certain industries, occupations or employments exclusively, in which like conditions and hazards exist, those orders shall take precedence wherever they are inconsistent with the General Industry Safety Orders hereinafter set forth.

Note: Unless otherwise designated in this subchapter, the phrase "division" refers to the current Division of Occupational Safety and Health or any of its predecessors including the former Division of Industrial Safety or the Division of Occupational Safety and Health Administration. Reference to the former Division of Industrial Safety or Division of Occupational Safety and Health Administration in these orders is meant to refer to their successor, the Division of Occupational Safety and Health, or any subsequent successor agency.

(b) After the date on which these Orders become effective, all installations shall conform to these Orders.

Exception: (1) Existing installations which are in compliance with safety orders, or variations there from, in effect prior to the effective date of these safety orders, unless the hazard presented by the installation or equipment is, in the judgment of the Chief of the Division, of such severity as to warrant control by the application of the applicable sections of these orders.

(2) Facsimiles, replicas, reproductions, or simulations when used for exhibition purposes when such compliance would be detrimental to their use for such purposes unless the hazard presented by the installation is, in the judgment of the Chief of the Division, of such severity as to warrant control by the application of the applicable sections of these Orders.

(c) Regulations herein affecting building standards, apply to any building, or building alteration, or building modification for which construction is commenced after the effective date of the regulations. Date of commencement of construction, for the purpose of this section, shall be:

(1) The advertising date for invitation of bids for State and local government projects.

(2) The building permit issuance date for other projects.

(Title 24, Part 2, Section 2-109.)

Note: Identification of Building Regulations. The basis building regulations for employments and places of employment contained in Title 24, State Buildings Standards Code, California Administrative Code are part of these safety orders. Pursuant to Health and Safety Code Section 18943©, such building regulations are identified in these safety orders by the addition of a reference to the appropriate section of the State Building Standards Code (Title 24), which is added to the end of the safety order section:

(Title 24, Part X, Section XXXX.)

(d) Nothing contained in these regulations shall be considered as abrogating the provisions relating to public safety of any ordinance, rule or regulation of any governmental agency, providing such local ordinance, rule or regulation is not less stringent than these minimum standards.

Note: The filing date 12-19-49 shown in the History Note of Section 3200 is for the sections originally filed. The filing date of sections subsequently adopted or revised is shown in the History Note at the end of the section. Orders become effective 30 days after filing.

(Title 24, Part T8-3202)

(d) Nothing contained in these regulations shall be considered as abrogating the provisions relating to public safety of any ordinance, rule or regulation of any governmental agency, providing such local ordinance, rule or regulation is not less stringent than these minimum standards.

Note: The filing date 12-19-49 shown in the History Note of Section 3200 is for the sections originally filed. The filing date of sections subsequently adopted or revised is shown in the History Note at the end of the section. Orders become effective 30 days after filing.

(Title 24, T8-3202)

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor code; and Section 18943©, Health and Safety Code.

History

1. Repealer and new section filed 10-25-74; effective thirtieth day thereafter (Register 74, No. 43).
2. Repealer and new section filed 1-31-75 as an emergency; effective upon filing (Register 75, No. 5).
3. Certificate of Compliance filed 3-4-75 (Register 75, No. 10).
4. Amendment filed 7-16-76; effective thirtieth day thereafter (Register 76, No. 29).
5. Amendment of subsection (a) filed 7-6-79 as procedural and organizational; effective upon filing (Register 79, No. 27).
6. Amendment of subsection (c) and NOTE filed 5-25-83; effective thirtieth day thereafter (Register 83, No. 22). Approved by State Building Standards Commission 1-24-83.

§ 3203.

Injury and Illness Prevention Program.

(a) Effective July 1, 1991, every employer shall establish, implement and maintain an effective Injury and Illness Prevention Program (Program). The Program shall be in writing and, shall at a minimum:

(1) Identify the person or persons with authority and responsibility for implementing the Program.

(2) Include a system for ensuring that employees comply with safe and healthy work practices. Substantial compliance with this provision includes recognition of employees who follow safe and healthful work practices, training and retraining programs, disciplinary actions, or any other such means that ensure employee compliance with safe and healthful work practices.

(3) Includes a system for communicating with employees in a form readily understandable by all affected employees on matters relating to occupational safety and health, including provisions designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. Substantial compliance with this provision includes meetings, training programs, posting, written communications, a system of anonymous notification by employees about hazards, labor/management safety and health committees, or any other means that ensure communication with employees.

Exception: Employers having fewer than 10 employees shall be permitted to communicate to and instruct employees orally in general safe work practices with specific instructions with respect to hazards unique to the employees' job assignments as compliance with subsection (a)(3).

(4) Include procedures for identifying and evaluating work place hazards including scheduled periodic inspections to identify unsafe conditions and work practices. Inspections shall be made to identify and evaluate hazards.

(A) When the Program is first established:

Exception: Those employers having in place on July 1, 1991, a written Injury and Illness Prevention Program complying with previously existing section 3203.

(B) Whenever new substances, processes, procedures, or equipment are introduced to the workplace that represent a new occupational safety and health hazard; and

(C) Whenever the employer is made aware of a new or previously unrecognized hazard.

(5) Include a procedure to investigate occupational injury or occupational illness.

(6) Include methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazard:

(A) When observed or discovered; and,

(B) When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, remove all exposed personnel from the area except those necessary to correct the existing condition. Employees necessary to correct the hazardous condition shall be provided the necessary safeguards.

(7) Provide training and instruction:

(A) When the program is first established:

Exception: Employers having in place on July 1, 1991, a written Injury and Illness Prevention Program complying with the previously existing Accident Prevention Program in Section 3203.

(B) To all new employees;

(C) To all employees given new job assignments for which training has not previously been received;

(D) Whenever new substance, processes, procedures or equipment are introduced to the workplace and represent a new hazard.

(E) Whenever the employer is made aware of a new or previously unrecognized hazard; and,

(F) For supervisors to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed.

(b) Records of the steps taken to implement and maintain the Program shall include:

(1) Records of scheduled and periodic inspections required by subsection (a)(4) to identify unsafe conditions and work practices, including person(s) conducting the inspection, the unsafe conditions and work practices that have been identified and action taken to correct the identified unsafe conditions and work practices. These records shall be maintained for a least one (1) year; and

Exception: Employers with fewer than 10 employees may elect to maintain the inspection records only until the hazard is corrected.

(2) Documentation of safety and health training required by subsection (a)(7) for each employee, including employee name or other identifier, training dates, type(s) of training, and training providers. This documentation shall be maintained for at least one (1) year.

Exception No. 1: Employers with fewer than 10 employees can substantially comply with the documentation provision by maintaining a log of instructions provided to the employee with respect to the hazards unique to the employees' job assignment when first hired or assigned new duties.

Exception No. 2: Training records of employees who have worked for less than one (1) year for the employer need not be retained beyond the term of employment if they are provided to the employee upon termination of employment.

Exception No. 3: For Employers with fewer than 20 employees who are in industries that are not on a designated list of high-hazard industries established by the Department of Industrial Relations (Department) and who have a Worker's Compensation Experience Modification Rate of 1.1 or less, and for any employers with fewer than 20 employees who are in industries on a designated list of low-hazard industries established by the Department, written documentation of the Program may be limited to the following requirements:

A. Written documentation of the identity of the person or persons with authority and responsibility for implementing the program as required by subsection (a)(1).

B. Written documentation of scheduled periodic inspections to identify unsafe conditions and work practices as required by subsection (a)(4).

C. Written documentation of training and instruction as required by subsection (a)(7).

Exception No. 4: Local governmental entities (any county, city, city and county, or district, or any public or quasi-public corporation or public agency therein, including any public entity, other than a state agency, that is a member of, or created by, a joint powers agreement) are not required to keep record, concerning the steps taken to implement and maintain the Program.

Note 1: Employers determined by the Division to have historically utilized seasonal or intermittent employees shall be deemed in compliance with respect to the requirements for a written Program if the employer adopts the Model Program prepared by the Division and complies with the requirements set forth therein.

Note 2: Employers in the construction industry who are required to be licensed under Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code may use records relating to employee training provided to the employer in connection with an occupational safety and health training program approved by the Division, and shall only be required to keep records of those steps taken to implement and maintain the program with respect to hazards specific to the employee's job duties.

(c) Employers who elect to use a labor/management safety and health committee to comply with the communication requirements of subsection (a)(3) of this section shall be presumed to be in substantial compliance with subsection (a)(3) if the committee:

(1) Meets regularly, but not less than quarterly;

(2) Prepares and makes available to the affected employees, written records of the safety and health issues discussed at the committee meetings and, maintained for review by the Division upon request. The committee meeting records shall be maintained for at least one (1) year;

(3) Reviews results of the periodic, scheduled work site inspections;

(4) Reviews investigations of occupational accidents and causes of incidents resulting in occupational injury, occupational illness, or exposure to hazardous substances and, where appropriate, submits suggestions to management for the prevention of future incidents;

(5) Reviews investigations of alleged hazardous conditions brought to the attention of any committee member. When determined necessary by the committee, the committee may conduct its own inspection and investigation to assist in remedial solutions;

(6) Submits recommendations to assist in the evaluation of employee safety suggestions; and

(7) Upon request from the Division, verifies abatement action taken by the employer to abate citations issued by the Division.

Note: Authority cited: Sections 142.3 and 6401.7, Labor Code. Reference: Sections 142.3 and 6401.7, Labor Code.

History

1. New section filed 4-1-77; effective thirtieth day thereafter (Register 77, No. 14).

For former history, see Register 74, No. 43.

2. Editorial correction of subsection (a)(1) (Register 77, No. 41).

3. Amendment of subsection (a)(2) filed 4-12-83; effective thirtieth day thereafter (Register 83, No. 16).

4. Amendment filed 1-16-91; operative 2-15-91 (Register 91, No. 8).

5. Editorial correction of subsections (a), (a)(2), (a)(4)(A) and (a)(7) (Register 91, No. 31).

6. Change without regulatory effect amending subsection (a)(7)(F) filed 10-2-92; operative 11-2-92 (Register 92, No. 40).

7. Amendment of subsection (b)(2), Exception No. 1, new Exception No. 3 through Exception No. 4, Note 2, and amendment of subsection (c)(2) filed 9-13-94; operative 9-13-94 pursuant to Government Code section 11346.2 (Register 94, No. 37).

8. Editorial correction of subsections (a)(6)(A) and (a)(7)(A) (Register 93, No. 22).

9. Amendment of subsections (b)(1)-(2) and (c)(2) filed 6-1-95; operative 7-3-95 (Register 95, No. 22).

§ 3204. Access to Employee Exposure and Medical Records

(a) Purpose. The purpose of this section is to provide employees and their designated representatives and authorized representatives of the Chief of the Division of Occupational Safety and Health (DOSH) a right of access to relevant exposure and medical records. Access by employees, their representatives, and representatives of DOSH is necessary to yield both direct and indirect improvements in the detection, treatment, and prevention of occupational disease. Each employer is responsible for assuring compliance with this section, but the activities involved in complying with the access to medical records provisions can be carried out, on behalf of the employer, by the physician or other health care personnel in charge of employee medical records. Except as expressly provided, nothing in this section is intended to affect existing legal and ethical obligations.



MDMA SERVER ACCEPTANCE TESTING

SCE ACCESS TO EXTERNAL MDMA SERVERS

VERSION 4.0

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TABLE OF CONTENTS

1.0	BACKGROUND	36
2.0	SCOPE.....	37
	<i>Intent</i>	<i>37</i>
	<i>Applicability</i>	<i>37</i>
3.0	CRITICAL ASSUMPTIONS/RISK ASSESMENT.....	37
4.0	CRITERIA.....	38
	SYSTEM INTERFACE.....	38
	DATA	38
	<i>Delivery</i>	<i>38</i>
	<i>Retention Time.....</i>	<i>38</i>
	<i>Data Differentiation.....</i>	<i>38</i>
	<i>Meter Reading Dates</i>	<i>38</i>
	<i>Format</i>	<i>39</i>
	<i>Timeliness</i>	<i>39</i>
	<i>Integrity</i>	<i>39</i>
	SYSTEM REQUIREMENT.....	39
	<i>Clock</i>	<i>39</i>
	<i>Bandwidth</i>	<i>39</i>
	<i>System Availability.....</i>	<i>40</i>
	<i>Precautionary Efforts</i>	<i>40</i>
	<i>System Outage Notification.....</i>	<i>40</i>
	<i>Disaster Recovery.....</i>	<i>40</i>
	<i>System Access.....</i>	<i>40</i>
	<i>Security/Protocol</i>	<i>41</i>
	HELP DESK/SUPPORT.....	42
	PERFORMANCE MEASUREMENT.....	42
5.0	MDMA ACCEPTANCE TEST PROCEDURE.....	43
6.0	APPLICABLE STANDARDS.....	45
7.0	DOCUMENTATION	45
8.0	GLOSSARY.....	46



MDMA SERVER ACCEPTANCE TESTING

1.0 BACKGROUND

To correctly calculate transmission, distribution, and competitive transition charges for Direct Access customers, SCE will need to retrieve meter usage data for interval meters as well as meter reads and meter usage data for non-interval meters from external Meter Data Management Agents. The acceptance test defined in this document is intended to demonstrate to SCE that the external MDMA is able to calculate usage from meter reads; validate, estimate and edit that usage; post the usage in the approved EDI transaction set 867 – Product Transfer and Resale Report.

All MDMA's will be responsible for constructing and operating their MDMA server system to allow timely and secure transfer of applicable meter read and usage data between themselves and SCE. All potential MDMA's must meet the acceptance testing requirements detailed in this document, as well as the additional compliance testing requirements pertaining to the education and training of MDMA personnel.

For successful completion of MDMA server acceptance testing, the applicant will meet the following 5 requirements and ensure that SCE can:

1. Access the potential MDMA's server;
2. Access SCE's meter read and usage data;
3. Download SCE's meter read and usage data;
4. Interpret SCE's meter read and usage data and verify proper validation, editing and estimation;
and
5. Ensure that downloaded data is SCE's only.



2.0 SCOPE

Intent

This document identifies the duties and responsibilities of all ESPs and other entities who wish to construct and operate their own MDMA servers. Compliance with the MDMA interim standards defined in the December 3, 1997 CPUC Decision on the Meter and Data Communication Standards Workshop Report is a condition of participation in the new market.

Applicability

This document details requirements for SCE's acceptance of an external MDA server. Each potential MDMA will have to pass this acceptance test as part of the compliance requirement contained in the December 3, 1997 CPUC decision.

Until such time as either standards are established, or SCE, PG&E, and SDG&E reach consensus on the acceptance testing process, Southern California Edison will test each of the ESPs/MDMAs on the type of data (interval or non-interval) based on the services they are applying for in the service territory. During the scheduling of acceptance testing, applicants will be asked about the type of data they will be tested on. Applicants may choose interval or non-interval data (or both). Should the scope of the applicants' services change at some point in the future, they may be required to be re-tested for qualification purposes. It will be the responsibility of the applicant to inform Southern California Edison of any scope changes in services offered.

3.0 CRITICAL ASSUMPTIONS/RISK ASSESSMENT

- The Internet will be a reliable transport medium with respect to volume and security for the near future.
- IDR usage data will be captured in 15-minute intervals.
- Non-IDR reads and usage data will be required for billing purposes.
- There is no standard MDMA software.
- MDMAs have completed appropriate paperwork to conduct business in SCE's service territory.
- MDMA servers will store both interval meter usage data and non-interval meter reads and usage data.
- SCE will screen the qualifications of potential MDMAs by comparison with SCE's standards.¹
- All criteria listed for SCE's MDMA server will apply to ESPs (or contracting parties) acting as MDMAs.

¹ Opinion Regarding the MDCS Workshop Report, Administrative Law Judge Ruling, R.94-04-031, I. 94-04-032, December 3, 1997, Note 29, p. 54.

4.0 CRITERIA

System Interface:

All MDMAs will construct an Internet-addressable server to act as the interface with SCE.

Prior to scheduling an acceptance test (see Section 5.0) each MDMA applicant will provide SCE with the following:

- ESP / MDMA name
- CSS customer number
- URL (DNS name registered with InterNIC)
- Help desk phone number
- Contact names
- Electronic mail address
- Business address and telephone number
- Dun & Bradstreet (D&B) company number

Data:

1. Delivery
 - a) The MDMA must provide current and requested archive data in a timely manner. For current data, the MDMA will upload to SCE's MFT server daily for SCE to retrieve instead of store them on MDMA's server.²
 - b) The MDMA must have a contingency plan in place to deliver data if the Internet should fail.
2. Retention Time

The MDMA must post all current meter data to the MFT. Data must then be archived for at least 3 years.³
3. Data Differentiation

The MDMA will post required information in SCE's mailbox. SCE will not be able to retrieve another party's meter data nor will another ESP / MDMA be able to access SCE's mailbox.
4. Meter Reading Dates

The MDMA shall read interval meters on the utility's scheduled meter reading data.⁴

² Opinion Regarding Direct Access Implementation Plans and related Tariffs, Decision 97-10-087, Appendix A, Section M (3)(a).

³ Ibid., Section H (7)(d).

⁴ Ibid., Section I (6).

5. Format

The MDMA will provide usage data for interval meters, and reads and usage data for non-interval meters in the EDI 867 Product Transfer and Resale Report Transaction set Protocol.

6. Timeliness

The MDMA will be compliant with data timeliness standards. Information will be provided as follows:⁵

Interval Data:

- 80% of all usage data available on 1st day after schedule read data;
- 90% of all usage data available on 2nd day after schedule read date;
- 99.99% of all usage data available on 5th day after schedule read date.

Non-Interval Data:

- 85% of all monthly meter readings available by 6:00 a.m. on the 1st working day after the scheduled meter read date;
- 95% of all monthly meter readings available by 6:00 a.m. on the 2nd working day after the scheduled meter read date;
- 99.99% of all monthly meter readings available by 6:00 a.m. on the 5th working day after the scheduled meter reading data.

Data timeliness will allow SCE to conduct its business efficiently. If the MDMA is not able to fulfill this requirement, it will notify SCE as soon as possible and inform them when and how to expect the data.

7. Integrity

The usage data on the MDMA server will be calculated, validated, estimated and edited (9BEE) prior to posting to the SCE's mailbox. The information on the MDMA server will be account information, meter reads and usage data that are in a settlement ready format. The MDMA will be in compliance with the standards for VEE contained in the December 3, 1997 CPUC Decision on the meter and Data Communications Standards Workshop Report.

If incomplete or invalid usage data and / or account information is detected, SCE will notify the MDMA's help desk. The MDMA must have procedures and processes to correct usage data and account information.

Systems Requirements

1. Clock

The clock on the MDMA server will be synchronized within 60 seconds of Greenwich Mean Time (GMT).

2. Bandwidth

At this point, no specific bandwidth requirement has been identified. Unanticipated volume of traffic may necessitate a change in this requirement.

⁵ Opinion Regarding the MDCS Workshop Report, Administrative Law Judge Ruling, R.94-04-031, I.94-04-032, December 3, 1997, pp. 31-32.

3. System Availability
The MDMA server will operate on a 24-hour / 365-day basis except for scheduled outages.
4. Precautionary Efforts
The MDMA must have system backups stored off-site in a secured facility.

The MDMA may have additional scheduled downtime that totals less than 8 hours per month and may only occur between the hours of 2 a.m. and 5 a.m.
5. System Outage Notification
The MDMA will notify SCE in advance of scheduled outages and within 30 minutes of any unscheduled maintenance. Any outage that occurs outside of the window between 10:00 p.m. and 8:00 a.m. is considered unscheduled maintenance.
6. Disaster Recovery (See Section 9, MDMA Disaster Recovery Plan)
Major Disasters: The MDMA must have a disaster recovery plan that will allow it to recover from a major disaster within twenty-four (24) hours. The recovery plan may include having access to a backup MDMA server located at a geographically separated site (at least 50 miles) and means to publish data on the back-up server. A major disaster may be a building fire or telecommunications interruption. This 24-hour requirement would not apply in the event of a large-scale disaster that destroys both primary and back-up MDMA server sites.

Minor Disasters: The MDMA must have adequate system redundancy and an acceptable recovery plan that will allow it to recovery from a minor disaster with outage that lasts no more than two (2) hours. A minor disaster consists of a hardware failure.

Worst-Case Scenario: The MDMA's disaster recovery plan will include a worst-case provision to ensure that no data is lost (even if another set of physical meter reads must be taken).
8. System Access
Procedure (Assume Inbound MDMA)
SCE will provide mailbox access to the MFT server for the MDMA.

Mailbox Access Control
SCE MFT Support will regulate mailbox access; MDMA's and ESPs will only be able to access their designated mailboxes.

Frequency Control
SCE will access each MDMA's mailbox on the MFP server five (5) times each day (6:30, 10:30, 13:30, 15:30, 17:30) and will download all data.

9. Security / Protocol

Data Transfer Protocols

As the Internet has been chosen as the transfer medium, the following protocols have been selected to be the lower-level software that provides for data byte streams and data packet delivery services, security and data file transfer services.

- TCP/IP for data stream provision and addressing.
- SSL (Secure Sockets Layer) for data encryption.
- HTTP (Hypertext Transfer Protocol) for data transfer.

Password

As detailed in the MDCS workshop document, data transfer passwords must be changed every twelve (12) months. However, SCE will not be assigning expiration dates during implementation; SCE has this capability under consideration and will notify MDMA's when functionality is available.

Confidentiality

The MDMA will have confidentiality agreements in place with all its employees and agents as well as the organization as a whole.

Customer-specific information is confidential and should not be released to third parties without customer authorization. Customer-specific information includes name, service address, billing address, phone number, credit information, electric usage and billing amounts, and meter information. Per D.97-10-031 customer approval can be "a consent form a letter from the customer on the customer's letterhead, which is signed by the customer, and which contains account information to ensure the UDC that the customer signing the form is indeed the same customer whose information is to be released." The Commission also permits Edison to "include in the released information a statement that the information contains confidential customer information and that the information is not to be released to anyone else without the customer's explicit consent."⁶

Since information placed on the MDMA server will contain confidential information, the MDMA must have procedures and security measures to ensure that only the ESP of the customer and SCE can access the data on the server. In addition, the MDMA will follow the same procedures to release customer information as described in D.97-10-031 and also comply with CPUC 394.4(a).⁷

⁶ D.97-10-31, page 15.

⁷ PUC 394.4(a) states: (a) Confidentiality: Customer information shall be confidential unless the customer consents in writing. This shall encompass confidentiality of customer specific billing, credit, or usage information. This requirement shall not extend to disclosure of generic information regarding the usage, load shape, or other general characteristics of a group or rate classification, unless the release of that information would reveal customer specific information because of the size of the group, rate classification, or nature of the information.

Help Desk/Support

The MDMA will provide 24 hours a day / 365 days a year access to technical and business assistance. Staff will be available to address questions and concerns on data availability, data corruption and adjustments, and systems technical support. The MDMA must provide SCE with the Help Desk contact information including help desk phone number, email address, contact names and pager numbers. This information must be provided to SCE during the acceptance testing scheduling process.

Performance Measurement

Meter Data Management will be performed in accordance with CPUC regulations and relevant decisions. Additionally, MDMA's must comply with the pertinent Meter Data Management requirements identified in this document.

5.0 MDMA ACCEPTANCE TEST PROCEDURE

Process

1. As part of the required documentation described on the checklist, the MDMA applicant will provide SCE with the system specifications for the MDMA server. This documentation should indicate compliance with the following:
 - Clock on the MDMA server is synchronized within 60 seconds of Greenwich Mean Time (GMT).
 - Access codes are adequately managed.
 - Network Architecture is secure.
 - Data can be accessed in a secure manner.
 - Data can be transferred in a secure manner.
 - Data can be stored in SCE's mailbox on MFT server.
 - Data can be archived for at least three (3) years at a backup storage facility.
 - Archived data can be retrieved from the backup storage media.
 - There is an adequate audit trail.
 - File format is in compliance with SCE's specification.
 - Data format is in compliance with SCE's specification.
 - File naming is in compliance with SCE's specification.
 - There are system outage notification procedures.
 - There is a disaster recovery plan.
 - There is a contingency plan to deliver the data.
2. After SCE's receipt of the required documentation, the MDMA applicant will contact the Meter Operations Support Desk (MOSD) at **1-800-203-4634** to schedule acceptance testing. This can be done at any time after SCE has received the documentation and can be concurrent with SCE's evaluation of hiring / training requirements).
3. SCE's MOSD will provide the MDMA applicant with the date and time when acceptance testing will be conducted.

During scheduling of acceptance testing, the MDMA applicant will identify the type of data to be used during the test (i.e., interval, non-interval, or both). It is understood the MDMA applicant will be tested using the same type of data in the scope of the MDMA services they wish to perform. Should the scope of the data management expand, additional testing will be required.

4. MOSD will contact applicant at pre-arranged time to begin acceptance testing.

5. MOSD will e-mail test data to MDMA applicant at prearranged date and time. (Alternative method of data delivery will be via Federal Express of diskettes. MOSD will utilize Federal Express to determine time of delivery.)
6. MOSD will then contact applicant via phone to confirm e-mail was received at pre-arranged time to begin acceptance testing.
 - EDI formatted data will contain meter ID code, meter characteristics and input provided by the meter read. All read detail (e.g., record interval) will be consistent with the corresponding meter characteristics.

Interval Data

- ◇ The volume of the test data will be two (2) months of usage data for ten (10) customers (i.e., total of twenty (20) months of data).
- ◇ The format of the test data will be in comma-delimited format.
- ◇ The test data will contain a wide range of usage scenarios including, but not limited to: sum checks, spike checks, KWH, multiple channels, Hi/Low issues, plugging data for less than two (2) hours, plugging data for greater than two (2) hours, meter multipliers, and pulse multipliers.

Non-Interval Data

- ◇ Usage information on 10 service accounts
- ◇ 2 months of data for each service account (total of 20 months)
- ◇ Meter IDs

- **Template file**

This file will contain a template of the summary report to be posted to the MDM server by the MDMA.

7. Upon receipt of EDI formatted data, the MDMA applicant will demonstrate the following capabilities.
 - **Calculate Usage**
 - **Validation, Editing, Estimation (VEE) and Data Exchange**
8. Within **48** hours of receiving the EDI formatted data, the MDMA Applicant will post data to MDMA server and e-mail a summary report to MOSD.
9. MDMA applicant will e-mail the Meter Operations Support Desk (metering@sce.com) with notification of data availability and with summary document identifying the failure points.
10. SCE will verify that it can retrieve and read information from MDMA applicant's MDMA server.
11. The Meter Operations Support Desk will notify the MDMA applicant, via electronic mail, of the acceptance test results (pass or fail).
(SCE will compare the output report to its predefined data by service account. Passing requires 100% correspondence.)



6.0 Applicable Standards

1. The ANSI ASC X 12 EDI 867 – Product Transfer and Resale Report Transaction Set, TCP/IP, SSL, and HTTPS will be used as the data transfer protocol standards.

7.0 Documentation

1. Opinion Regarding the Meter and Data Communications Standards Workshop Report, Ruling of Administrative Law Judge John Wong, R.94-04-031, I.94-04-032, December 3, 1997.
2. Opinion Regarding Direct Access Implementation Plans and Related Tariffs, D.97-10-087.



8.0 GLOSSARY

CMEP (California Metering Exchange Protocol) – An interim meter data format standard developed by PG&E.

CPUC – California Public Utilities Commission

EDI – (Electronic Data Interchange) – computer-to-computer exchange of structured information by agreed message standards which are overseen by the American National Standards Institute.

ESP (Electric Service Provider) – An entity that provides energy supply and other related services (including MDMA).

HTTP (Hypertext Transfer Protocol) – The TCP / IP-based communications protocol that defines how clients and servers communicate over the Internet.

IDR (Interval Data Recorder) – An electric meter that reads electric consumption in discrete time units.

MDCS (Meter and Data Communications Standard) – Interim standard on metering and meter data developed by UDCs, ESPs and other market participants.

MDMA (Meter Data Management Agent) – The entity responsible for acquisition of meter data from meter data collection devices; validation, estimation and editing of data; transformation of the raw data into usage; and providing access to data. SCE is the MDMA for meters that are being read for other parties. External MDMAs provide SCE with usage for meters we are not reading.

MOSD – Metering Operations Support Desk

SSL (Secure Sockets Layer) – A data encryption protocol used to provide a secure connection between two entities communicating over the Internet.

TCP/IP (Transmission control protocol / Internet protocol) – The basic suite of protocols on which the Internet operates.

UDC (Utility Distribution Company) – CPUC-regulated entity that provides traditional distribution and customer services.

**ESP / MDMA Acceptance Testing
Summary of Non-Interval Data Test Results**

Date: / / Time:			
ESP Name:			
MDMA Name:			
CPUC ESP Number:		URL:*	Password:
MDMA's Support Desk Phone*		IP Address:*	E-mail:
Contact Person	Phone:	Alternate Phone	E-mail:
Contact Person	Phone:	Alternate Phone	E-mail:
Company's Street Address:			
City:		State:	Zip Code:
Mailing Address:			
City:		State:	Zip Code:
Description of MDMA Systems and Applications:			

Data Failed the following test:

	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			
	Service Account Number:	Total Engineering Units:	Hi/Low Usage
Hi/Low Demand			

**ESP / MDMA Acceptance Testing
Summary of Interval Data Test Results**

Date: / / Time:			
ESP Name:			
MDMA Name:			
CPUC ESP Number:	URL:*	Password:	
MDMA's Support Desk Phone*	IP Address:*	E-mail:	
Contact Person	Phone:	Alternate Phone	E-mail:
Contact Person	Phone:	Alternate Phone	E-mail:
Company's Street Address:			
City:	State:	Zip Code:	
Mailing Address:			
City:	State:	Zip Code:	
Description of MDMA Systems and Applications:			

Data Failed the following test:

Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				
Service Account Number:	SUM	Spike	Hi/Low	Missing Intervals
None				

**MDMA Disaster Recovery Plan
Template**

Disaster Recovery

An MDMA Disaster Recovery plan should include the following items to be considered complete. Use the checklist below to insure that you have the required documents and that the required information is included. Check off each item and submit a copy of each document with this application.

Required Documents:

These documents must be included with your application:

√	Document Description
	<p><u>Implementation Plan and Procedures for Disaster Recovery</u> Attach detailed procedures for each level of disaster. Document must include:</p> <ul style="list-style-type: none"> Level One Recovery – Emergency Level Low <ul style="list-style-type: none"> Temporary Power Failure (Less than 2 hours) Server Shutdown Minor Network Problems Level Two Recovery – Emergency Level Medium <ul style="list-style-type: none"> Extended Power Outage (more than two hours) Major Equipment Failure Software Failure due to virus or system bug Major Network Failure or LAN/WAN failure Level Three Recovery – Emergency Level High <ul style="list-style-type: none"> Regional Disasters Fire Earthquake Major Storms Anything impacting MDMA’s ability to access the primary site
	<p><u>Background or overview of Data Retrieval Organization</u> Description of work groups and organizations</p>
	<p><u>Business groups Dependent on the MDMA:</u> Overview of other organizations and companies who depend on the MDMA data</p>
	<p><u>Disaster Impact:</u> A list of systems that will be impacted internally or externally by disaster or outage (e.g., Billing Agent, Meter Data MSP, and UDC).</p>
	<p><u>Description of Hot Site and or Redundant Systems:</u> Security, Power requirements, Remote access, Backup policies, System replicating, Mirroring, etc.</p>

Required Information

This information must appear somewhere in the documents listed above.

√	Required Information
	<u>Location</u> Address of MDMA and or systems supporting MDMA functions, address of satellite offices, if applicable.
	<u>Staffing</u> Indicate current staffing levels required and include job titles.
	<u>Vendor Contact</u> Addresses and phone numbers for vendor support.
	<u>Contact Lists</u> Personnel to contact in the event of a disaster.
	<u>Systems</u> Configurations needed for systems recovery.
	<u>Hardware</u> A list of equipment spares and system configurations needed for systems recovery.
	<u>Software</u> A comprehensive list of software used for systems recovery.
	<u>Description of Internal and External Communication Links</u> Telecommunication links, pots lines, WAN/LAN, etc.
	<u>Hot Site or Redundant Systems location</u> Addresses and phone numbers with details of how to get there.
	<u>Worst-Case Provisions</u> Information showing that no data will be lost.
	<u>Recommended (not required for MDMA acceptance)</u> Arrangements for another, previously approved MDMA to temporarily or permanently take over processing responsibilities in the case where the original MDMA cannot perform those functions.

System Availability and Security

The MDMA must be capable of storing and transferring data at a certain standard of performance, as well as maintaining an adequate security system. Use the checklist below to insure that you can document your system's ability to maintain minimum standards of availability and security.

√	Criteria
	Be able to provide the most recent twelve months (or the maximum amount processed) of historical consumption data within five days after the data has been required by a succeeding ESP.
	Hardware and software platforms must show proof of scalability in accordance with the throughput and connectivity performance requirements in Appendix D of the July 25, 1997 MDCS Report, without regard to restrictions that may result from the equipment used to receive the data.
	Must have Secure-Socket Layer (SSL) or other security mechanism agreed upon by the parties for all situations where data is transmitted from the MDMA server to other parties over a common carrier.
	MDMA data on the server awaiting transport to the MDMA user must be protected from unauthorized access by a firewall, encryption or some other reasonable security measure(s).
	MDMA must have physical access restrictions to the data processing center in place and functional.

California Metering Exchange Protocol

Version 1.10 – Second Release – Includes updated Loss Factor information

September 18, 1997

Purpose

The California Metering Exchange Protocol is intended for use in transmitting gas and electric utility metering, billing, and administrative information between companies. Communications between customers and Utility Distribution Company (UDC), Electric Service Providers (ESP), Metering Agents (MA) and Billing Agents (BA) must be supported. This protocol has been developed to support the business activities needed to allow utility customers to choose among multiple Service Providers (SP) which may be commercially independent from their Utility Distribution Company (UDC). This direct access process was mandated to be in operation on January 1, 1998. No alternative protocol was available for implementation and inter-company testing in 1997.

Specific Business Objectives

- 1. Meet the January 1, 1998 implementation deadline.** It should be acknowledged that several parallel processes are in place and progressing to meet the same business needs as this protocol. Among them are the utility industry Utilities Communications Architecture group, the group developing the ANSI standard Document Communications Infrastructure (DCI) document types, and the California utility companies and SP coordination committee. None of these alternatives will be ready in the required time frame.
- 2. Provide a simple to implement, workable, and reliable protocol to support business communications between metering agencies, SPs, and billing agencies.** This protocol must be easy to implement and use. It will be used on multiple machine types and it will be implemented in multiple programming languages. It must solve immediate business needs without adding complexity. It must contain features that provide assurance that communications errors can easily be detected.
- 3. Provide an inexpensive to implement protocol that may comfortably be abandoned.** Utility restructuring is occurring at a pace that is much beyond the capabilities of standards bodies to respond. This protocol is intended for interim use while standards bodies are producing an appropriate replacement.

Note: Documents Change History appears at end of document.

Implementation Overview

This protocol is a compromise between reality and what might be ideal. The set of features that make up a good communications protocol has continuously evolved. Protocols designed today are free flowing, flexible, and extensible. Modern programming tools tend to support this new style of communications protocols. A well-known example of this new style protocol is the Hypertext Transfer Protocol (HTTP) commonly used in Internet communications.

Though the California Metering Exchange Protocol is new, it is constrained by a necessity to be supportable with computer systems and programming languages that are far from modern. However, simply finding a “lowest common denominator” set of communications features is problematic. Older systems tend to rely on rigidly structured, fixed field length, fixed record length protocols. This rigidity tends to limit the adaptability of a protocol. Fixed length fields and records often embody significant wasted transmission bandwidth since individual fields must be sized to contain the largest possible entry for them.

The compromise chose for the California Metering Exchange Protocol is to use fixed record formats with variable length fields. This approach provides relative ease in mapping communications data formats to traditional fixed format records while allowing some of the communications bandwidth savings of the modern protocol style. It does not provide all of the flexibility and adaptability inherent in the modern style.

The California Metering Exchange Protocol data content consists of multiple lines of ASCII text, each terminated with ASCII Carriage Return and Line Feed characters. Only a very small number of different line types are used. Each line begins with type name and type version fields to allow correct interpretation of its contents. Individual fields on a line are separated with the ASCII Comma character. Fields are packed tightly, with leading and trailing blank space removed. Empty fields are carried as simply a single comma.

The text lines that make up the California Metering Exchange Protocol are designed to support both block mode and continuous stream data transmission methods. Block mode transmission normally consists of placing multiple text lines in a file or communications buffer, and transmitting that file or buffer as a single unit. Continuous stream data transmission simply transmits text lines, one after the other, with no identifiable beginning or end to the sequence. Supporting both modes in the same protocol is only slightly more difficult than providing a robust version of either.

Specific Protocol Features

There is a simple set of features or rules embodied in the California Metering Exchange Protocol:

1. Data content is a sequence of ASCII text lines terminated with ASCII Carriage Return and Line Feed characters.
2. Each line is a complete record.
3. No line shall exceed a total length of 2048 characters including end of line Carriage Return and Line Feed. This limit is imposed to simplify and clarify implementation issues.
4. Each record stands alone as an atomic entity. This is a context free protocol.
5. Each record consists of a series of variable length fields; each delimited with the ASCII Comma character.
6. Field text that contains the ASCII comma character is enclosed between ASCII Quotation marks at the field boundaries.
7. No single field shall exceed a total length of 256 characters including any delimiting characters. This limit is imposed to simplify and clarify implementation issues.
8. Field contents are packed. Leading and trailing white space is removed when records are sent and ignored when received. If leading or trailing white space itself is significant, the field must be enclosed between ASCII Quotation marks at the field boundaries.
9. Empty or unused fields are indicated with a single ASCII Comma character.
10. Each record begins with a consistent set of fields, called a header, to facilitate identification and interpretation.
11. Each record ends with an optional CRC field which lies between the last supplied comma in the record and the terminating Carriage Return and Line Feed characters. The CRC type is CRC-16. When supplied, this field is encoded as a hexadecimal integer totaling 5 characters in length, including the leading ASCII 'H' character. When not supplied, the CRC field is left empty.
12. Records may be truncated at any field after the header. Those fields not supplied are assumed to be empty. When records are truncated, the CRC field is still assumed to lie between the last actually supplied comma and the terminating Carriage Return, Line Feed characters.
13. Field text may contain one of the following data types: Numeric Integer, Numeric Floating-Point, a calendar Date, Time, a Date/Time, a Time Interval, Arbitrary Text, or a predefined Protocol Text entry.
14. Numeric values are encoded as ASCII text. Two kinds of numeric values are provided: Integer and Floating-Point. Integer values are encoded in decimal with optional leading Plus (+) or Minus (-) signs or in hexadecimal. Hexadecimal values are indicated by a leading ASCII character 'H'. Floating-Point values may be encoded as simple integers, with trailing decimal point and one or more decimal digits, or scientific notation of the form. For example: [+][-]9.9E[+][-]9 where "[+][-]" means an optional plus or minus sign, "9" means one or more decimal digits, and "E" means one of the following characters 'E', 'e', 'D', or 'd'. Floating-Point values, however, must be limited to a specific range. Though they may be encoded in scientific notation, floating point numbers will be converted to "+-9999999999.99999" form by PG&E for internal use. Numeric fields may not exceed 16 characters in length. Empty numeric fields are interpreted as the value zero.

15. Time and Date values are encoded as ASCII text. Date only fields are encoded as “CCYYMMDD”. Time fields are encoded as “HHMM”. Date/Time fields are encoded as “CCYYMMDDHHMM”. Empty Date and Date/Time fields are undefined except where explicitly handled.
16. Time Interval values are encoded as ASCII text. They are encoded “MMDDHHMM”. Empty Time Interval fields are interpreted as zero intervals. Interval values of less than an hour must repeat on the hour. Interval values of less than a day must repeat at midnight.
17. Arbitrary Text fields contain free-form text such as customer name and address information. Empty text fields are interpreted as blank.
18. Protocol Text fields contain values that are predefined and have a limited set of possible values. They are used as data type indicators and as qualifiers or feature flags. Predefined text values are chosen so as to make their meanings easily inferred by someone familiar with the technology they describe. Empty text fields are interpreted as blank. Protocol Text fields may not exceed 12 characters in length, not counting the delimiting comma. This limit is imposed to simplify and clarify implementation issues.

Record Types

There are five categories of inter-company transactions that must be supported for direct access:

1. End Use Customer Administration
2. Metering Service
3. Billing Service
4. Distribution Loss Factors
5. Equipment Configuration

Separating communications into these categories simplifies the job of identifying communications purpose and content. Record types and their use are discussed in detail below.

Header Fields

All records in the California Metering Exchange Protocol begin with a consistent set of fields. They are the Record Type and Record Version fields. The supported sets of Record Types are:

1. “MEPAD01” – Administrative Data Type 1 – DASR
2. “MEPAD02” – Administrative Data Type 2 – Credit Data
3. “MEPMD01” – Metering Data Type 1 – Interval Data
4. “MEPMD02” – Metering Data Type 2 – TOU Data
5. “MEPBD01” – Billing Data Type 1 – Billed Dollars
6. “MPEBD02” – Billing Data Type 2 – Interval Pricing Plan

7. "MEPBD03" – Billing Data Type 3 – TOU Pricing Plan
8. "MEPLF01" – Distribution Loss Factors – Electric
9. "MEPEC01" – Equipment Configuration Type 1

The Record Version field is a Data field, as described above in "Specific Protocol Features," that contains the data that this specific record format was defined. This version number changes only when interpreting as some other version would produce invalid results.

Time Value

Time is not a trivial concern. Many problems occur if time and date are not handled properly. Customers may be billed incorrectly. Usage statistics may be invalidated. The changes to and from daylight savings time confuse billing algorithms. Companies will be dealing with customers in multiple time zones. A single, standard approach to handling time and date is necessary.

The California Metering Exchange Protocol records and transmits all information using the international standard, Universal Coordinated Time (UTC). UTC, for the purposes of this document, is simply Greenwich Mean Time (GMT) without daylight savings time correction. UTC is an internationally recognized time representation and is actually used internally in nearly all of our modern computer systems, including desktop PCs.

Meter readings, administrative operations, and billing transactions are all reported in UTC. Some accounting billing is based upon time-of-day which is normally defined in terms of local time. For those accounts, conversion from UTC to local time must be performed. Each meter's configuration information includes time zone descriptions for both standard and daylight savings time. Time values must be corrected to local time for billing purposes by adding the appropriate time zone value to the UTC value, taking into account crossing day and month boundaries.

The California Metering Exchange Protocol time calculations may appear complex and obscure to people who are unfamiliar with the internal operation of modern computer systems. The algorithms to perform these operations are both simple and well known. Converting time values from UTC to local time and back is so common that most people take these operations for granted, not realizing that it is even taking place. This protocol simply utilizes UTC for its intended purpose.

Protocol Text

Protocol Text values are predefined text strings. Their use allows constant and reliable parameter identification. Their use also provides boundaries to the range of values that may be used in fields. Most Protocol Text values are defined in the description of the fields to which they apply. One particular kind of Protocol Text value common to multiple fields is listed here for convenience:

UNITS

- **“KWHREG”** – Meter dial or register readings for printing on monthly bill.
- **“KVAHREG”** – Meter dial or register readings for printing on monthly bill.
- **“KVARHREG”** – Meter dial or register readings for printing on monthly bill.
- **“GASREG”** – Meter dial or register readings for printing on monthly bill.
- **“PULSE”** – Direct meter pulse readings.
- **“KW”** – Kilowatt demand, usually expressed as peak value in time interval.
- **“KVA”** – Kilovolt-ampere demand, usually expressed as peak value in time interval.
- **“KVAR”** – Kilovolt-Ampere-Reactive demand, usually expressed as peak value in time interval. Values may be positive or negative depending upon power factor. Values are positive for VARs produced by customer or negative for VARs consumed by customer. Induction motors consume watts and VARs. A condenser bank produces VARs. An over-excited generator produces watts and VARs. An under-excited generator produces watts and consumes VARs.
- **“KWH”** – Kilowatt hours used.
- **“KVAH”** – Kilovolt-ampere hours.
- **“KVARH”** – Kilovolt-Ampere-Reactive hours. Values may be positive or negative depending upon power factor. See KVAR above for further notes.
- **“GKW”** – Kilowatt generation, received from customer, usually expressed as peak value in time interval. Used when customer is generating power.
- **“GKVA”** – Kilovolt-Ampere-Reactive generation received from customer, usually expressed as peak value in time interval. Used when customer is generating power. Values may be positive or negative depending upon power factor. See KVAR above for further notes.
- **“GKWH”** – Kilowatt hours received from customer. Used when customer is generating power.
- **“GKVARH”** – Kilovolt-Ampere-Reactive hours received from customer. Used when customer is generating power. Values may be positive or negative depending upon power factor. See KVAR above for further notes.
- **“VOLTS”** – Volts.

- **“BTU”** – British Thermal Units.
- **“THERM”** – Therms.
- **“GAL”** – Gallons.
- **“CF”** – Cubic Feet.
- **“CCF”** – Hundreds of Cubic Feet.
- **“MCF”** – Thousands of Cubic Feet.
- **“ACFT”** – Acre-Feet.
- **“LBS”** – Pounds.
- **“\$”** – US Dollars.

Administrative Data Records

California Metering Exchange Protocol administration communications occur to establish logical linkages between SPs and customers. Linkages between customers and Utility distribution companies (UDC), Electric Service Providers (ESP), Metering Agents (MA) and Billing Agents (BA) must be supported. They also allow agencies to notify other agencies of changes in metering account status. The transactions in this category are:

- (Customer to UDC) establish/break direct access with SP.
- (SP to UDC) establish/break direct access with customer.
- (UDC to Customer) acknowledge success or failure of access request.
- (UDC to SP) acknowledge success or failure of access request.
- (SP to UDC) request resend of account information.
- (UDC to SP) resend account information.
- (UDC to SP) notify of shutoff or turn-on of service.
- (MA to UDC/ESP) notify of metering configuration change.
- (MA TO UDC/ESP) notify of metering change out.
- (UDC to SP) notify of tax or fee category change.

The above transactions are all performed using the single administrative record type “MEPAD01”. These are commonly referred to as Direct Access Service Requests (DASR). In all cases, the assumed ownership of record data is with the metering agent. Customer, UDC, and SP requests need contain data in only those fields necessary to define what change is requested. MA transmissions contain the entire record contents as it currently exists.

The “MEPAD02” Record is provided to transmit customer credit data.

“MEPAD01” – Administrative Data Type 1 – DASR

The sequence of fields in this record is:

- I. **Record Type:** *Protocol Text:* Always **“MEPAD01”**
- II. **Record Version:** *Date (“CCYYMMDD”):* Currently **“19970912”**

- III. **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.
- IV. **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, 13 by SCE.
- V. **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.
- VI. **Receiver Customer ID:** *Arbitrary Text:* This is the receiving entity's 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, 13 by SCE.
- VII. **Time Stamp:** *Date/Time ("CCYYMMDDHHMM"):* Date and Time that this record was created.
- VIII. **Record ID:** *Arbitrary Text:* This is an optional field that may be supplied in a request record. The contents of this field will be returned unchanged in the corresponding response record. The length of this text shall not exceed 16 characters.
- IX. **Operation Type:** *Protocol Text:* What kind of operation triggered this record to be transmitted. See "MEPAD01 Operations" below for examples of field use. Defined values are:
 - A. "CUST-REQ" – (Customer to UDC) establish/break direct access with SP.
 - B. "CUST-ACK" – (UDC to Customer) acknowledge success of access request.
 - C. "CUST-NAK" – (UDC to Customer) reject an access request.
 - D. "SP-REQ" – (SP to UDC) establish/break direct access with customer.
 - E. "SP-ACK" – (UDC to Customer) acknowledge success of access request.
 - F. "SP-NAK" – (UDC to SP) reject an access request.
 - G. "ACNT-REQ" – (SP to UDC) request resend of account information.
 - H. "ACNT-RESP" – (UDC to SP) resend account information.
 - I. "MD-REQ" – (ESP or UDC to MA) request resend of metering data.
 - J. "MD-ACK" – (MA to UDC or ESP) acknowledge request for resend metering data.
 - K. "MD-NAK" – (MA to SP) reject a request for resend.
 - L. "BD-REQ" – (SP to UDC or UDC to SP) request resend of billing data.
 - M. "BD-ACK" – (UDC to SP or SP to UDC) acknowledge request for resend billing data.
 - N. "BD-NAK" – (UDC to SP or SP to UDC) reject a request for resend of billing data.
 - O. "SVC" – (UDC to SP) notify of shutoff or turn-on of service.
 - P. "CFG" – (MA to UDC or ESP) notify of metering configuration change.
 - Q. "METER" – (MA to UDC or ESP) notify of meter change out.
 - R. "BILL-ADDR" – (UDC to SP or SP to UDC) notify of billing address change.
 - S. "ACK" – (SP to UDC or UDC to SP) Acknowledge notification.
- X. **Service Relationship Count:** *Numeric Integer:* The number of relationships included in the following "Type of Service Relationship" field.
- XI. **Type of Service Relationship:** *Protocol Text:* The kind of account/entity relationship this record describes. Multiple entries may be supplied. Entries are separated by ASCII space character (20 Hexadecimal). The length of this field shall not exceed 72 characters. Defined values are:
 - A. "MTR-OWN" – Owner of meter.
 - B. "MTR-INST" – Meter installer or maintainer.
 - C. "MTR-RDR" – Meter reader.

- D. **"MTR-AGNT"** – Meter agent for customer.
 - E. **"ELEC-ESP"** – Electric Energy Service Provider for customer
 - F. **"ELEC-SC"** – Electric Scheduling Coordinator for customer.
 - G. **"GAS-ESP"** – Gas Energy Service Provider for customer.
 - H. **"BILLER"** – Customer accounting billing agent.
 - I. **"BILL-CAL"** – Customer's agent for billing calculations.
 - J. **"UDC"** – Customer's Utility Distribution Company.
- XII. **Reason:** *Protocol Text:* Why this transmission is sent. Defined values are:
- A. **"UPDATE"** – Report a change in status.
 - B. **"RESEND"** – Repeat of a previous configuration.
 - C. **"ADJUST"** – An adjustment to a previously sent configuration that may involve billing corrections.
 - D. **"CORRECT"** – A correction to a previously sent configuration that does not involve billing changes.
 - E. **"CONNECT"** – Request direct access.
 - F. **"DISCONNECT"** – Request direct access be discontinued.
 - G. **"NO-READ"** – This is notice that a meter could not be read. The reason the meter could not be read should be placed in the comment field below.
- XIII. **Comment:** *Arbitrary Text:* An optional field used to supply additional information about the indicated operation. This field is typically used in "NAK" transmissions to indicate the reason for rejecting a request. It is also used to indicate the reason a meter could not be read in a "NO-READ" record. The length of this text shall not exceed 64 characters.
- XIV. **UDC ID:** *Arbitrary Text:* Identity of the UDC. It will typically be an abbreviation of the UDC company name. Currently, only the first 16 characters of this field will be recognized by PG&E.
- XV. **UDC Account ID:** *Arbitrary Text:* ESP account information assigned by UDC. This field is supplied to facilitate special contract accounting. Currently, only the first 16 characters of this field will be recognized by PG&E.
- XVI. **Effective Start Date:** *Date/Time ("CCYYMMDDHHMM"):* Communicates requested effective date when used supplied in requests for change in account status. Communicates actual effective date in responses or update notices.
- XVII. **Effective End Date:** *Date/Time ("CCYYMMDDHHMM"):* The date that this "Type of Service Relationship" account was closed.
- XVIII. **Account Status:** *Protocol Text:* A descriptive abbreviation of the status of this account. Defined values are:
- A. **"NEW"** – Defined but not active.
 - B. **"PEND-SP"** – Customer has requested direct access status change. Change is pending, waiting for SP's request.
 - C. **"PEND-CUS"** – SP has requested direct access status change. Change is pending, waiting for Customer's request or contract execution.
 - D. **"PEND-MTR"** – Customer has requested direct access status change. Change is pending; meter changeout required.
 - E. **"PEND"** – Change in direct access status is approved. Waiting for direct access transfer date that will usually be the beginning of the next billing period.
 - F. **"OK"** – Active account.
 - G. **"OFF"** – Shut-off.
 - H. **"INACT"** – Inactive.

- I. **"DEL"** – Deleted.
- J. **"NO-DATA"** – An active account has no metering data available. This indicates that one or more readings have been missed and estimation is not allowed by this account's estimation rules.
- XIX. **Pending Status:** *Protocol Text:* A status as described in the Metering account status" field above that will take effect sometime in the future. This is used by UDC to notify SP that account status will change soon. The effective change time is described in the "Effective start date" or "effective end date" fields above.
- XX. **Pending SP Identifier:** *Arbitrary Text:* This identifies the SP that will "Type of Service Relationship" connection to this customer at the date and time described in "Pending Effective Date." It will typically be an abbreviation of the SP's company name. Currently, only the first 16 characters of this field will be recognized by PG&E.
- XXI. **Reading Estimation Method:** *Protocol Text:* This is a description of the estimation rules applied to estimate values for missing data. Defined values are:
 - A. **"PG&E"** – PG&E's internal estimation method.
 - B. **"MADAWG01"** – Metering and Data Access Working Group method version.
 - C. **"NONE"** – No estimation will be done.
- XXII. **Commodity:** *Protocol Text:* Describes what commodity type this account is for. Defined values are:
 - A. **"E"** – Electricity
 - B. **"G"** – Gas
 - C. **"W"** – Water
 - D. **"S"** – Steam
- XXIII. **Customer Name:** *Arbitrary Text:* This is the customer's complete name. It is used primarily with commercial accounts for company name. Currently, only the first 22 characters of this field will be recognized by PG&E, 8 by SCE.
- XXIV. **Contact Last Name:** *Arbitrary Text:* This is the customer's last name. Currently, only the first 22 characters of this field will be recognized by PG&E.
- XXV. **Contact First Name:** *Arbitrary Text:* This is the customer's first name. Currently, only the first 22 characters of this field will be recognized by PG&E.
- XXVI. **Contact Middle Initial:** *Arbitrary Text:* This is the customer's middle initial. Currently, only 1 character of this field will be recognized by PG&E.
- XXVII. **House/Building Number:** *Arbitrary Text:* This is the part of the street address. Currently, only the first 10 characters of this field will be recognized by PG&E, 6 by SCE.
- XXVIII. **House/Building Fraction Number:** *Arbitrary Text:* This is part of the street address. Currently, only the first 5 characters of this field will be recognized by PG&E, 3 by SCE.
- XXIX. **Street Prefix:** *Arbitrary Text:* This is part of the street address. Currently, only the first 5 characters of this field will be recognized by PG&E, 2 by SCE.
- XXX. **Street Name:** *Arbitrary Text:* This is part of the street address. Currently, only the first 22 characters of this field will be recognized by PG&E, 25 by SCE.
- XXXI. **Street Suffix:** *Arbitrary Text:* This is part of the street address. Currently, only the first 5 characters of this field will be recognized by PG&E, 4 by SCE.
- XXXIII. **Unit Number:** *Arbitrary Text:* This is part of the street address. Currently, only the first 10 characters of this field will be recognized by PG&E, 8 by SCE.
- XXXIV. **City:** *Arbitrary Text:* This is the address city of the meter. Currently, only the first 12 characters of this field will be recognized by PG&E, 25 by SCE.

- XXXIV. **State:** *Arbitrary Text:* This is the address state of the meter. This is a standard abbreviation for the state or province. Currently, only the first 2 characters of this field will be recognized by PG&E, 2 by SCE.
- XXXV. **Country:** *Arbitrary Text:* This is the address country of the meter. Currently, only the first 15 characters of this field will be recognized by PG&E.
- XXXVI. **ZIP:** *Arbitrary Text:* This is the address zip code of the meter. Currently, only the first 5 characters of this field will be recognized by PG&E, 5 by SCE.
- XXXVII. **ZIP Extension4:** *Arbitrary Text:* This is an extension to the address zip code of the meter. Currently, only the first 4 characters of this field will be recognized by PG&E, 4 by SCE.
- XXXVIII. **USPS Carrier Route:** *Arbitrary Text:* This is an extension to the address zip code of the meter. Currently, only the first 2 characters of this field will be recognized by PG&E, 4 by SCE.
- XXXIX. **Standard Time Zone:** *Numeric Integer:* (Generated by MA) Time zone for local time calculations when daylight savings time is NOT in effect. This value is in minutes difference from Universal Coordinated Time (UTC) which, for the purposes of this document, is the same as GMT without daylight savings time applied. Pacific Standard Time has the value -480 (negative four hundred eighty), Eastern Standard Time -300 (negative three hundred).
- XL. **Daylight Time Zone:** *Numeric Integer:* (Generated by MA) Time zone for local time calculations when daylight savings is in effect. If daylight savings time change is not to be used, this field is left empty. Standard algorithms are used to calculate when standard versus daylight savings time is to be applied. This value is in minutes difference from UTC. Pacific Daylight Savings Time has the value -420 (negative four hundred twenty), Eastern Standard Time - 240 (negative two hundred forty).
- XLI. **Service Category:** *Protocol Text:* The category of service. This information is used to calculate distribution loss costs. Defined values are:
 - A. **"S"** – Secondary (typically service at less than 2KV).
 - B. **"P"** – Primary (typically service at greater than 2KV and less than 60KV).
 - C. **"PS"** – Primary Subtransmission.
 - D. **"T"** – Transmission (typically service at greater than 60KV).
- XLII. **Meter Congestion Zone:** *Arbitrary Text:* (Generated by UDC) The ISO distribution congestion zone identifier. This may alternatively be used to indicate Load Group, Load Point, Grid Takeout Point, or a combination thereof. Currently, only the first 20 characters of this field will be recognized by PG&E.
- XLIII. **Usage Profile:** *Arbitrary Text:* (Generated by UDC) The description of this accounts usage class. Currently, only the first 12 characters of this field will be recognized by PG&E.
- XLIV. **Billing Option:** *Protocol Text:* This is a description of which entity or entities perform billing for service. Defined values are:
 - A. **"DUAL"** – SP bills for service, UDC bills additional fees.
 - B. **"UDC"** – UDC bills customer.
 - C. **"SP"** – SP bills customer.
- XLV. **UDC Rate Name:** *Arbitrary Text:* (Generated by UDC) UDC rate schedule is commonly used with bill ready accounts. Currently, only the first 12 characters of this field will be recognized by PG&E.
- XLVI. **SP Rate Name:** *Arbitrary Text:* (Generated SP) SP rate schedule required for BA or UDC-Consolidated billing. For bill ready accounts, the text string "BILL-READY" may be used. Currently, only the first 12 characters of this field will be recognized by PG&E.
- XLVII. **Phone International Access:** *Arbitrary Text:* Part of customer phone number. Currently, only the first 3 characters of this field will be recognized by PG&E.

- XLVIII. **Phone Area Code:** *Arbitrary Text:* Part of customer phone number. Currently, only the first 3 characters of this field will be recognized by PG&E.
- XLIX. **Phone Number:** *Arbitrary Text:* Part of customer phone number. Currently, only the first 7 characters of this field will be recognized by PG&E.
- L. **Phone Extension Number:** *Arbitrary Text:* Part of customer phone number. Currently, only the first 6 characters of this field will be recognized by PG&E.
- LI. **FAX Number:** *Arbitrary Text:* Customer's FAX number. Currently, only the first 20 characters of this field will be recognized by PG&E.
- LII. **Renewable Energy Provider:** *Protocol Text:* (Generated by SP) Indicates renewable energy provided for this account. Defined values are:
 - A. (blank) – Renewable energy not provided for this account.
 - B. "N" – Renewable energy not provided for this account.
 - C. "Y" – Renewable energy provided for this account.
- LIII. **Meter Count:** *Numeric Integer:* (Generated by MA) The number of "Meter" fields to follow. A maximum of 12 is allowed.
- LIV. **Meter:** *Arbitrary Text, Time Interval ("MMDDHHMM"), Protocol Text Triplet:* Each data entry is a set of three fields. The number of meter entry sets is described in the "Meter Count" field above. The "Arbitrary Text" entry is the **Meter ID**. 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 the information is useful. Currently, only the first 12 characters of this entry will be recognized by PG&E. The "Time Interval" entry is the **Usage Reading Interval**, the time interval that meter date is supplied. For example, monthly read meters would be encoded as "01000000", weekly as "00070000", hourly as "00000100", and 30 minute as "00000030". Note: "KWHREG", "KVAHREG", "KVARHREG", AND "GASREG" readings are special cases and are always assumed to be available in monthly intervals only for inclusion on printed bills. The "Protocol Text:" contains the **Units parameters**. This is a list of metering units supplied for this account. When multiple data types are available, individual abbreviations are separated by ASCII Space characters (20 Hexadecimal). For example, Meter reading plus kilowatt hours is "KWHREG KWH"; meter reading, kilowatt hours, and kilovar hours is "KWHREG KWH KVARH". A complete list of abbreviations is supplied in the Protocol Text Units listing. A maximum of 8 unit parameter entries per field is allowed. The length of this text shall not exceed 64 characters.

"MEPAD02" – Administrative Data Type 2 – Credit Data

The sequence of fields in this record is:

- I. **Record Type:** *Protocol Text:* Always "MEPAD02"
- II. **Record Version:** *Date ("CCYYMMDD"):* Currently "19970819"
- III. **Sender ID:** *Arbitrary Text:* identify 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.

- IV. **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.
- V. **Receiver ID:** *Arbitrary Text:* Identify 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.
- VI. **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.
- VII. **Time Stamp:** *Date/Time ("CCYYMMDDHHMM"):* Date and Time that this record was created.
- VIII. **Record ID:** *Arbitrary Text:* This is an optional field that may be supplied in a request record. The length of this text shall not exceed 16 characters.
- IX. **Operation Type:** *Protocol Text:* What kind of operation triggered this record to be transmitted. See "MEPAD01 Operations" below for examples of field use. Defined values are:
 - A. "SP-REQ" – (SP to UDC) Add or delete direct access with customer.
 - B. "SP-ACK" – (UDC to SP) acknowledge success of change request.
 - C. "SP-NAK" – (UDC to SP) reject a change request.
 - D. "ACNT-REQ" – (SP to UDC) request resend of account information.
 - E. "ACNT-RESP" – (UDC to SP) resend account information.
 - F. "CFG" – (MA to UDC or ESP) notify of credit data change.
 - G. "ACK" – (SP to UDC or UDC to SP) acknowledge notification.
- X. **Service Relationship Count:** *Numeric Integer:* The number of relationships included in the following "Type of Service Relationship" field.
- XI. **Type of Service Relationship:** *Protocol Text:* What kind of account/entity relationship this record describes. Multiple entries may be supplied. Entries are separated by ASCII space character (20 Hexadecimal). Defined values are:
 - A. "MTR-OWN" – Owner of meter.
 - B. "MTR-INST" – Meter installer or maintainer.
 - C. "MTR-RDR" – Meter reader.
 - D. "MTR-AGNT" – Meter agent for customer.
 - E. "ELEC-ESP" – Electric Energy Service Provider for customer.
 - F. "ELEC-SC" – Electric Scheduling Coordinator for customer.
 - G. "GAS-ESP" – Gas Energy Service Provider for customer.
 - H. "BILLER" – Customer's agent for billing calculations.
 - I. "BILL-CAL" – Customer's agent for billing calculations.
 - J. "UDC" – Customer's Utility Distribution Company.
- XII. **Reason:** *Protocol Text:* Why this transmission is sent. Defined values are:
 - A. "UPDATE" – report a change in status.
 - B. "RESEND" – repeat of a previous configuration.
 - C. "ADJUST" – an adjustment to a previously sent configuration that may involve billing corrections.
 - D. "CORRECT" – a correction to a previously sent configuration that does not involve billing changes.
 - E. "CONNECT" – request direct access.
 - F. "DISCONNECT" – request direct access be discontinued.

- XIII. **Comment:** *Arbitrary Text:* An optional field used to supply additional information about the indicated operation. This field is typically used in “NAK” transmissions to indicate the reason for rejecting a request. The length of this text shall not exceed 64 characters.
 - XIV. **UDC account ID:** *Arbitrary Text:* ESP account information assigned by UDC. This field is supplied to facilitate special contract accounting. Currently, only the first 16 characters of this field will be recognized by PG&E.
 - XV. **Social security number:** *Arbitrary Text:* Customer’s SSN. Currently, only the first 12 characters of this field will be recognized by PG&E.
 - XVI. **Driver’s license number:** *Arbitrary Text:* Customer’s driver’s license number. Number should be preceded by a two letter prefix for state. Currently, only the first 16 characters of this field will be recognized by PG&E.
 - XVII. **Spouse name:** *Arbitrary Text:* Customer’s spouse’s name. Currently, only the first 22 characters of this field will be recognized by PG&E.
 - XVIII. **Spouse’s social security number:** *Arbitrary Text:* Customer’s spouse’s SSN. Currently, only the first 12 characters of this field will be recognized by PG&E.
 - XIX. **Spouse’s driver’s license number:** *Arbitrary Text:* Customer’s spouse’s driver’s license number. Number should be preceded by a two letter prefix for state. Currently, only the first 16 characters of this field will be recognized by PG&E.
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Metering Service Data Records

California Metering Exchange Protocol metering communications occur to enable customer energy use and service billing. Most information transmitted in Metering Service Data Records consists of meter reading and energy use data about specific customers.

Metering Service Data Records are typically generated by the MA and supplied to the UDC and ESP. In the case of shut-off or turn-on, the UDC may be responsible for generating appropriate MEPMD01 records with final and initial meter readings. In the case of a changeout, the party changing out the meter may be responsible for providing the final and initial meter readings to the MA.

Metering 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 time stamp. That time stamp 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 time stamps.**

Whether beginning or end of interval time stamps 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 time stamps does not complicate this problem. Totaling algorithms must deal with the fact that the time stamp 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 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 time stamps 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.

Time-Of-Use Metering

There are two broad categories of metering data intervals employed for different accounts. The first is pure interval values, such as those accounts that are billed on total energy use on an hourly or monthly basis. The second is what is traditionally known as Time-Of-Use where energy use is broken into as many as five or more components. These components are normally labeled “On-Peak”, “Off-Peak”, and so on. (PG&E typically defines three components: “On-Peak”, “Part-Peak”, and “Off-Peak”). Time-Of-Use billing has typically been applied to monthly totals of individual use components but day-by-day billing is possible.

Time-Of-Use totaling is usually complicated by the treating of weekdays, weekends and holidays differently when assigning usage to On-Peak, or other categories. Often, all day Sunday is treated as an Off-Peak period. Time-Of-Use metering totals must therefore be identified by their component names and the overall time interval for which they are accumulated. Time-Of-Use and Interval data formats differ sufficiently to justify supporting them with two separate record types. Interval data is supported by “MEPMD01” – Metering Data Type 1 records and Time-Of-Use with “MEPMD02” – Metering Data Type 2 records.

Beginning and End of Month Meter Reads

Nominally, data transmissions of cumulative meter reads, such as monthly meter reads, should include both beginning of period and end of period date and usage values. This allows receiving entities to verify that no reading overlaps or gaps have occurred.

“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 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:

- I. **Record Type:** *Protocol Text:* Always **"MEPMD01"**
- II. **Record Version:** *Date ("CCYYMMDD"):* Currently **"19970819"**
- III. **Sender ID:** *Arbitrary Text:* Identify 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.
- IV. **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.
- V. **Receiver ID:** *Arbitrary Text:* Identify 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.
- VI. **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.
- VII. **Time Stamp:** *Date/Time ("CCYYMMDDHHMM"):* Date and Time that this record was created.
- VIII. **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 the information is useful. Currently, only the first 12 characters of this entry will be recognized by PG&E.
- IX. **Purpose:** *Protocol Text:* Indicates the reason for this data transmission. Defined values are:
 - A. **"OK"** – Normal transmission
 - B. **"RESEND"** – Retransmission of previously sent data.
 - C. **"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).
 - D. **"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 is generally supplied once per request for analysis purposes.
 - E. **"PROFILE"** – Account usage profile data.
 - F. **"TEMPLATE"** – Account usage template data.
- X. **Commodity:** *Protocol Text:* Describes what commodity type this account is for. Defined values are:
 - A. **"E"** – Electricity.
 - B. **"G"** – Gas.
 - C. **"W"** – Water.
 - D. **"S"** – Steam.
- XI. **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.
- XII. **Calculation Constant:** *Numeric Floating-Point:* Defines an optional value that 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.

- XIII. **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 the 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.
- XIV. **Count:** *Numeric Integer*: Indicates the number of Date/Time, flag, and value sets to follow. A maximum of 48 sets is allowed per record.
- XV. **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 be 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:
- A. **"(empty)"** – An empty flag field indicates that the value is OK and validated.
 - B. **"E"** – Value is estimated. Estimation method is described in account's "MEPAD01" record.
 - C. **"A"** – Value is an adjustment. Adjustments are made to correct metering inconsistencies or errors.
 - D. **"N"** – Value is empty. No value is being sent for this interval. May be sent as the first entry for a new account.
 - E. **"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:

- I. **Record Type:** *Protocol Text*: Always "MEPMD02"
- II. **Record Version:** *Date ("CCYYMMDD")*: Currently "19970819"
- III. **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.
- IV. **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.
- V. **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.
- VI. **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.
- VII. **Time Stamp:** *Date/Time ("CCYYMMDDHHMM")*: Date and Time that this record was created.
- VIII. **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 the information is useful. Currently, only the first 12 characters of this entry will be recognized by PG&E.

- IX. **Purpose:** *Protocol Text:* Indicates the reason for this data transmission. Defined values are:
- A. **"OK"** – Normal transmission
 - B. **"RESEND"** – Retransmission of previously sent data.
 - C. **"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).
 - D. **"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 is generally supplied once per request for analysis purposes.
 - E. **"PROFILE"** – Account usage profile data.
 - F. **"TEMPLATE"** – Account usage template data.
- X. **Commodity:** *Protocol Text:* Describes what commodity type this account is for. Defined values are:
- A. **"E"** – Electricity.
 - B. **"G"** – Gas.
 - C. **"W"** – Water.
 - D. **"S"** – Steam.
- XI. **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.
- XII. **Season Identifier:** *Protocol Text:* This identifies the season for which the values apply. Defined values are:
- A. **"S"** – Summer.
 - B. **"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.
- XIII. **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.
- XIV. **Data Start Time:** Date/Time ("CCYYMMDDHHMM"): Describes date and time that the data interval reported in this record began.
- XV. **Data Time stamp:** Date/Time ("CCYYMMDDHHMM"): Describes date and time that ends the interval reported in this record.
- XVI. **Count:** Numeric Integer: Indicates the number of label-flag-value sets to follow. A maximum of 6 sets is allowed per record.
- XVII. **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 field indicates that the value is OK.) Defined values for the label field are:
- A. **"ON-PEAK"**

- B. "OFF-PEAK"
 - C. "PART-PEAK"
 - D. "PEAK-2"
 - E. "PEAK-3"
 - F. "PEAK-4"
 - G. "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 send 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 account pricing situation. 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 time stamp. That time stamp 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 time stamps.**

Whether beginning or end of interval time stamps 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 time stamps does not complicate this problem. Totaling algorithms must deal with the fact that the time stamp 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 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 time stamps 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.

“MEPBD01” – Billing Data Type 1 – Billed Dollars

The sequence of fields in this record is:

- I. **Record Type:** *Protocol Text:* Always “MEPBD01”
- II. **Record Version:** *Date (“CCYYMMDD”):* Currently “19970819”
- III. **Sender ID:** *Arbitrary Text:* Identify 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.
- IV. **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.
- V. **Receiver ID:** *Arbitrary Text:* Identify 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.
- VI. **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.
- VII. **Time Stamp:** *Date/Time (“CCYYMMDDHHMM”):* Date and Time that this record was created.
- VIII. **Record ID:** *Arbitrary Text:* This is an optional field that may be supplied in a request record. The contents of this field will be returned unchanged in the corresponding response record. The length of this text shall not exceed 16 characters.
- IX. **Purpose:** *Protocol Text:* Indicates the reason for this data transmission. Defined values are:
 - A. “OK” – Normal transmission
 - B. “RESEND” – Retransmission of previously sent data.
 - C. “CORRECT” – Correction to previously sent data.
 - D. “ADJUST” – Adjustment to previously sent amounts.
 - E. “PAYMENT” – Notice of payment.
 - F. “UNCOLLECT” – Notice of problem with payment.
- X. **Comment:** *Arbitrary Text:* An optional field used to supply additional information about the indicated operation. This field will contain a short, human readable text. It will typically be supplied to indicate the reason for a correction or an adjustment. The length of this field shall not exceed 64 characters.
- XI. **Bill period start date:** *Date/Time (“CCYYMMDDHHMM”):* The first day of this billing period.
- XII. **Bill period close date:** *Date/Time (“CCYYMMDDHHMM”):* The last day of this billing period.
- XIII. **Bill period meter start:** *Numeric Integer:* The beginning of billing period meter reading.
- XIV. **Bill period meter close:** *Numeric Integer:* The end of billing period meter reading.
- XV. **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.

- XVI. **Bill Total:** *Numeric Floating-Point:* Total amount billed for this record. This value does not include "Previous Balance".
- XVII. **Previous Balance:** *Numeric Floating-Point:* Any unpaid amount from previous billing period.
- XVIII. **Component Count:** *Numeric Integer:* The number of billing component items to follow. A maximum of 64 is allowed.
- XIX. **Components:** Protocol Text, Arbitrary Text, and Numeric Floating-Point triplet: Each component entry is a set of three fields. The number of component sets is described in the "Component Count" field above. The Protocol Text field of each pair contains an identifier for the kind of component the following optional Arbitrary Text description field and Numeric Floating-Point value represents. Currently, only the first 30 characters of this entry will be recognized by PG&E. Note that a type "OTHER" is supplied to enable transmission of information about otherwise undefined billing items. The Defined Protocol Text values are:
- A. **"Usage"** – An explanatory entry providing commodity usage information for printing on a customer's bill. The Numeric Floating-Point field contains the usage quantity described in the Arbitrary Text field. The Numeric Floating-Point field value is not totaled with other values in this record.
 - B. **"TEXT"** – A text line to be printed on bill. The Numeric Floating-Point field of this triplet is ignored.
 - C. **"ELEC-ENERGY"** – Electric energy part of bill total. There may be multiple "ELEC-ENERGY" entries. The Arbitrary Text field is not optional and must describe this component.
 - D. **"ELEC-TRANS"** – Transmission component of bill total.
 - E. **"ELEC-DIST"** – Distribution component of bill total.
 - F. **"ELEC-PPP"** – Public Purpose Programs component of bill total.
 - G. **"ELEC-CTC"** – Competition Transition Costs (CTC) component of bill total.
 - H. **"ELEC-TOTAL"** – Total electric charges.
 - I. **"GAS-ENERGY"** – Gas energy part of bill total. There may be multiple "GAS-ENERGY" entries. The Arbitrary Text field is not optional and must describe this component.
 - J. **"GAS-TOTAL"** – Gas charges total of bill total.
 - K. **"OTHER"** – Some other kind of billed amount. The Arbitrary Text field is not optional and must describe this component.
 - L. **"DISCOUNT"** – A dollar amount discount applied to above billed amounts. The Arbitrary Text field is not optional and must describe this component.
 - M. **"ADJUST"** – A dollar amount adjustment to be applied to above billed amounts. The Arbitrary Text field is not optional and must describe this component.
 - N. **"CREDIT"** – A dollar amount adjustment to be applied to above billed amounts. The Arbitrary Text field is not optional and must describe this component.
 - O. **"REFUND"** – A dollar amount adjustment to be applied to above billed amounts. The Arbitrary Text field is not optional and must describe this component.

"MEPBD02" – Billing Data Type 2 – Interval Pricing Plan

This record is provided to allow SP or UDC to describe to BA how to bill their customer. It is used to describe hourly or periodic pricing schedules. Various kinds of usage summary and billing information are transmitted using this record type. Price is in US dollars per unit of commodity.

The sequence of fields in this record is:

- I. **Record Type:** *Protocol Text:* Always “MEPBD02”
- II. **Record Version:** *Date (“CCYYMMDD”):* Currently “19970819”
- III. **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.
- IV. **Receiver ID:** *Arbitrary Text:* Identify 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.
- V. **Time Stamp:** *Date/Time (“CCYYMMDDHHMM”):* Date and Time that this record was created.
- VI. **Record ID:** *Arbitrary Text:* This is an optional field that may be supplied in a request record. The contents of this field will be returned unchanged in the corresponding response record. The length of this text shall not exceed 16 characters.
- VII. **Operation Type:** *Protocol Text:* What kind of operation triggered this record to be transmitted. Defined values are:
 - A. “UPDATE” – This is notice of a change in plan or creation of a new plan.
 - B. “UPDATE-ACK” – Acknowledge plan change.
 - C. “UPDATE-NAK” – Reject plan change.
 - D. “REMOVE” – This is notice of deletion of a plan entry.
 - E. “REMOVE-ACK” – Acknowledge deletion.
 - F. “REMOVE-NAK” – Reject deletion.
 - G. “CFG-REQ” – (SP to UDC) Request plan records.
 - H. “CFG” – This is current plan, no change has occurred.
 - I. “CFT-NAK” – Reject a plan request.
- VIII. **Purpose:** *Protocol Text:* Indicates the reason for this data transmission. Defined values are:
 - A. “OK” – Normal transmission
 - B. “RESEND” – Retransmission of previously sent data.
 - C. “CORRECT” – Correction to previously sent data.
- IX. **Comment:** *Arbitrary Text:* An optional field used to supply additional information about the indicated operation. This field will contain a short, human readable text. It will typically be supplied to indicate the reason for a correction or an adjustment. The length of this field shall not exceed 64 characters.
- X. **Pricing plan identifier:** *Arbitrary Text:* This identifies this plan which will be referenced in account configuration records. This identifier is generated by the SP. Currently, only the first 12 characters of this field will be recognized by PG&E.
- XI. **Plan start date:** *Date/Time (“CCYYMMDDHHMM”):* The date this pricing plan goes into effect.
- XII. **Plan end date:** *Date/Time (“CCYYMMDDHHMM”):* The date that this pricing plan is no longer in effect.
- XIII. **Commodity:** *Protocol Text:* Describes what quantity this billing is for. Defined values are:
 - A. “E” – Electricity.
 - B. “G” – Gas.
 - C. “W” – Water.
 - D. “S” – Steam.
- XIV. **Commodity Units:** *Protocol Text:* The units that apply to the following usage fields. Allowed values are:
 - A. “THERM” – Gas Therms.

- B. **"KWH"** – Kilowatt hours.
 - C. **"GAL"** – Gallons.
 - D. **"CUFT"** – Cubic Feet.
 - E. **"ACFT"** – Acre-Feet.
 - F. **"LBS"** – Pounds.
- XV. **Limit:** *Numeric Floating-Point:* This optional field describes the **lower limit** of commodity **interval** usage of this plan's table should be applied. Limit is used with two-tiered or multi-tiered energy pricing. An empty Limit field or a Limit value of zero indicates that this is the base commodity price. When a non-zero price is supplied in this field, the prices in this plan apply when an interval usage total exceeds this value.
- XVI. **Flat Rate price:** *Numeric Floating-Point:* A fixed price amount billed each billing period.
- XVII. **Flat Usage Description:** *Arbitrary Text:* A description of fixed price rules for this account. Currently, only the first 30 characters of this field will be recognized by PG&E.
- XVIII. **Interval:** *Time Interval ("MMDDHHMM"):* Describes the time interval between readings. Pricing and billing data is transmitted as Date/Time and value pairs. In many cases, however, the time intervals for the data values are 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 entry 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.
- XIX. **Count:** *Numeric Integer:* Indicates the number of Date/Time and value pairs to follow. A maximum of 48 pairs is allowed per record.
- XX. **Data:** *Date/Time ("CCYYMMDDHHMM"):* and *Numeric Floating-Point pair:* Each data entry is a pair of fields. The number of data entry pairs is described in the "Count" field above. When an "Interval" field is supplied, Date/Time fields after the first may be 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 in this record.

"MEPBD03" – Billing Data Type 3 – TOU Pricing Plan

This record is provided to allow SPs to describe to UDCs how to bill their customers. A completely general approach to defining billing algorithms would take on the character of a general purpose programming language. This record does not attempt to achieve that goal. It models a straightforward Off-Peak, On-Peak, etc., two-tiered energy pricing scheme.

Usage Price Limit fields specified below are used with two-tiered or multi-tiered energy pricing. An empty Limit field or a Limit value of zero indicates that this is the base commodity price. When a non-zero price is supplied in this field, the prices in this plan apply when a usage total exceeds this value. A small customer account pricing plan might be \$0.10 KWH for the first 5000 KWH and \$0.05 per KWH after that. In this example, the usage price limit value would be 5000 KWH.

The sequence of fields in this record is:

- I. **Record Type:** *Protocol Text:* Always **"MEPBD03"**
- II. **Record Version:** *Date ("CCYYMMDD"):* Currently **"19970819"**

- III. **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.
- IV. **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.
- V. **Time Stamp:** *Date/Time ("CCYYMMDDHHMM"):* Date and Time that this record was sent.
- VI. **Record ID:** *Arbitrary Text:* This is an optional field that may be supplied in a request record. The contents of this field will be returned unchanged in the corresponding response record. The length of this text shall not exceed 16 characters.
- VII. **Operation Type:** *Protocol Text:* What kind of operation triggered this record to be transmitted. Defined values are:
 - A. **"UPDATE"** – This is notice of a change in plan or creation of a new plan.
 - B. **"UPDATE-ACK"** – Acknowledge plan change.
 - C. **"UPDATE-NAK"** – Reject plan change.
 - D. **"REMOVE"** – This is notice of deletion of a plan entry.
 - E. **"REMOVE-ACK"** – Acknowledge deletion.
 - F. **"REMOVE-NAK"** – Reject deletion.
 - G. **"CFG-REQ"** – (SP to UDC) Request plan records.
 - H. **"CFG"** – This is current plan, no change has occurred.
 - I. **"CFT-NAK"** – Reject a plan request.
- VIII. **Purpose:** *Protocol Text:* Indicates the reason for this data transmission. Defined values are:
 - A. **"OK"** – Normal transmission
 - B. **"RESEND"** – Retransmission of previously sent data.
 - C. **"CORRECT"** – Correction to previously sent data.
- IX. **Comment:** *Arbitrary Text:* An optional field used to supply additional information about the indicated operation. This field will contain a short, human readable text. It will typically be supplied to indicate the reason for a correction or an adjustment. The length of this field shall not exceed 64 characters.
- X. **Pricing plan identifier:** *Arbitrary Text:* This identifies this plan which will be referenced in account configuration records. This identifier is generated by the SP. Currently, only the first 12 characters of this field will be recognized by PG&E.
- XI. **Plan start date:** *Date ("CCYYMMDD"):* The date this pricing plan goes into effect.
- XII. **Plan end date:** *Date ("CCYYMMDD"):* The date that this pricing plan is no longer in effect.
- XIII. **Season Identifier:** *Protocol Text:* This identifies the season for which this plan is to apply. Defined values are:
 - A. **"S"** – Summer.
 - B. **"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. If only a summer or a winter version of the plan is found at billing time, the plan will be used for billing regardless of the season. Data for different seasons must be sent in separate records.
- XIV. **Season Begin:** *Date/Time ("CCYYMMDDHHMM"):* Date and time that this billing season begins. This field may be left blank for plans that do not differentiate between seasons.
- XV. **Season End:** *Date/Time ("CCYYMMDDHHMM"):* Date and time that this billing season ends. This field may be left blank for plans that do not differentiate between seasons.
- XVI. **Commodity:** *Protocol Text:* Describes what quantity this billing is for. Defined values are:

- A. **"E"** – Electricity.
 - B. **"G"** – Gas.
 - C. **"W"** – Water.
 - D. **"S"** – Steam.
- XVII. **Commodity Units:** *Protocol Text:* The units that apply to the following usage fields. Allowed values are:
- A. **"THERM"** – Gas Therms.
 - B. **"KWH"** – Kilowatt hours.
 - C. **"GAL"** – Gallons.
 - D. **"CUFT"** – Cubic Feet.
 - E. **"ACFT"** – Acre-Feet.
 - F. **"LBS"** – Pounds.
- XVIII. **Flat Usage price:** *Numeric Floating-Point:* A fixed price amount billed each billing period.
- XIX. **Flat Usage description:** *Arbitrary Text:* A description of fixed price rules for this account. Currently, only the first 30 characters of this field will be recognized by PG&E.
- XX. **Total or On-Peak usage price 1:** *Numeric Floating-Point:* The price of this commodity up to the On-Peak price 1 limit value. Price is in US dollars per unit of commodity.
- XXI. **Total or On-Peak usage price 1 limit:** *Numeric Floating-Point:* This is the On-Peak price 1 limit value.
- XXII. **Total or On-Peak usage price 2:** *Numeric Floating-Point:* The price of this commodity above the On-Peak price 1 limit value. Price is in US dollars per unit of commodity.
- XXIII. **Total or On-Peak demand price:** *Numeric Floating-Point:* The demand charge for this commodity. Price is in US dollars per unit of demand.
- XXIV. **Component Count:** *Numeric Integer:* The number of additional billing component types to follow. A maximum of 5 is allowed.
- XXV. **Components:** Sets of fields that define additional billing components. The number of sets is defined in the "Component Count" field above. Each set consists of the following fields:
- A. **Component Name:** *Protocol Text:* The name of this component. Defined values are:
 - "OFF-PEAK"
 - "PART-PEAK"
 - "PEAK-2"
 - "PEAK-3"
 - "PEAK-4"
 - B. **Price 1:** *Numeric Floating-Point:* The price of this commodity up to the price 1 limit value. Price is in US dollars per unit of commodity.
 - C. **Price 1 limit:** *Numeric Floating-Point:* This is the price 1 limit value.
 - D. **Price 2:** *Numeric Floating-Point:* The price of this commodity above the price 1 limit value. Price is in US dollars per unit of commodity.
 - E. **Demand price:** *Numeric Floating-Point:* The demand charge for this commodity. Price is in US dollars per unit of demand.
 - F. **Weekday Start Time:** *Time ("HHMM"):* The local time-of-day during workdays that this component's time begins.
 - G. **Weekday End Time:** *Time ("HHMM"):* The local time-of-day during workdays that this component's time ends.
 - H. **Saturday Start Time:** *Time ("HHMM"):* The local time-of-day during workdays that this component's time begins. If special Saturday component pricing is not used, this field is left empty – weekday pricing will be applied.

- I. **Saturday End Time:** *Time (“HHMM”)*: The local time-of-day during workdays that this component’s time ends. If special Saturday component pricing is not used, this field is left empty.
- J. **Sunday Start Time:** *Time (“HHMM”)*: The local time-of-day during workdays that this component’s time begins. If special Sunday component pricing is not used, this field is left empty – weekday pricing will be applied.
- K. **Sunday End Time:** *Time (“HHMM”)*: The local time-of-day during workdays that this component’s time ends. If special Sunday component pricing is not used, this field is left empty.
- L. **Holiday Start Time:** *Time (“HHMM”)*: The local time-of-day during holidays that this component’s time begins. If special holiday component pricing is not used, this field is left empty – weekday pricing will be applied.
- M. **Holiday End Time:** *Time (“HHMM”)*: The local time-of-day during holidays that this component’s time ends. If special holiday component pricing is not used, this field is left empty.

Distribution Loss Factors Data Records

California Metering Exchange Protocol distribution loss factor communications occur to enable accurate account of energy distribution costs. This information is supplied by the UDC.

“MEPLF01” – Loss Factors Type 1 – Electric

The sequence of fields in this record is:

- I. **Record Type:** *Protocol Text:* Always “MEPLF01”
- II. **Record Version:** *Date (“CCYYMMDD”)*: Currently “19970912”
- III. **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.
- IV. **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.
- V. **Time Stamp:** *Date/Time (“CCYYMMDDHHMM”)*: Date and Time that this record was created.
- VI. **Record ID:** *Arbitrary Text:* This is an optional field that may be supplied in a request record. The contents of this field will be returned unchanged in the corresponding response record. The length of this text shall not exceed 16 characters.
- VII. **Purpose:** *Protocol Text:* Indicates the reason for this data transmission. Defined values are:
 - A. “OK” – Normal transmission
 - B. “RESEND” – Retransmission of previously sent data.
 - C. “CORRECT” – Correction to previously sent data.
 - D. “ADJUST” – Adjustment to previously sent amounts.
- VIII. **UDC identifier:** *Arbitrary Text:* Identity of the UDC supplying this data. Currently, only the first 16 characters of this field will be recognized by PG&E.
- IX. **Profile date:** *Date/Time (“CCYYMMDDHHMM”)*: The date this data became valid.

- X. **Reference Hour:** *Time (“HHMM”)*: The time for which this loss factor is valid.
 - XI. **DLF type:** *Arbitrary Text*: The type of distribution loss factor. The length of this text shall not exceed 4 characters.
 - XII. **Subtransmission DLF:** *Numeric Floating-Point*: Subtransmission loss factor.
 - XIII. **Primary DLF:** *Numeric Floating-Point*: Primary line loss factor.
 - XIV. **Secondary DLF:** *Numeric Floating-Point*: Secondary line loss factor.
-

Equipment Configuration Records

California Metering Exchange Protocol equipment configuration communications occur to enable metering equipment descriptions to be transferred between companies. MA (meter owners, installers, and maintainers) supplies this information to UDC for disaster recovery purposes. The UDC is typically the first response agency during major service disruptions. Equipment Configuration data is normally stored by UDC for recall by field repair crews to facilitate restoration service to UDC customers.

“MEPEC01” – Equipment Configuration Data Type 1

The sequence of fields in this record is:

- I. **Record Type:** *Protocol Text*: Always “MEPEC01”
- II. **Record Version:** *Date (“CCYYMMDD”)*: Currently “19970819”
- III. **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.
- IV. **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.
- V. **Receiver ID:** *Arbitrary Text*: Identify 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.
- VI. **Receiver Customer ID:** *Arbitrary Text*: This is the receiving entity’s 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.
- VII. **Time Stamp:** *Date/Time (“CCYYMMDDHHMM”)*: Date and Time that this record was created.
- VIII. **Record ID:** *Arbitrary Text*: This is an optional field that may be supplied in a request record. The contents of this field will be returned unchanged in the corresponding response record. The length of this text shall not exceed 16 characters.
- IX. **Operation Type:** *Protocol Text*: What kind of operation triggered this record to be transmitted. Defined values are:
 - J. **“UPDATE”** – This is notice of a change in configuration.
 - K. **“UPDATE-ACK”** – Acknowledge configuration change.
 - L. **“UPDATE-NAK”** – Reject configuration change.
 - M. **“REMOVE”** – This is notice of deletion of a configuration entry.
 - N. **“REMOVE-ACK”** – Acknowledge deletion.
 - O. **“REMOVE-NAK”** – Reject deletion.

- P. **"CFG-REQ"** – (SP to UDC) Request configuration records.
- Q. **"CFG"** – This is current configuration, no change has occurred.
- R. **"CFT-NAK"** – Reject a configuration data request.
- X. **Purpose:** *Protocol Text:* Indicates the reason for this data transmission. Defined values are:
 - A. **"OK"** – Normal transmission
 - B. **"RESEND"** – Retransmission of previously sent data.
 - C. **"CORRECT"** – Correction to previously sent data.
- XI. **Comment:** *Arbitrary Text:* An optional field used to supply additional information about the indicated operation. This field is typically used in "NAK" transmissions to indicate the reason for rejecting a request. The length of this field shall not exceed 64 characters.
- XII. **Commodity:** *Protocol Text:* Describes what commodity type this account is for. Defined values are:
 - A. **"E"** – Electricity.
 - B. **"G"** – Gas.
 - C. **"W"** – Water.
 - D. **"S"** – Steam.
- XIII. **Equipment Type:** *Protocol Text:* (Generated by MA) What kind of equipment this record describes. Defined values are:
 - A. **"Meter"** – A meter. When meter and recorder functions are combined in one unit, both "METER" and "RECORDER" equipment type records are supplied for that combined unit.
 - B. **"RECORDER"** – Meter data recorder.
 - C. **"PT"** – A metering potential transformer.
 - D. **"CT"** – A metering current transformer.
- XIV. **Manufacturer:** *Arbitrary Text:* (Generated by MA) Manufacturer's name. Currently, only the first 22 characters of this field will be recognized by PG&E.
- XV. **Model:** *Arbitrary Text:* (Generated by MA) This device's model name or number. Currently, only the first 22 characters of this field will be recognized by PG&E.
- XVI. **Serial Number:** *Arbitrary Text:* (Generated by MA) This device's manufacturer serial number. Currently, only the first 22 characters of this field will be recognized by PG&E.
- XVII. **Identifier:** *Arbitrary Text:* (Generated by MA) An optional identifier to aid visual identification of this device. Currently, only the first 22 characters of this field will be recognized by PG&E.
- XVIII. **Date of purchase:** *Date ("CCYYMMDD"):* (Generated by MA) The date this device was purchased. Month and day values may be estimated.
- XIX. **Date of Installation:** *Date ("CCYYMMDD"):* (Generated by SP) The date this device was installed.
- XX. **Owner:** *Arbitrary Text:* (Generated by SP) Name of entity that owns this device. This field may contain the value "CUSTOMER" to indicate customer ownership else an SP identifier should be used. Currently, only the first 16 characters of this field will be recognized by PG&E.
- XXI. **Parameter Count:** *Numeric Integer:* Indicates the number of Parameter pairs to follow. A maximum of 16 sets is allowed per record.
- XXII. **Parameters:** *Protocol Text and Arbitrary Text pair:* Each parameter entry is a set of two fields. The number of parameter sets is described in the "Parameter Count" field above. The Protocol Text field of each pair contains an identifier for the kind of parameter the following Arbitrary Text describes. The Arbitrary Text field of each pair contains descriptive text. The length of this Arbitrary Text field shall not exceed 30 characters. There are four groups of

parameters, one for Meters, one for Recorders, one for Transformers, and one general purpose group.

1. Defined Protocol Text values for Meters are:
 - **“DEMAND-TYPE”** – What quantity this meter measures. (i.e. KWH, KVARH, CF, etc.) When multiple DEMAND-TYPEs are measured on a single meter, those types are all listed with ASCII space characters (20 Hexadecimal) as separators.
 - **“AMPS”** – Current rating in AMPS.
 - **“VOLTS”** – Voltage rating.
 - **“WIRES”** – The number of wires.
 - **“PHASE”** – Meter Phase.
 - **“KH”** – Meter Kh constant.
 - **“KE”** – Meter Ke constant.
 2. Defined Protocol Text values for Recorders are:
 - **“COMM-TYPE”** – What kind of communications path is used. Examples are “Dial-up”, “Internet”, and “ATT-PCS”.
 - **“PROTOCOL”** – What communications protocol is used. Examples are “MFGR” (manufacturers proprietary protocol), “TCP/IP”, and “C12.XX”.
 - **“FORMAT”** – Data format if different or at higher level than communications protocol.
 - **“ADDRESS”** – Communications network address or dial-up circuit number.
 3. Defined Protocol Text values for Transformers are:
 - **“RATIO”** – Transformer ratio. Expressed as ratio to one.
 - **“PRIMARY”** – Primary Rating in volts or amps.
 - **“INSULATION”** – Insulation voltage class.
 - **“LOCATION”** – Location code for this device. This will typically be “INDOORS” or “OUTDOORS”.
 - **“HI-LO”** – High side, Low side designator. Example values are “HIGH” and “LOW”.
 - **“SINGLE-DUAL”** – Single or Dual configuration designator. Example values are “SINGLE” and “DUAL”.
 4. General Use Protocol Text values are:
 - **“OTHER”** – Other unspecified equipment parameter.
 - **“NOTE”** – General text note.
-

Change History

Version 0.11 – April 24, 1997: First version released for review.

Version 0.12 – June 23, 1997:

- Dave Harrison – PG&E. Changed fields in metering data records, MEPMD01 and MEPMD02, that refer to “ESP” to “SP” (Service Provider) since data may be sent to entities other than Electric Service Providers.
- Mark Budka – SCE, Jim Price – CPUC ORA: Added item 3 in “Specific Business Objectives” above to indicate that California MEP is a transitional piece of electric industry restructuring.
- Jim Price – CPUC ORA: Added paragraph in Metering Service Data Records section describing that monthly readings should be transmitted with both beginning and end of month information.

- Mark Budka – SCE: Added “NO-READ” option to “Reason” field of MEPAD01 to accommodate missed meter read notification. Reason for no read is filled into comment field.
- Mark Budka – SCE: Added comment that a channel number may be used in “Meter ID” field of MEPAD01.
- Nancy Colon – PG&E: Added text in “SP identifier” (was “ESP identifier”) field to indicate that standardized company identifiers will be used when they become available.
- Nancy Colon – PG&E: Added “METER-REQUIRED” status to “Metering Account Status” field in MEPAD01.
- Dave Harrison – PG&E: Added “Type of Service Relationship” field to MEPAD01 to accommodate service Unbundling beyond electric ESP.

Version 0.14 – July 2, 1997:

- Dave Harrison – PG&E: Added MEPAD01 “Type of Service Relationship” protocol text values METER-OWNER, METER-INSTALLER, and METER-READER to subdivide meter agent functions.
- Dave Harrison – PG&E: Renamed MEPAD01 “Metering account status” protocol text values CUST-READY to SP-PENDING and SP-READY to CUST-PENDING to clarify usage.
- Dave Harrison – PG&E: Added MEPAD01 “Billing Option” field to allow specification of billing responsibility.

Version 0.15 – July 17, 1997:

- Dave Presson – PG&E: Added limit to floating-point value range to clarify field interpretation in COBOL based systems. Numeric range to allow describing number in +/-9999999999.99999 format internally.
- Dave Harrison – PG&E: Added description field to MEPBD01 “Component” entries to generalize use of entries. Added “RECURRING” and “ONE-TIME” entry types to cover unanticipated billing items.
- Gary Wescom (author) – PG&E: Added record time stamp to MEPMD01 and MEPMD02 records. This corrects an oversight.
- Nancy Colon – PG&E: Renamed MEPAD01 fields “Metering account start date” to “Metering account effective date” and “Metering account close date” to “Metering account end date”. This was necessary to better match terminology used in state documents.
- Dave Harrison – PG&E: Added MEPAD01 field “Distribution loss indicator”. This field allows UDC to describe distribution distance and or loss factors for distance based billing algorithms.
- Nancy Colon – PG&E: Changed MEPMD01 data quality flag meanings. The “V” for “Validated” category was removed and the description for a blank quality flag entry was changed to say value is “OK” and validated.
- Dave Harrison – PG&E: Increased size of “SP identifier” fields in all records to support California SP identifier scheme.
- Kris Hardie – PG&E: Removed “C” (Corrected) quality flag from MEPMD01 and MDPMD02 “Data” field quality flags. The difference between “A” (Adjusted) and “C” (Corrected) was too vague.
- Kris Hardie – PG&E: Changed label of MEPMD01 and MEPMD02 “Unit of measure” field to simply “Units”. The former is used in other industry documents to mean something somewhat different than what is intended here.

- Susan Sponsel – PG&E: Added new record type MEPEC01, “Equipment Configuration Type 1”. This record is provided to allow meter owners, installers, and maintainers to communicate field hardware configuration to UDCs for emergency repair and disaster recovery use.
- Susan Sponsel – PG&E: Added “Record ID” fields to MEPAD01, MEPBD01, MEPBD02, MEPBD03, and MEPEC01 records. This field allows pairing response records with previously sent request messages.
- Shelly Aires – PG&E: Changed unit abbreviations in “Protocol Text” section. Changed units for situations where customer is generating power from “R...” to “G...”. It appears that some departments in PG&E use RKVA to mean KVAR. RKVA appears to have been a common abbreviation in the past and its incidental use here might cause confusion.
- Shelly Aires – PG&E: Modified MEPMD02 and MEPBD03 TOU records. Improved season designation in both records. Added demand category to pricing plan. Added “TOTAL” category to metering data component list.
- Gary Wescom (author) – PG&E: Added “ACK” operation type to MEPAD01 for protocol completeness.

Version 0.16 – July 31, 1997:

- Roger Treinen – PG&E: Changed the name of this protocol from “PG&E Metering Exchange Protocol” to “California Metering Exchange Protocol”. While PG&E performed most of the initial work on this protocol, it now reflects combined efforts of many separate companies. The new name is more correct.
- Kimberly Hollenbeck – PG&E: Removed MEPAD01 field “Template ID” and replaced it with “Usage Profile” and “SP Rate Name” fields. “Template ID” is no longer considered important. The new fields were identified as necessary in paper walk through of inter-company transactions.
- Dave Harrison – PG&E: Added “MD-REQ”, “MD-ACK”, “BD-REQ”, and “BD-ACK” operation type to MEPAD01 for automating requests from SP for UDC to resend metering and billing data.
- Rowena Hale – PG&E: Added several MEPBD01 standard “Components” types.
- Rowena Hale – PG&E: Added “Plan start date” and “Plan end date” to MEPBD02 and MEPBD03 records.

Version 0.17 – August 1, 1997:

- No changes: Document distributed without this change history.

Version 0.18 – August 11, 1997:

- Kathy Smith – ABB: Updated document to reflect that Metering Agent and Billing Agent activities may now reside outside UDC. References to Metering Agent (MA) and Billing Agent (BA) added.
- Kathy Smith – ABB: Removed “REGISTER” unit type and added specific “KVAHREGISTER”, “KVARHREGISTER”, and “GASREGISTER” units. The ambiguous “REGISTER” entry was proving to be confusing to people.
- Dave Presson – PG&E: Noted that customer usage profiles and billing templates were not specifically mentioned. Added “PROFILE” and “TEMPLATE” values to MEPMD01 “Purpose” field to indicate transmission of this kind of data.
- Dave Presson – PG&E: Generalized MEPBD01 billing component fields by removing specific usage class line types. Replaced these with simple “ELEC-ENERGY” and “GAS-ENERGY” entries and specifying that the Arbitrary Text Field describe the component as printed on bill.

- Dave Presson – PG&E: Removed “Type” field from MEPBD02 record. “Template” and “BILL” usage is no longer applicable.
- Dave Presson – PG&E: Removed “Season identifier”, “Season Begin”, and “Season End” fields from MEPBD02. These fields were redundant to newer “Plan Start Date” and “Plan End Date” fields.
- Dave Presson – PG&E: Changed billing price references from US Cents to US Dollars for consistency between prices and billed amounts.
- Dave Presson – PG&E: Defined Protocol Text fields as having a maximum length of 12 characters, not counting the delimiting comma. Setting a length limit was done to simplify Protocol Text table lookups for protocol conversion activities.
- Dave Presson – PG&E: Shortened some protocol text entries to meet 12 character size limit. Most notable is the shortening of “REGISTER” to “REG” in units abbreviations.
- Kimberly Hollenbeck – PG&E: Added “Flat Rate price” field to MEPBD02 and MEPBD03 records.
- SCE: Replaced “Unique Metering Account Identifier”, “SP Identifier”, and “SP Customer Identifier” with “Sender ID”, “Sender customer ID”, “Receiver ID”, and “Receiver customer ID” in all record types. The original version was UDC centric. This newer approach generalizes the messaging.

UDC/ESP Workshop – August 13, 1997:

- MEPAD01: Changed order of fields for clarity.
- MEPAD01: Changed “Type of Service Relationship” field from single to multi-entry. ESPs did not want to have to send separate DASRs for service type for an account.
- MEPAD01: (SCE) Added “UDC account ID” field to facilitate special contract accounting.
- MEPAD01: (SCE, GMER, SDG&E) Added customer name fields.
- MEPAD01: (SCE) Split address information into separate components.
- MEPAD01: (SCE) Split rate name into UDC rate name and SP rate name.
- MEPAD01: (SCE, GMER, SDG&E) Added customer phone and FAX fields.
- MEPAD01: (SCE, SDG&E) Added “Renewable Energy” field.
- MEPAD01: Changed Meter ID and configuration fields to allow up to 12 meters to be defined.
- MEPAD02: (SCE) Added new “MEPAD02”, credit data type record.
- MEPMD01: (PG&E) Added “Meter ID” field.
- MEPMD02: (PG&E) Added “Meter ID” field.
- MEPBD01: (SDG&E) Added “Meter ID” field.
- MEPBD01: Added “Payment” and “Uncollectable” to “Purpose” field.
- MEPBD01: (PG&E) Split usage units and value fields into electric and gas units and value fields.
- MEPBD02: (PG&E) Deleted “Season ID”, “Season Begin”, “Season End”, and “Day” fields. These fields were unnecessary for interval pricing.
- MEPLF01: (SCE) Added new “MEPLD01”, electric distribution loss factors record.

Version 1.00 – August 19, 1997: FIRST RELEASE

- Changed all “Record Versions” from “19970401” to “19970819”.

Version 1.01 – August 22, 1997:

- Tom Brecken – NCPA: Added “ELEC-SCE” for electric scheduling coordinators to MEPAD01 “Type of service relationship” field.

- Ruth Jenkins – PG&E: Corrected difference in spelling in “Type of service relationship” field between MEPAD01 and MEPAD02.

Version 1.10 – September 18, 1997:

- Roger Treinen – PG&E: Replaced “Distribution Loss Designator” field with “DLF type” field in to MEPLF01. This was done to match DLF working group submittal to CPUC.
- Roger Treinen – PG&E: Removed “Distribution loss designator” field from MEPAD01. This field was no longer needed.
- Roger Treinin – PG&E: Changed the length of the “Meter Congestion Zone” field in MEPAD01 from 4 to 20 characters to accommodate complex encoding of distribution information.
- Roger Treinin – PG&E: Added new “Service Category” field to MEPAD01. This was done to allow description of service feed voltage.
- Roger Treinin – PG&E: Added new “UDC ID” field to MEPAD01. This field was necessary to match accounts with UDC specific loss factions.
- Tom Brake – PG&E: Clarified handling of leading and trailing blank characters in fields. Changed “Specific Protocol Features” to indicate that leading and trailing blanks will be ignored unless the field is enclosed in quotes. The handling of white space is ambiguous without this note.
- Ruth Jenkins – PG&E: Changed “SP-PEND”, “CUST-PEND”, and “MTR-REQ” account status values to “PEND-ST”, “PEND-CUS”, and “PEND-MTR” to simplify mainframe programming.
- Stephanie Liecht – PG&E: Deleted “MEPAD01 – Example Operations” section. This section was superseded by other documents.
- Changed MEPAD01 “Record Version” to “19970912”.
- Changed MEPLF01 “Record Version” to “19970912”.

Utility Industry Group Implementation Guideline

for

Electronic **D**ata **I**nterchange

TRANSACTION SET

867

Product Transfer and Resale Report

Ver/Rel 003060

Acid Rain Allowance Transfer Reporting to the U.S. EPA

JUNE 1998

Summary of Changes

June 16, 1998 Initial release.

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867 Product Transfer and Resale Report

Introduction

The function of the Utility Industry Group is

To represent Electric, Gas, and Combination Utilities, their suppliers, their customers, and other interested parties as an Industry Action Group to the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12, specifically in the standards-setting process, for their Electronic Data Interchange business needs.

To encourage, promote, and establish conventions for the use of ASC X12 standards as the "recommended" method of EDI. To develop and coordinate, as required, implementation guidelines and tools to promote the growth and timely implementation of Electronic Commerce/EDI within the industry.

To provide a forum for the exchange of ideas related to Electronic Commerce/EDI and its influence on the business needs of the industry.

The UIG will represent the Edison Electric Institute (EEI) and its members to facilitate implementation of Electronic Commerce/EDI in the Utility Industry.

Purpose

This Utility Industry Group (UIG) Implementation Guideline contains the format and establishes the data contents of the Product Transfer and Resale Report Transaction Set (867) as adopted by the UIG for use within the context of an Electronic Data Interchange (EDI) environment.

Notes

This implementation of the transaction set is used by the utility industry to report the transfer of acid rain allowances between Allowance Tracking System (ATS) accounts. The report is transmitted to the [U.S. Environmental Protection Agency Acid Rain Division](#), which records the transfer of allowances between accounts. The intent of this transaction is to replace the paper form used to report such transfers, EPA Form 7610-6. Consequently, only those segments and elements necessary to convey the information required by the paper form have been included in this guideline.

Guidance for Allowance Tracking System Account Holders

Introduction

Currently, the Environmental Protection Agency (EPA) receives Acid Rain Allowance Transfer transactions on a standard paper form, EPA Number 7610-6. These are sent from Allowance Tracking System (ATS) account holders to EPA. The forms are filled out by the Transferor and Transferee and sent to EPA's Acid Rain Division in Washington, D.C. There, the data is entered into an EPA database.

Over the past year, EPA has been preparing an alternative to the paper forms. This alternative method eliminates the paper and transmits the Allowance Transfer Transactions via Electronic Data Interchange (EDI).

To establish EDI for Allowance Transfers, EPA and representatives from the Utility industry have worked together to create this *Utility Industry Group Implementation Guideline for EDI Transaction 867*. This Implementation Guideline describes the data fields that EPA must receive and shows their layout in the EDI format.

The Utility Industry Group selected the Transaction 867 format from among the several hundred transactions currently defined for Electronic Data Interchange. The generic purpose of Transaction 867 is the Product Transfer and Resale Report and therefore the segments and data fields of this transaction fit the Allowance Transfer function very closely. The purpose of this Utility Industry Implementation Guideline is to define the specific segments and fields that should be used to transmit an Allowance Transfer, and the codes that should be put into those fields.

The Current Paper Form for Allowance Transfers

The current method of sending Allowance Transfer data to EPA is via a two-sided paper form, EPA No. 7610-6. This is completed by Authorized Account Representatives for the transferor and transferee, and sent to the Acid Rain Division for data entry. The form identifies the ATS account numbers of the transferor and transferee — the two trading partners. For each partner, the form includes the Authorized Representative's name, the Representative's ID Number, and the Representative's signature and phone numbers. On the back side of the form (Page 2 of the form), the main feature is a grid where Allowance serial numbers are written. This grid includes the starting and ending serial number in each block traded, and a "total" field where the count of Allowances is written. Near the top of Page 2 is the "perpetuity indicator," which shows whether the serial numbers written in the grid are being traded only for the year shown or for all future years as well.

Development of Electronic Data Interchange for Allowance Transfers

Electronic Data Interchange transactions are created and maintained as national standards by the X12 Committee of the American National Standards Institute. To tailor a general-purpose transaction for a specific use, a design committee must select a subset of all the data segments and data fields available within the formal transaction definition, and specify exactly what values should be stored in each field, and what those values mean in the specific application. These instructions are then written up into an "Implementation Guideline."

EDI transaction 867 is titled *Product Transfer and Resale Report*. It was selected for communicating Allowance Transfer transactions because its segments and data fields closely match what is needed for Allowance Transfers. The Utility Industry Group created the *Implementation Guideline for EDI 867*. A number of electric power generating companies participate in this Group, along with EPA. A copy of the current version of the Implementation Guideline can be found on the Utility Industry Group web site at <http://www.uig.org>.

Using Transaction Set 867 to Send Allowance Transfers to EPA

As of January 1998, EPA is seeking ATS account holders who would like to participate in Phase 1 of production use of EDI 867. Candidate companies are expected to already possess and operate EDI software, and to have EDI-knowledgeable staff members who can assist the Allowance Transfer Department in setting up Electronic Data Interchange for this purpose.

A participating company must have some way to generate the data for an Allowance Transfer Transaction, in a computer-readable format. This could be done with a PC-based tool such as Sterling Gentran Smartforms, where the transaction is created on a PC, or the company may already have their transactions recorded on a mainframe or a UNIX-based system. After the data is originated on a PC, workstation, or mainframe, an Applications Interface must be set up to deliver the Allowance Transfer data to the company's Electronic Data Interchange Translator. The Translator software may run on a mainframe, workstation, or PC. After the data is translated into EDI 867 format, it must be put into a mailbox for transmission over a Value-Added EDI network (VAN). The VAN will deliver the transactions to EPA's EDI mailbox.

EPA currently uses AT&T as its Value-Added Network (VAN). All EDI transactions bound for EPA travel over the AT&T network, to a mailbox whose contents are regularly downloaded to EPA's IBM mainframe. On the network, EPA's EDI qualifier is **16** and EPA's ID code is **057944910002P**. At this time, EPA is able to receive transactions only via VANs.

During Phase 1 of production use, EPA will print incoming EDI 867 transactions and merge them with data transfer requests coming in via the existing paper forms. Phase 1 might continue for approximately six months, while EPA evaluates industry interest in sending Allowance Transfer data electronically. EPA may then undertake a Phase 2 development process which will further automate the process of taking data received via EDI and moving it into storage in the ATS database on the mainframe.

To assist utilities or brokers in setting up the EDI 867 process, the EPA has published a *Guide for Allowance Tracking System Account Holders and Guide for Daily Operations at EPA*. For further information or to begin sending EDI 867 transactions to EPA contact:

Mr. Alex Salpeter, Acid Rain Division of the U.S. EPA, at (202) 564-9157, or at salpeter.alex@epamail.epa.gov, or at the U.S. EPA, Mailstop 6204J, 401 M Street SW, Washington, D.C., 20460.

867 Product Transfer and Resale Report

Best Practices

Global Best Practices

Use of Text Segments

- The UIG recommends that the note (NTE) segment be avoided because this segment is not machine-readable. Other text segments, such as MSG and PID, may be used if their use will lead to machine processable information in subsequent applications.

Use of ZZ Qualifier

- The use of data fields to transmit uncoded or textual information should be avoided. This practice is usually associated with the use of the ZZ qualifier as a normal course of doing business.

997 - Functional Acknowledgment

- The purpose of the 997 is to verify receipt of a transmitted document only, not the acceptance of the document. For example, the acceptance of a purchase order (850) is accomplished through the use of the purchase order acknowledgment transaction (855).

Interchange Control Number

- A unique and sequential interchange control number should be used on every envelope that is transmitted to a trading partner. This approach will allow the receiver to audit the interchange for any duplicate or missing transmissions.

Use of Dun & Bradstreet (D-U-N-S) Number

- Dun & Bradstreet assigns a nine-digit identification number to every business entity. This number, known as the D-U-N-S number, should be used to identify the trading partners. A trading partner may append a four-digit suffix to the D-U-N-S number to uniquely identify a specific location within the entity; this number is referred to as a D-U-N-S + 4 number

Banking Transactions

- Guidelines that outline the use of transactions relating to interactions between a sender and the sender's financial institution are available from the Bankers EDI Council and the NACHA EDI Council. Other publications that address the use of financial payment transactions include Technical Report 1 (TR1) and Technical Report 2 (TR2); both of these publications are available from DISA.

Capitalization

- The use of all upper case (capital) letters is preferred over the use of mixed upper and lower case letters.

Document-Specific Best Practices

General Usage

- This transaction is initiated by the Transferor of the allowances and is transmitted directly to the U.S. EPA. A duplicate copy of the transaction should be transmitted to the Transferee also.

Use of The PTD Segment

- PTD06 is used to indicate whether the block of allowances is being transferred for only one "use year" (not in perpetuity) or for a "use year" and all subsequent "use years" (in perpetuity). A single 867 transaction set may address only one type of transfer; i.e., a transfer in perpetuity **OR** a transfer not in perpetuity. It is not permissible to attempt to transmit both types of transfers within one transaction set.

Use of The LIN Segment

- LIN03 and LIN05 are used to identify the beginning and ending serial numbers respectively for a block of allowances. Beginning and ending serial numbers must be sent in all cases, even if only one allowance is being transferred. Repeat the PTD/QTY loop as necessary if multiple, non-contiguous blocks of allowance serial numbers are being transferred.

Use of the CTT Segment

- The hash total of CTT02 is the sum of all of the QTY02 values and represents the total number of allowances being transferred.

867 Product Transfer and Resale Report

Functional Group ID=**PT**

Heading

Pos. No.	Seg. ID	Name	Req. Des.	Max. Use	Loop Repeat	Notes and Comments
Must Use 010	ST	Transaction Set Header	M	1		
Must Use 020	BPT	Beginning Segment for Product Transfer and Resale	M	1		
LOOP ID - N1						5
Must Use 080	N1	Name	O	1		
LOOP ID - PER						>1
Must Use 130	PER	Administrative Communications Contact	O	1		

Detail

Pos. No.	Seg. ID	Name	Req. Des.	Max. Use	Loop Repeat	Notes and Comments
LOOP ID - PTD						>1
Must Use 010	PTD	Product Transfer and Resale Detail	M	1		
LOOP ID - QTY						>1
Must Use 110	QTY	Quantity	O	1		
Must Use 120	LIN	Item Identification	O	1		

Summary

Pos. No.	Seg. ID	Name	Req. Des.	Max. Use	Loop Repeat	Notes and Comments
LOOP ID - CTT						1
Must Use 010	CTT	Transaction Totals	O	1		n1
Must Use 030	SE	Transaction Set Trailer	M	1		

Transaction Set Notes:

1. The number of line items (CTT01) is the accumulation of the number of LIN segments. The hash total (CTT02) is the total number of allowances being transferred, which is equal to the sum of the QTY02 quantities.

Segment: **ST** Transaction Set Header
Position: 010
Loop:
Level: Heading:
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of a transaction set and to assign a control number
Syntax Notes:
Semantic Notes: 1 The transaction set identifier (ST01) used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the Invoice Transaction Set).
Comments:

Data Element Summary				
	<u>Ref. Des.</u>	<u>Data Element</u>	<u>Name</u>	<u>Attributes</u>
Must Use	ST01	143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set 867 X12.33 Product Transfer and Resale Report	M ID 3/3
Must Use	ST02	329	Transaction Set Control Number Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set	M AN 4/9

Segment: **BPT** Beginning Segment for Product Transfer and Resale
Position: 020
Loop:
Level: Heading:
Usage: Mandatory
Max Use: 1
Purpose: To indicate the beginning of the Product Transfer and Resale Report Transaction Set and transmit identifying data
Syntax Notes:
Semantic Notes: 1 BPT02 identifies the transaction number.
 2 BPT03 identifies the transaction date.
Comments:

Data Element Summary

	<u>Ref. Des.</u>	<u>Data Element</u>	<u>Name</u>	<u>Attributes</u>
Must Use	BPT01	353	Transaction Set Purpose Code Code identifying purpose of transaction set	M ID 2/2
			00 Original Used when transmitting a report to the U.S. EPA	
			07 Duplicate Used when transmitting a copy to the Transferee	
Used	BPT02	127	Reference Identification Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier A unique transaction identification number assigned by the transferor.	O AN 1/30
Must Use	BPT03	373	Date Date (YYMMDD) The transaction creation date.	M DT 6/6

Segment: **N1** Name
Position: 080
Loop: N1
Level: Heading:
Usage: Must Use
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes:
 1 At least one of N102 or N103 is required.
 2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments:
 1 This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
 2 N105 and N106 further define the type of entity in N101.
Notes: Two occurrences of this segment must be sent - one to identify the transferor (Z6) and one to identify the transferee (TT).

Data Element Summary

Ref. Des.	Data Element	Name	Attributes
Must Use	N101	98 Entity Identifier Code Code identifying an organizational entity, a physical location, or an individual TT Transfer To Z6 Transferring Party	M ID 2/2
Must Use	N103	66 Identification Code Qualifier Code designating the system/method of code structure used for Identification Code (67) EP U.S. Environmental Protection Agency (EPA)	X ID 1/2
Must Use	N104	67 Identification Code Code identifying a party or other code ATS Account Number	X AN 2/20

Segment: PER Administrative Communications Contact

Position: 130

Loop: PER

Level: Heading:

Usage: Must Use

Max Use: 1

Purpose: To identify a person or office to whom administrative communications should be directed

- Syntax Notes:**
- 1 If either PER03 or PER04 is present, then the other is required.
 - 2 If either PER05 or PER06 is present, then the other is required.
 - 3 If either PER07 or PER08 is present, then the other is required.

Semantic Notes:

Comments:

Notes: Two occurrences of this segment must be sent - one in the transferor N1 loop to identify the transferor's Authorized Account Representative and one in the transferee N1 loop to identify the transferee's Authorized Account Representative.

Data Element Summary

	<u>Ref.</u>	<u>Data</u>	<u>Attributes</u>
	<u>Des.</u>	<u>Element</u> <u>Name</u>	
Must Use	PER01	366 Contact Function Code Code identifying the major duty or responsibility of the person or group named AA Authorized Representative	M ID 2/2
Must Use	PER02	93 Name Free-form name Full name of the Authorized Account Representative.	O AN 1/35
Must Use	PER09	443 Contact Inquiry Reference Additional reference number or description to clarify a contact number US EPA-issued identification number for the Authorized Account Representative.	O AN 1/20

Segment: **PTD** **Product Transfer and Resale Detail**
Position: 010
Loop: PTD
Level: Detail
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of detail information relating to the transfer/resale of a product and provide identifying data

Syntax Notes:
 1 If either PTD02 or PTD03 is present, then the other is required.
 2 If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes:

Comments:

Notes: A transaction may address only one type of transfer; i.e., a transfer in perpetuity OR a transfer not in perpetuity. It is not permissible to attempt to transmit both types of transfers within one transaction set.

Data Element Summary

Ref.	Data	Element	Name	Attributes
Must Use	PTD01	521	Product Transfer Type Code Code identifying the type of product transfer	M ID 2/2
			BJ Relocation Reallocation among sources within a business entity.	
			BR Exchange An exchange with no consideration.	
			CS Contract Sale A sale for consideration.	
Must Use	PTD06	486	Product Transfer Movement Type Code To indicate the type of product transfer movement This element is used to transmit the perpetuity indicator.	O ID 2/2
			AO Adjustment Out This code is used to indicate that the transfer IS NOT in perpetuity.	
			TO Transfer Out This code is used to indicate that the transfer IS in perpetuity.	

Segment: **QTY** Quantity
Position: 110
Loop: QTY
Level: Detail:
Usage: Must Use
Max Use: 1
Purpose: To specify quantity information
Syntax Notes:
Semantic Notes:
Comments:

Notes: Repeat the PTD/QTY loop as necessary if multiple, non-contiguous blocks of allowance serial numbers are being transferred.

Data Element Summary

	<u>Ref.</u>	<u>Data</u>	<u>Attributes</u>
	<u>Des.</u>	<u>Element</u> <u>Name</u>	
Must Use	QTY01	673 Quantity Qualifier Code specifying the type of quantity V3 Transfer Quantity	M ID 2/2
Must Use	QTY02	380 Quantity Numeric value of quantity	M R 1/15
Must Use	QTY03	355 Unit or Basis for Measurement Code Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken EA Each	M ID 2/2

Segment: **LIN** Item Identification
Position: 120
Loop: QTY
Level: Detail:
Usage: Must Use
Max Use: 1
Purpose: To specify basic item identification data
Syntax Notes: 1 If either LIN04 or LIN05 is present, then the other is required.
Semantic Notes: 1 LIN01 may be used as a line counter.
Comments:

Data Element Summary

Ref.	Data			
<u>Des.</u>	<u>Element</u>	<u>Name</u>	<u>Attributes</u>	
LIN01	350	Assigned Identification	O	AN 1/20
		Alphanumeric characters assigned for differentiation within a transaction set May be used as a line counter.		
Must Use	LIN02	Product/Service ID Qualifier	M	ID 2/2
		Code identifying the type/source of the descriptive number used in Product/Service ID (234) SN Serial Number		
Must Use	LIN03	Product/Service ID	M	AN 1/40
		Identifying number for a product or service Starting allowance serial number.		
Must Use	LIN04	Product/Service ID Qualifier	X	ID 2/2
		Code identifying the type/source of the descriptive number used in Product/Service ID (234) SN Serial Number		
Must Use	LIN05	Product/Service ID	X	AN 1/40
		Identifying number for a product or service Ending allowance serial number. Beginning and ending serial numbers must be sent in all cases, even if only one allowance is being transferred.		

Segment: **CTT** Transaction Totals
Position: 010
Loop: CTT
Level: Summary:
Usage: Must Use
Max Use: 1
Purpose: To transmit a hash total for a specific element in the transaction set
Syntax Notes:
Semantic Notes:
Comments: 1 This segment is intended to provide hash totals to validate transaction completeness and correctness.

Notes: The number of line items, CTT01, is the number of LIN segments. The hash total, CTT02, is the total number of allowances being transferred, which is equal to the sum of the QTY02 quantities.

Data Element Summary

Ref.	Data		
<u>Des.</u>	<u>Element</u>	<u>Name</u>	<u>Attributes</u>
Must Use	CTT01	354	Number of Line Items M NO 1/6
			Total number of line items in the transaction set
			Number of LIN segments.
Must Use	CTT02	347	Hash Total O R 1/10
			Sum of values of the specified data element. All values in the data element will be summed without regard to decimal points (explicit or implicit) or signs. Truncation will occur on the left most digits if the sum is greater than the maximum size of the hash total of the data element.

Example:

-0018	First occurrence of values being hashed.
.18	Second occurrence of values being hashed.
1.8	Third occurrence of values being hashed.
<u>18.01</u>	Fourth occurrence of values being hashed.

18+18+18+1801=1855 Hash total prior to truncation.

Sum of the QTY02 quantities.

Segment: **SE** Transaction Set Trailer
Position: 030
Loop:
Level: Summary:
Usage: Mandatory
Max Use: 1
Purpose: To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning (ST) and ending (SE) segments)
Syntax Notes:
Semantic Notes:
Comments: 1 SE is the last segment of each transaction set.

Data Element Summary

	<u>Ref.</u>	<u>Data</u>	<u>Attributes</u>
	<u>Des.</u>	<u>Element Name</u>	
Must Use	SE01	96 Number of Included Segments	M NO 1/10 Total number of segments included in a transaction set including ST and SE segments
Must Use	SE02	329 Transaction Set Control Number	M AN 4/9 Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set

Example Transaction Data

ST~867~0001

This is the start of an 867 transaction with a control number of 0001.

BPT~00~1234567~980616

This is an original transaction. The reference number for this transaction is 1234567. The transaction was created on June 16, 1998.

N1~Z6~~EP~999988880333

The transferring utility's ATS account number is 999988880333.

PER~AA~JOHN ADAMS~~~~~101010

The transferor's Authorized Account Representative is John Adams. His identification number is 101010.

N1~TT~~EP~999977770222

The transferee's ATS account number is 999977770222.

PER~AA~THOMAS JEFFERSON~~~~~989898

The transferee's Authorized Account Representative is Thomas Jefferson. His identification number is 989898.

PTD~CS~~~~~AO

This transaction is a sale of allowances for consideration. The transfer is for one "use year" only, not in perpetuity.

QTY~V3~500~EA

500 allowances are being transferred in this block.

LIN~001~SN~2010-00000001~SN~2010-00000500

The serial numbers for this block of 500 allowances start at 2010-00000001 and end at 2010-00000500.

PTD~CS~~~~~AO

A second PTY/QTY/LIN loop is necessary because the blocks of allowances are not contiguous.

QTY~V3~176~EA

176 allowances are being transferred in this block.

LIN~002~SN~2010-00000525~SN~2010-00000700

The serial numbers for this block of 176 allowances start at 2010-00000525 and end at 2010-00000700.

CTT~2~676

The number of line items (LIN segments) is 2. The hash total (sum of the QTY02s) is 676.

SE~14~00001

There are fourteen segments in the transaction. The control number is 0001.

FIELD DEFINITIONS OF TEST DATA

The following is the file format and the field definitions of the test data.

G. Account Data – 1 per test data file.

Cust Acct # – The UDC’s identification reference for the account to which the record applies. This maps to field number 6, Receiver customer ID, in the MEPMD01 format. For SCE, this is the CSS Service account number.

Recorder Meter ID – The identification number for a data recorder. This maps to field number 8, Meter ID, in the MEPMD01 format.

Usage Start Date – The date (“CCYYMMDD”) to which the first interval value applies. This maps to the first date value of field number 15, Data, in the MEPMD01 format.

Usage Start Time – The time (“HHMM”) to which the first interval value applies. This maps to the first time value of field number 15, Data, in the MEPMD01 format.

Usage End Date – The date (“CCYYMMDD”) to which the last interval value applies. This maps to the last date value of field number 15, Data, in the MEPMD01 format.

Usage End Time – The time (“HHMM”) to which the last interval value applies. This maps to the last time value of field number 15, Data, in the MEPMD01 format.

Usage Interval – The time (“MMDDHHMM”) interval between pulse readings. This maps to field number 13, Interval, in the MEPMD01 format.

Usage Interval Time Indicator – This indicates whether the Usage Start Time and Usage End Time values reflect the start or end of the interval. The values will be “Start” or “End”.

II. Channel Data – 1 for each channel on the recorder.

Pulse Multiplier – The calculation factor used to convert pulse values to engineering units. This maps to field number 12, Calculation Constant, in the MEPMD01 format.

Meas Type Code – The unit of measurement of the interval values. This maps to field number 11, Units, in the MEPMD01 format.

III. Meter Data – 1 for each meter on a channel.

Meter ID – The identification number for a meter.

Start Read – The start reading value of the meter.

Start Read Date – The date (“CCYYMMDD”) to which the start reading of the meter applies.

Start Read Time – The time (“HHMM”) to which the start reading of the meter applies.

End Read – The end reading value of the meter.

End Read Date – The date (“CCYYMMDD”) to which the end reading of the meter applies.

End Read Time – The time (“HHMM”) to which the end reading of the meter applies.

Meter Multiplier – The calculation factor used to convert meter readings to engineering units.

Num Dials – The number of dials for a meter.

IV. Usage Data – 1 set per channel.

Value – The interval data value. This maps to the numeric floating-point portion of field number 15, Data, in the MEPMD01 format. SCE will provide this value in pulses. Other UDCs may use engineering units.

Note: The Date/Time timestamps are in PST (PACIFIC STANDARD TIME) and are at the start of the interval.

Filename	Customer Acct #	Channel	Problem	Action
ES2-1342_1	21342	KVARH	None	Verifiable
ES2-1342_1	21342	KWH	None	Verifiable
ES2-1793_1	21793	KVARH	Spike	Verifiable
ES2-1793_1	21793	KWH	None	Verifiable
ES6-29_1	629	KWH	None	Verifiable
ES6-196_1	6196	KWH	None	Verifiable
ES5-456_1	5456	KWH	None	Verifiable
ES5-456_1	5456	KVARH	None	Verifiable