Decision _____

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Proposed Policies Governing Restructuring California's Electric Services Industry and Reforming Regulation.	Rulemaking 94-04-031 (Filed April 20, 1994)
Order Instituting Investigation on the Commission's Proposed Policies Governing Restructuring California's Electric Services Industry and Reforming Regulation.	Investigation 94-04-032 (Filed April 20, 1994)

OPINION REGARDING THE LOAD PROFILING WORKSHOP REPORT AND ITS SUPPLEMENTS

I. Summary

In Decision (D.) 97-05-040, the Commission authorized the use of load profiles for direct access, in lieu of requiring meters capable of providing hourly data, for customers with a maximum demand of less than 20 kilowatts (kW). The decision also left open the issue of whether load profiles should be permitted for customers with a maximum demand of 20 to 50 kW. D.97-05-040 ordered that a workshop be held to address these issues.

Today's decision approves the use of the interim load profiling approach proposed by Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (Edison). This approach is to remain in effect until July 1, 1998, when these three utilities will be required to use dynamic load profiles for most eligible load profile customer rate schedules.

The decision also adopts the interim blanket exemption proposal of PG&E and SDG&E. This permits customers with a maximum demand of 20 to 50 kW to participate in direct access through the use of load profiles until September 30, 1998, unless further extended by the Commission. These profiles shall be available for use no later than January 1, 1998. Today's decision also clarifies that only the utility distribution company (UDC) may be the provider of the metering and meter services to such customers during 1998.

The decision also recognizes that there are a number of other load profiling issues which need to be addressed in 1998. These outstanding issues include: who can create and design load profiles; to what extent should segmentation be allowed; should the inconsistencies in determining who is eligible for load profiles be resolved; should additional metering at certain transmission and distribution points be required; and what type of monitoring data should be retained so as to assess the impact of the metering requirement on load profile customers. These issues shall be explored in

further workshops, and if needed, evidentiary hearings will be held to resolve these issues.

II. Background

In D.97-05-040, the Commission ordered the investor-owned electrical corporations to hold a workshop with other interested parties to develop statistical load profile methodologies.[1] We noted the following:

> "The load profile will be used by the scheduling coordinator or marketer to determine the customer's hourly consumption. The load profile will also be used by the ISO [independent system operator] to determine the generation the scheduling coordinator must provide….
>
> "We will allow residential customers, small and medium size commercial and agricultural customers, and other customers, whose accounts have a maximum demand of less than 20 kW to engage in direct access transactions through use of statistical load profiles. The ability to use statistical load profiles to estimate the hourly consumption of small accounts, instead of requiring hourly interval meters for all direct access contracts, will facilitate the aggregation of small accounts and small customers." (D.97-05-040, p. 40, fn. omitted.)

A pre-workshop meeting was held on May 23, 1997, to identify the workshop issues and parties that were interested in presenting proposals at the workshop. The workshop was held on June 5, 1997. At the workshop, the UDCs presented a proposal for developing and using load profiles beginning on January 1, 1998. Thirteen other parties also presented proposals at the workshop. Those proposals were made available to other parties on the direct access implementation web site of the Office of Ratepayer Advocates (ORA).[2] A member of the Board of Governors of the Independent System Operator (ISO) was also invited to address the workshop participants on how statistical load profiles would impact the ISO and the power exchange (PX). The "Report On

[1] We refer to these electrical corporations in this decision as the utility distribution companies or UDCs.

[2] The web site address is: http://162.15.5.2/.

June 5, 1997 Direct Access Workshop On Load Profiling" (Workshop Report) was prepared by PG&E, SDG&E, and Edison and filed with the Commission on June 16, 1997.

During the June 5, 1997 workshop, PG&E, SDG&E, and Edison agreed to make load profile data available for current rate categories on August 1, 1997. (Workshop Report, p. 12.) In addition, the attendees at the workshop agreed to meet again to discuss the issue of whether customers whose peak demand falls between 20 to 50 kW should be exempt from the direct access metering requirement. (Workshop Report, pp. 27-28.)[3]

A subsequent meeting was held July 16, 1997 to discuss whether an exemption from the metering requirement should apply to customers with a maximum demand of 20 to 50 kW. The UDCs filed the "Supplement To The Report On The June 5, 1997 Direct Access Workshop On Load Profiling: Eligibility Issues" (Eligibility Supplement) on July 25, 1997. The Eligibility Supplement addresses what should be done with customers who fall in the 20 to 50 kW range. Comments to the Eligibility Supplement were filed by several of the parties on August 8, 1997.

On August 11, 1997, Edison filed a motion to accept its comments to the Eligibility Supplement one day out of time. Its comments were attached to the motion. According to the motion, Edison's comments were ready to be filed on August 8, but due to traffic problems, the comments were not timely submitted to the Commission's Los Angeles office. No one has objected to Edison's motion. We will grant Edison's motion and direct the Docket Office to file Edison's comments to the Eligibility Supplement as if it was filed on August 11.

On August 1, 1997, the UDCs filed the "Supplement To The Report On The June 5, 1997 Load Profiling Workshop: Pro Forma Load Profiles" (Profiles Supplement). The Profiles Supplement provided notice that the load profile data for current rate

[3] D.97-05-040 directed that the workshop address whether load profiles should be developed for customers whose maximum demand is equal to or greater than 20 kW but less than 50 kW.

categories were being made available to interested parties, and that the data files were being posted on ORA's web site. The Profiles Supplement also discussed the content and format of the data files that were released.

III. Load Profiling Workshop Report And Supplements

A. Introduction

The load profiling workshop had several objectives. In addition to developing statistical load profile methodologies, the workshop addressed a process for updating and revising statistical load profiles, ways in which load profiles can be made more accurate, and whether load profiles should be developed for certain kinds of customers whose maximum demand is greater than or equal to 20 kW but less than 50 kW.

D.97-05-040 permits customers with maximum demands of less than 20 kW to participate in direct access through load profiling. The UDCs proposed at the workshop that the Commission adopt the UDCs' approach for developing and implementing load profiles as an interim measure. The UDCs propose to create load profiles in existing rate categories that are based on daily load shapes. The load shapes would be derived from the UDCs' existing systems, procedures, load research meters, and samples. The UDCs propose that the 20 kW threshold be determined using existing rate schedule breakpoints. When existing rate breakpoints are not aligned with the 20 kW threshold, in most cases, the UDCs propose to screen the 1996 billing data for demand of less than 20 kW.

The Workshop Report states that this approach builds on proven techniques borrowed from current ratemaking practices, and that the implementation of this proposal is straightforward, cost-effective, and achievable by January 1, 1998.

The UDCs' proposal calls for a single load profile to be used for all customers in a rate category, regardless of whether the customer takes service from the UDC or a retailer. Thus, the UDCs would create load profiles for the existing rate categories, and provide this information to all retailers. If a customer chooses another retailer, then the same load profile would still apply to this customer.

The Workshop Report indicates that some of the workshop participants disagree with various aspects of the UDCs' proposal. They believe that the Commission should direct the UDCs to modify their proposed implementation of load profiling by January 1, 1998, or as soon as practical thereafter.

B. Load Profile Methodologies

1. Introduction

The parties participating in the workshop generally agree with the UDC definition that load profiling is the process of taking the cumulative kilowatt-hour (kWh) usage of a customer over a billing cycle and assigning it to individual hours in the cycle, based on the aggregate characteristics of the customer segment in which the customer resides. The Workshop Report notes that several parties would clarify this definition by stating that statistically valid methods would be used in the assignment process. The Environmental Defense Fund would base the assignment of usage on an estimate of the time pattern of the customer's proportionate energy usage, rather than the aggregate characteristics of the customer segment.

The UDCs' load profile design involves the use of daily load shapes by hour, which the UDCs will make available to all applicable parties. The daily load shapes will consist of hourly kW loads for each applicable load profiling category, or equivalent normalized values. The UDCs propose to use various load profiling methodologies to develop daily load shapes from load research data that is currently available or can be readily developed. The specific methods that they plan to use will vary by utility and by rate category within each utility.

The methods that the UDCs plan to use are dynamic load profiles, static load profiles, and deemed load profiles. Dynamic load profiles are created by reading the load research meters on a daily basis, and producing daily load shapes which reflect the actual usage for that customer segment for the day. Edison proposes to use dynamic load profiles for its Domestic and GS-1 (small commercial and industrial) classes.

Static load profiles are created by averaging historical data from load research samples by class, and creating load shapes that approximate customer segment usage for the given day. Static load shapes are fixed in advance. They can be differentiated by season, month, and day. PG&E and SDG&E propose to use static load profiles for the majority of their rate categories. PG&E's load profiles use three years' worth of data to create average load profiles that smooth out unusual operating characteristics for any particular year. SDG&E and Edison propose to use similar methods to develop their static load profiles.

Deemed load profiles are created by using engineering estimates to create daily load shapes. This method is used for those rate schedules with predictable loads, such as street lights and traffic control devices, where metering may not be available.

The UDCs agreed to provide the load profile information for all applicable load profile categories to the appropriate market participants. This information was made available by PG&E, SDG&E, and Edison on August 1, 1997 by electronic distribution to interested parties, and posted on ORA's web site. PG&E, SDG&E, and Edison request that the Commission approve the load profiles for interim use starting on January 1, 1998.

The following are the listings of the rate schedules PG&E, SDG&E, and Edison propose be eligible for load profiling, and the type of load profile method that they propose to use.

PG&E[4]

Class	**Eligibility**	**Estimation Method**
Residential	E-1, E-7, E-8 (All residential schedules)	Static
Small Commercial	A-1, A-6 (All small commercial schedules)	Static
Medium Commercial	A-10, E-19V screened for demands < 20 kW	Static
Agriculture	<35 hp connected load or "A" schedules	Static
Traffic Control Devices	TC-1	Deemed
PG&E-Owned Streetlights	LS-1	Deemed

[4] For PG&E customers who have a demand metered account, PG&E proposes to screen annually for accounts with maximum demands of less than 20 kW in nine of the last twelve billing cycles.

SDG&E[5]

Class	**Eligibility**	**Estimation Method**
Domestic	All residential rate schedules	Static
Small Commercial:	Schedules A, A-TC	Static
Large Com/Ind.	Schedules A-TOU, AL-TOU, AO-TOU, and AY-TOU	Static
Agricultural	Schedules PA, PA-TOU	Static
Lighting	Schedules LS-1, LS-2, LS-3, OL-1	Deemed

[5] SDG&E proposes to screen annually for accounts with maximum demand of less than 20 kW, or if no demand meter is present, with usage of less than 12,000 kWh in each of the previous twelve billing cycles.

Edison[6]

Class	Eligibility	Estimation Method
Domestic	D (includes all schedules except DMS)	Dynamic
Domestic (master metered)	DMS	Static
Small Commercial and Industrial	GS-1	Dynamic
Small Agriculture and Pumping	PA-1[7]	Static
Traffic Control Devices	TC-1	Deemed
Edison-Owned Streetlights	LS-1	Deemed

The UDCs propose to periodically redraw their load research samples and redeploy their sample meters in response to customer turnover and customer migration to hourly meters.

The UDCs' proposal also calls for the continuation of stratification based on current practices for the interim period. Stratification is a process in which characteristics of a population, such as average usage or territory, are used to enhance

[6] Since dynamic load shapes will be used for Domestic and GS-1 customers, advance load shapes will not be available.

[7] Edison points out that its PA-1 load profile does not conform with the 20 kW load profiling threshold established in D.97-05-040. About 20% of the 5000 accounts have connected loads above 20 kW. Due to the small number of customers, and because Edison's load research sample reflects the usage of all PA-1 customers, Edison proposes that these 5000 accounts be eligible for load profiling.

the information contained within the sample for the entire class so as to increase the sample's accuracy.

The Workshop Report notes that one of the concerns with using static load profiles is that static profiles do not follow actual weather patterns. As a result, static profiles are subject to greater daily errors than other load profiling methods. Some of the participants have suggested that approved econometric techniques be used to estimate load profiles and to verify the fit of load profiles.

The UDCs agree that econometric techniques reflecting weather and other relevant variables would be an improvement, but suggest that dynamic load profiling is preferable in the long term. The UDCs also point out that the process of gaining approval of econometrically derived load profiles may be slow, and may not permit implementation on January 1, 1998.

The UDCs are not opposed to moving towards dynamic load profiles, although the Workshop Report states that for PG&E and SDG&E, the use of dynamic load profiles is not feasible by January 1, 1998. The UDCs contend that there are additional costs associated with dynamic load profiles, but some of the parties oppose allowing the UDCs to recover these costs through the use of Public Utilities Code Section 376.[8]

The Workshop Report states that some of the parties believe that any retailer should be able to design its own load profiles so that the profiles reflect the characteristics of the retailer's customers. This could mean that customers in the same market segment could choose between retailers offering different load profiles.

The UDCs contend that there are three problems with allowing retailer-developed load profiles. The first problem is the "churning" effect that is created when customers switch between the UDC and the retailer, or between retailers. That is, if retailers are permitted to develop aggregated load profiles that are specific to their own customer mix, customer migration between retailers will result in a

[8] Unless otherwise noted, all section references are to the Public Utilities Code.

systematic loss of accuracy in the load profiles, even with a significant increase in the frequency in which load research samples are redrawn. The second problem is that there are no existing procedures to verify the accuracy of a nonstandard load profile. This could result in gaming of the load profile and fraud, which could lead to cost shifting between the market participants. For example, ESPs might have the incentive to create flatter load profiles than may actually exist in order to offer lower prices to consumers. The third problem is that standards would need to be developed for retailer-developed load profiles. These standards, such as the sample selection process and the frequency of redrawing samples, would need to be prescribed by an independent regulatory entity.

2. Comments On Load Profile Methodologies

a. Introduction

The comments to the Workshop Report raise several issues with regard to the methodologies used for load profiles. These issues are discussed below.

b. Static and Dynamic Load Profiles

Applied Econometrics, Inc. (AEI) points out that dynamic load profiles have the advantage of measuring current conditions that affect load, rather than employing profiles from previous years. AEI does not believe that static load profiles should be used for cost settlements because they do not account for current weather patterns, changes in consumption, or any changes in loads resulting from competition. However, Edison's dynamic load profile approach still has drawbacks because it does not provide for any segmentation of load profiles within the traditional rate classes.

Calpine Corporation, Cinergy Services, Inc., Mock Energy Services, NorAm Energy Management, Inc., and Stone & Webster Management Consultants, Inc. (jointly referred to as "Calpine et al.") agree with Edison's use of dynamic load profiles, but question why PG&E and SDG&E cannot do the same. Calpine et al. contend that dynamic load profiles are inherently more accurate than static profiles because the dynamic profile represents actual daily usage within the customer class. Calpine et al.

believe that the UDCs should be required to implement dynamic profiling methods for all residential and small commercial and industrial customers by January 1, 1998. Calpine et al. contend that it is inequitable for commercial or industrial customers to see markedly different electricity prices due to different load profiling practices of the various utilities.

Enron contends that the release of historic use information and load profile information for all applicable load profile categories is important. Although Edison plans to use dynamic load profiles, it should not be exempted from releasing the historical use data for current rate categories.

The California Energy Commission (CEC) believes that static load profiles should only be used as an interim measure pending the development and implementation of a dynamic load profiling methodology. The drawback with static load profiles is that the information may not capture the weather and operating conditions that are unique to the settlement period. The CEC recommends that PG&E and SDG&E consider how static load profiling can be refined to make it more accurate for use in the interim, while working to develop and implement dynamic load profiling. The CEC suggests that this can be accomplished by weather sensitive regression adjustments to the static load profiles; matching the load profiles to the overall system shape; and collection of load research data on a monthly basis, and producing time period specific profiles prior to final settlements.

The CEC recommends that a schedule be adopted to develop a dynamic load profiling methodology for all load profile customers by January 1, 1999. The CEC points out that dynamic load profiles may be developed when there are a statistically meaningful number of interval-metered sites equipped with telemetry, which allows the data to be uploaded and processed daily. The load profiles can then be used as a source of information on which to base load forecasts, make bids into the PX, schedule power with the ISO, and determine settlements for energy imbalances. Since large financial commitments are riding on the PX load bids and the ISO load schedules, the CEC believes that accurate load forecasts are essential.

Itron, Inc. (Itron) agrees that refining load profile methodologies will benefit load forecasting and settlement applications. However, refining load profiles to use them to bill customers is inappropriate. Instead of refining load profiles for billing, Itron contends that the Commission should focus on the establishment of direct measurement of meters on a statewide basis using radio-based automated meter reading systems.

ORA asserts that a load profile should develop the average hourly pattern of consumption for a customer or group of customers, with the intent of providing the best possible representation of hourly loads in the absence of hourly metering. ORA endorses Edison's use of dynamic load profiles. However, ORA believes that Edison must still make available static load shape data for all customer classes in order for the ESPs to formulate workable business plans.

ORA believes that the dynamic load profiling process should consist of the following steps: (1) identify groups of customers having relatively similar loads by using monthly energy consumption data, location, climate zone, housing stock information, demographics, etc.; (2) for each customer in the sample, install an hourly interval meter and communication systems; and (3) use a sample weighting system to convert the actual load profiles of the sampled customers of a group into an estimated load profile for the average member of the group.

PG&E proposes to use the existing rate categories as the base for establishing load profiles for residential, small and medium commercial, agricultural, and street lighting customers. PG&E uses existing sample meters to derive the load shapes for these rate categories.

Edison states that dynamic load profiles are superior to static load profiles or to an econometrically adjusted static load profile, and that dynamic load profiles should be used where reasonably feasible. Where there is no dynamic metering capability available, Edison advocates using static load profiles. Edison states that it is able to offer dynamic load profiles for domestic and small commercial customers because Edison's load research group has been able to deploy additional hourly meters

in recent years. This enables Edison to provide all the required information it needs to create accurate daily load shapes.

To maintain the accuracy of the load profiles, Edison plans to routinely update the samples. This update would be based on existing procedures, which typically involve the redrawing of samples about every four years. The samples are redrawn to reflect the changes in customer composition, migration between rate schedules, and other factors. Edison points out that in the future, more frequent sample updates may be needed to take into account those customers who install hourly meters.

(1) Discussion

The Commission recognized in D.97-05-040 that there were differences of opinion regarding how load profiles should be designed. The Commission stated:

> "Statistical load profiles are estimates of the loads of a group of customers. Those estimates can be fairly accurate if they are based on an appropriate statistical sampling of customers, actual interval metering of some representative portion of the members of the group, and updated frequently. They can be less accurate if they are based solely on literature studies and are not adjusted to reflect actual usage from members of the group in question."

The UDCs propose that the Commission adopt the interim load profiling approach described earlier, and explore possible revisions to such an approach in 1998. The issue before us today is whether the UDCs' interim approach should be adopted, or should modifications be made to the approach prior to the use of such profiles. We first address the issue of whether static or dynamic load profiles should be used.

At present, only Edison plans to offer dynamic load profiles for its domestic and small commercial and industrial customers. According to the Workshop Report, PG&E and SDG&E are unable to offer dynamic load profiles prior to January 1, 1998. The advantage of dynamic load profiling is that it reflects fairly current conditions which affect customer load. Conditions which affect customer load are such things as the weather and changes in the consumption patterns of the end-use

customers. Load profiles which are based on a static approach that uses past history as a reflection of future consumption may not accurately reflect current consumption because of recent changes in the weather or operating conditions.

Some of the parties recommend improving the static load profiles by using econometric techniques to reflect changes in weather and other variables. They propose that these adjustments be made to the static load profiles to make them more accurate during the interim period. We recognize that the interim use of static profiles may not be the best solution for reflecting an accurate approximation of use by a particular customer class. The regression techniques, and other methods to improve the static profiles, will take some time to implement. Instead of adopting a requirement that the UDCs fine-tune their static load profiles, we expect PG&E, SDG&E, and Edison to move toward the use of dynamic load profiles for all eligible customer classes no later than July 1, 1998, as discussed below. Thus, instead of working toward having more refined load profiles in place from January 1, 1998 to June 30, 1998, a period of six months, we expect PG&E and SDG&E to have in place dynamic load profiles no later than July 1, 1998. Having dynamic load profiles in place for the three major electric utilities in this state makes sense because it will result in uniform load profiling methodologies throughout most of the state, and will result in improved accuracy of the load profiles.

We will therefore adopt the UDCs' proposal to use static load profiles on an interim basis for the majority of the customer classes, and Edison's use of dynamic load profiles for its residential and small commercial and industrial customers.[9] Edison plans to use a static load profile for its master metered customers who serve residential customers. We indicated in D.97-05-040 that we would address the issue of master meters and direct access in an upcoming decision. Until the Commission resolves the issue of how direct access affects master metered customers

[9] The use of deemed load profiles is discussed below.

and sub-metered customers, such a load profile should not be offered. Accordingly, we will defer the issue of load profiles for master metered customers to another decision.

The next issue is what customer classes should have dynamic load profiles, and when should dynamic load profiles be put in place for PG&E and SDG&E, and for Edison's other rate classes. The use of dynamic load profiling appears appropriate for most customer classes. One notable exception is for street lights and traffic lights. As discussed below, the loads of street lights and traffic lights are fairly consistent from day to day and year to year. Another possible exception is agricultural customers. Due to their varying sizes, their locations, and changing usage, the use of dynamic load profiles for these customers may not be appropriate or feasible.

With respect to the use of dynamic load profiles for agricultural customers, we will direct the Energy Division to convene a workshop with the UDCs and other interested parties, particularly agricultural interests, to discuss this issue. Such a workshop shall be held no later than February 15, 1998. The Energy Division shall then prepare and file a workshop report by March 13, 1998 with its recommendations. Interested parties may file comments to the workshop report no later than March 31, 1998. The Commission will then determine whether dynamic load profiles for agricultural customers should be mandated.

The Workshop Report and the filed comments did not shed any light on why it is not feasible for PG&E and SDG&E to institute dynamic load profiling before January 1, 1998. We assume that part of the problem is that they may not have enough load research meters in place to create dynamic load profiles. PG&E and SDG&E should take action immediately, as should Edison, to ensure that dynamic load profiling is in place for all the customer classes described above no later than July 1, 1998. We will direct PG&E and SDG&E to file with the Commission's Docket Office, within 30 days a status report as to the reasons dynamic load profiling cannot be instituted for residential and small commercial and industrial customers by January 1, 1998. The status report shall also state what steps they will take to ensure that dynamic load profiling can be in place beginning on July 1, 1998. Edison shall also be required to file a status report on what steps it needs to take to ensure that dynamic load profiling

can be instituted for the other customer classes described above no later than July 1, 1998. The status report shall also contain an estimate of the costs that the UDCs anticipate spending to institute load profiles. Interested persons will be provided with an opportunity to comment on these status reports.

The UDCs are free to implement dynamic load profiling before July 1, 1998. Should that occur, to effect a smooth transition from the use of static to dynamic profiles, the UDCs shall provide the ESPs with 45 days advance notice before such profiles are used.

The four smaller investor-owned electrical corporations, Kirkwood Gas and Electric (Kirkwood), PacifiCorp, Sierra Pacific Power Company (Sierra Pacific), and Southern California Water Company (SCWC), have not submitted any load profiles or commented on the Workshop Report or the supplements. The four smaller utilities have filed applications addressing the requirements of Assembly Bill (AB) 1890 (Stats. 1996, ch. 854.). Unless those utilities are exempted from having to provide direct access to its customers, they remain obligated under Ordering Paragraph 5 of D.97-05-040 to provide load profiles to its customers with loads of less than 20 kW. These four utilities shall be required to file status reports with the Commission's Docket Office within 30 days from today. The status report shall explain what their intentions are with respect to offering load profiles to their customers who have a maximum demand of less than 20 kW, their reasoning for their actions, and what their timetable is for implementing load profiles. Interested persons will be provided with an opportunity to comment on the status reports of the four smaller utilities.

Some of the commenting parties have suggested requiring Edison to make available historical use data for current rate categories with a maximum demand of below 20kW, even though Edison plans to use dynamic load profiles for its residential and small commercial and industrial customers. These parties assert such information is important for the ESPs' marketing efforts. We see some value in making this kind of information available. However, given the number of days remaining in 1997, we believe that it is a more productive use of everyone's time to focus on making dynamic load profiles available for the remaining customer classes.

Once Edison begins to offer dynamic load profiles, the ESPs will be apprised of the electricity usage by residential and small commercial and industrial customers. In order to provide the ESPs with some idea of the usage data for Edison's residential and small commercial and industrial customers, we will require Edison to make available its dynamic load profiles for these rate schedules starting November 1, 1997.

Itron contends that for billing purposes, the Commission should adopt direct measurement of meters using radio-based automated meter reading systems. We decline to adopt Itron's suggestion. Although metering standards and interoperability standards need to be in place, the technology to carry out the metering functions is better left to the marketplace, rather than to this Commission, to decide. (See D.97-05-040, p. 35, fn. 14.)

Entities other than UDCs should not be allowed to create and design load profiles at this time. First of all, if entities other than the UDCs are permitted to design their own load profiles, a process to evaluate the accuracy of the load profile would be needed. Given the short time remaining before direct access is to begin, we believe that the Commission's resources and time can be spent more effectively addressing other direct access implementation issues. A second reason for not permitting other entities to design their own load profiles is that there will be an opportunity to revisit this issue as discussed in the segmentation section below. A workshop will be held to discuss, among other things, whether other entities should be permitted to develop segmented load profiles.

c. Deemed Load Profiles

The California City-County Street Light Association (CAL-SLA) contend that all street lights should be load profiled using the deemed estimation method. CAL-SLA points out that the hours of operation for street lighting is consistent, i.e., street lights come on at dusk, stay on during the night, and go off at dawn. A photocell acts as the switching unit which turns the lights on and off.

CAL-SLA states that according to the Workshop Report, PG&E and Edison propose that the deemed estimation method be used for street lights that the UDCs own, but not for customer-owned street lights. The rationale of PG&E and

Edison for not permitting customer-owned street lights to be on load profiles is that the municipal owner is not required to meet any maintenance requirements for the photocell which controls the lighting.[10] SDG&E, on the other hand, plans to permit customer-owned street lights (LS-2) to be on a load profile.

CAL-SLA point out that for customer-owned street lights on Edison's LS-2 schedule, Edison furnishes and operates the switch to operate the street light. Under PG&E's LS-2B or LS-2C schedules, PG&E maintains the photocells. If a load profile is not permitted, these customer-owned street lights would not be able to use direct access because it would require the installation of a costly interval meter that would exceed the cost of the street light. CAL-SLA also contend that there is no evidence that indicates that there are maintenance problems with customer-owned street lights. ORA supports CAL-SLA's interpretation, and argues that load profiling for LS-2 customers should be permitted using the same profile as the LS-1 customers.

The California Department of General Services, the University of California, and the California State University (DGS/UC/CSU) state that there was not agreement among the stakeholders that load profiles should apply only to utility-owned street lights. Most stakeholders appeared to be supportive of the concern that customer-owned street lights should be treated no differently than utility-owned street lights for purposes of eligibility for load profiles.

With respect to the traffic control signals, CAL-SLA points out an inconsistency in the approach adopted by PG&E and SDG&E. PG&E and Edison propose to use the deemed estimation method for traffic control devices on the TC-1 rate schedule. SDG&E characterizes traffic control signals as small commercial. CAL-SLA recommends that SDG&E use a deemed load profile for SDG&E's A-TC tariff.

Edison proposes to use deemed load profiles for lighting and traffic control services. The deemed load profiles are based on engineering estimates of hourly usage for customers on those schedules. However, if the customer owns the

[10] PG&E subsequently changed its position as discussed below.

photocells or other control devices for these kinds of services, Edison may require auditing of customers' maintenance practices, and may restrict the use of load profiles if maintenance does not meet appropriate standards.

(1) Discussion

Whether deemed load profiles should be used for all street light rate schedules revolves around the issue of who controls the maintenance of the photocell. Edison, and formerly PG&E, asserts that unless there is regular scheduled maintenance of the photocell switching device, there is no assurance that the load profiles of street lights will apply because of possible malfunctioning photocells. That is, if the photocell is not operating properly, the usage of the street light may exceed the usage estimated by the load profile.

SDG&E proposes to apply load profiles to all of its street light accounts. SDG&E appears to be unconcerned about who is responsible for the maintenance of the photocell. In its comments to the Eligibility Supplement, PG&E revised its position to allow all street light and traffic control accounts, regardless of lamp and photocell ownership, to go on deemed load profiles. (PG&E Comments to Eligibility Supplement, p. 4.) Edison proposes to restrict the use of load profiles if the customer-owned or -maintained street light does not meet appropriate maintenance standards.

We have carefully weighed the arguments regarding the use of deemed load profiles for all street lighting accounts. Edison's position has merit in that one needs to ensure that the photocell switching device is working properly. However, customer-owned street lights should not be barred from load profiling entirely simply because of the ownership of the photocell or who maintains it. We will require that the UDCs make all street lights, regardless of ownership, eligible for direct access based on deemed load profiles. We will also allow the UDCs to impose in such tariffs and profiles that the customer must meet or exceed the photocell maintenance requirements of the UDC in order to be eligible for direct access using that load profile. Such a requirement helps to ensure that the street light usage is consistent with the estimate of usage in the deemed load profiles.

CAL-SLA points out that SDG&E's load profile for traffic control lights, A-TC, uses a static load profile instead of a deemed load profile. The traffic control rate schedules of PG&E and Edison both use deemed load profiles. In deciding whether we should require SDG&E to change its load profile method for its A-TC schedule, we need to consider whether the static profile would result in a more accurate usage profile than a profile based on a deemed profile. As with street lights, one would expect the electricity usage of traffic lights to be consistent. Usage estimates could either come from historical data or engineering estimates of usage. Since electricity usage for traffic lights is fairly consistent, SDG&E's use of a static load profile is unlikely to vary much from a deemed load profile. Therefore, we will permit SDG&E to use a static load profile for its traffic lights rate schedule.

C. Segmentation

1. Introduction

Most of the rate schedules serve a variety of customers. Segmentation allows the variety of customers within a rate schedule to be further divided into more discrete categories of similar customer types. Segmentation methods include dividing customers by customer categories, usage, climate zone, appliance mix, all-electric versus gas and electric, dwelling type, Standard Industrial Code (SIC), or multi-site customer. Other segmentation methods include identification of homogeneous customer groups with consistent load shapes, identification of costs of service differences on a per-customer basis, and use of statistically valid approaches, such as econometric modeling.

The Workshop Report states that simple segmentation, such as one load profile applied to all customers in a rate category, would facilitate the implementation of direct access, but could result in less accuracy in the assignment of the PX costs because of the larger grouping of customers. A higher degree of segmentation could result in greater accuracy in the assignment of the PX costs, but could complicate and delay the implementation of direct access because of the segmentation process.

The UDCs propose that, initially, the load profile categories should correspond to existing rate categories, with no additional segmentation. The UDCs contend that this is necessary to implement direct access with load profiling on January 1, 1998. Although the Workshop Report states that the UDCs are not opposed to the idea of additional segmentation, the UDCs believe that this should be addressed after January 1, 1998. According to the Workshop Report, most of the workshop participants agree with the UDCs that the issue of additional segmentation of current rate schedules should be deferred until sometime in 1998.

The UDCs also propose that the issue of which entities should be responsible for developing and evaluating segmentation plans should be deferred without prejudice to a proceeding in 1998. The Workshop Report notes that resolution of this issue is closely tied to the issue of which entities may develop or authorize load profiles.

The UDCs propose that any segmentation should be subject to the following set of criteria:

- customer eligibility must be readily verified to minimize enforcement burdens;

- the possibility for collusive behavior among segment members should be remote;

- segmentation must trade off costs and administrative burden with improved accuracy;

- the load shape resulting from a particular segmentation of a customer class must represent, to a reasonable degree of statistical accuracy, the actual shape for the segment in aggregate; and

- the load profiles resulting from the particular segmentation scheme should be subject to consistent application in determining PX credits and charges, competition transition charges (CTCs) and ISO/PX settlements.

The Workshop Report notes that some of the other participants believe that additional segmentation should occur on January 1, 1998. Without additional segmentation, some of the participants are concerned that load profiling errors could be

significant, and that these errors could result in an inequitable allocation of costs. Although the impact on individual customers is likely to be small, the CEC believes that such cost differences could have substantial impacts on the cash flows of retailers.

The Workshop Report notes that the CEC believes that the ESPs must be able to pursue their own segmentation schemes in 1998. The CEC believes that the Commission's intent of enabling competition would be undermined if the ESPs are denied this option.

2. Comments On Segmentation

The CEC believes that some additional segmentation will enhance the accuracy of load profiles, and that some level of additional segmentation should occur in early 1998. The CEC points out that some easily identified subgroups already exist in each customer sector, such as inland, higher-cost customers, compared to coastal, lower-cost customers.

The CEC believes that a working group should be started to identify criteria for further segmentation. This working group should also do the following:

- develop a specific test to identify homogeneous customer groups that have load profiles that are statistically different from the class average;
- develop a mechanism for determining the cost of service differences among these groups;
- develop estimates of the incremental metering and sampling costs implicit in additional segmentation;
- identify billing impediments associated with further segmentation;
- identify implications for collection of the CTC resulting from further segmentation, if any; and
- develop a cost/benefit test to ensure that additional segmentation results in an overall net benefit by reducing ISO, PX, and private scheduling coordinator (SC) energy imbalance settlement costs.

Calpine et al. also support the accelerated development of expanded segmentation. At a minimum, segmentation should include the climatic zones which

exist within each of the UDC's service territories. Calpine et al. also favor segmentation based upon SICs. Calpine et al. also support the CEC staff's recommendation to permit the ESPs to pursue their own segmentation proposals in 1998.

ORA has examined a variety of stratification variables to determine whether desirable segmentations could be achieved by 1998. These variables include customer usage, climate zone, whether electric space heating is used, service on time-of-use rates, and business type. ORA contends that its load profiling proposal for segmentation is a workable solution for preventing unnecessary costs, and that it would not involve significant system changes that require substantial lead time.

PG&E contends that segmenting the load profiles beyond the rate category level would require additional sample points, entail additional costs, and jeopardize its ability to implement direct access on January 1, 1998.

Edison generally supports additional segmentation because it will result in the customers' electricity prices more accurately reflecting their usage characteristics. Edison argues, however, that during the rate freeze period, the additional segmentation provides little or no benefit to customers, because the lower PX charges associated with a lower cost load profile would simply result in a higher assignment of CTC. Edison also points out that some of the proposals to further segment are simply not appropriate because there is not enough cost differential between categories to make segmentation worthwhile.

Edison believes that the interim implementation of load profiles should use only existing rate groups without any finer segmentation. Further segmentation may be worthwhile if it is in accordance with the set of criteria described above.

3. Discussion

As discussed earlier, we will require the UDCs to have dynamic load profiles available for customers whose maximum demand falls below 20 kW by July 1, 1998. This will relieve some of the inaccuracies that are associated with the use of load profiles. The use of segmentation for dynamic load profiles could further enhance the accuracy of the load profiles by subdividing customers within a rate schedule into more

discrete customer load profiles. However, we agree with the UDCs and some of the other commenting parties that the development and agreement of the criteria for dividing customer groups into additional segments is likely to take some time.

Instead of developing segmented load profiles at this juncture, the time will be better spent developing dynamic load profiling. We will, however, defer consideration of segmented load profiles to 1998. We will direct the Energy Division to convene a workshop in conjunction with the UDCs within 100 days from today to discuss the process for segmenting the current rate schedules into more segmented rate categories. The workshop should address the following: the kinds of segmented customer categories that can be created; the kind of criteria that should be used in developing these customer segments; whether the segmented rate categories are justified by the differences in the cost of serving these different customer segments; whether the UDCs are the appropriate entities to develop the segmented customer groups or should others be permitted to develop the load profiles; and the proposed timeline for instituting segmented dynamic load profiles.

At the conclusion of such a workshop, the Energy Division shall prepare a workshop report about the segmentation issues, including its recommendations, a detailed description of any segmentation proposals, and an achievable timetable for implementing the segmented rate categories. This report shall be filed with the Commission's Docket Office within 130 days. Comments to this report may be filed within 21 days of the filing of the report. The Commission will then issue a decision regarding the segmentation issues. If appropriate, the decision will include the procedural schedule for resolving any outstanding issues with respect to segmented load profiles.

D. Load Profiles For 20 kW to 50 kW Customers

1. Introduction

D.97-05-040 left open the question of whether load profiles for certain customers whose maximum demand is equal to or greater than 20 kW, but less than 50 kW, should be permitted. If load profiles for these customers are not permitted, they

would be required to have an hourly interval meter to participate in direct access. (D.97-05-040, p. 35.)

2. Proposals For 20 to 50 kW Customers

In the Workshop Report, PG&E, SDG&E and Edison were originally opposed to the use of load profiles for customers with maximum demands between 20 kW and 50 kW. They originally proposed that only customers with a measurable maximum demand below 20 kW be eligible for load profiling. PG&E and SDG&E subsequently changed their position prior to the meeting of July 16, 1997. In the Eligibility Supplement, PG&E and SDG&E proposed that an interim blanket exemption be adopted to allow the use of load profiles for all direct access customers up to 50 kW. The load profiles for the 20 to 50 kW customers would be developed using the UDCs' proposal for a simplified load profile methodology. This proposal is conditioned on the parties' support for the adoption of the interim load profiling methodology. PG&E and SDG&E further propose to address the issue of whether load profiles for these customers should continue past the interim period in a proceeding to be held in 1998.

Edison opposes the interim blanket exemption. The Eligibility Supplement contains Edison's proposal for a temporary backlog exemption for individual customers with less than 50 kW maximum demand who are waiting to have an interval meter installed. Edison contends, however, that no other exemptions should be granted from the direct access metering requirement because it may cause customers to avoid CTC by taking advantage of the ratemaking treatment for transition costs for hourly metered customers.

A third proposal was advanced at the July 16 meeting by the DGS, SPURR-REMAC, ORA, the California Retailers' Association (CRA), and the California Farm Bureau (collectively referred to as "joint proponents"). The joint proponents contend that the installation of a meter will not be economic for customers with loads between 20 kW and 50 kW. This joint proposal would grant a permanent consumption-based exemption for those customers between 20 and 50 kW who have a consumption level below 200,000 kWh per year (based on historical average usage). The joint proponents contend that the 200,000 kWh criterion is the estimated annual kWh level needed to recover Edison's tariff levels of metering costs. Unless this exemption is granted, the metering requirement will create an insurmountable barrier to direct access for some customers. The joint proponents also indicate their support for the proposed temporary backlog exemption and the proposed interim blanket exemption.[11]

CellNet Data Systems, Inc. (CellNet), a manufacturer of automated meter reading technology and meter data communication systems, presented a fourth proposal at the July 16, 1997 meeting. CellNet proposes that for customers who are not on a demand meter, the same hourly load profile used in billing customers for energy be used to calculate the customer's monthly maximum demand, in order to determine whether that customer exceeds the demand-based eligibility threshold for the use of a load profile.

The Workshop Report notes that some parties thought that load profiles should be extended to customers with a maximum demand of 20 to 50 kW because of a concern over the availability and affordability of hourly meters. The availability of hourly meters revolves around whether enough meters or meter installation capacity will be available in early 1998 to meet market demand. This shortage may arise because of either a lack of approved standards for non-UDC metering and meter installations, a lack of sufficient UDC resources to meet market

[11] The Eligibility Supplement notes that ORA does not support the UDCs' proposals for a simplified load profiling methodology.

metering demand, a lack of availability of direct access compatible metering or meter installation expertise, or any combination of these factors.

The Workshop Report notes that the affordability concern arises because it may be cost-prohibitive for certain types of customers, particularly those with low load factors, to justify the cost of a direct access meter. For example, a customer with a low load factor would have a low kWh consumption relative to its maximum demand. As a result, low load factor customers may experience smaller direct access savings, which may make the cost of new direct access metering equipment (including hardware, software, installation, meter reading, data management, and meter maintenance costs) unaffordable.

The Workshop Report notes that an argument against extending load profiles to these customers is that the accuracy of the load profiling methodology may decline with an increase in customer size because of the greater variability in the usage patterns of larger customers. If load profiles are extended to these customers, the Workshop Report states that it is likely that larger volumes of unaccounted for energy (UFE) will result because of the less accurate load profile.

3. Comments On Load Profiles For 20 To 50 kW

DGS/UC/CSU point out that even Edison concedes that there will be customers in the 20 to 50 kW range for whom the purchase of an hourly meter would be uneconomic. Therefore, DGS/UC/CSU contend that an exemption is necessary for at least a subset of customers within this range to ensure that direct access implementation is equitable to all customer classes as required by Section 365. DGS/UC/CSU believe that the Commission should adopt the interim blanket exemption proposal of PG&E and SDG&E until the issue of exemptions can be addressed in a proceeding to be held in 1998. If this proposal is not acceptable to the Commission, then the Commission should adopt the proposal presented at the July 16, 1997 workshop meeting by DGS, SPURR/REMAC, CRA, the Farm Bureau, and ORA.

DGS/UC/CSU contend that Edison's CTC leakage argument, to the extent the argument has any validity, is unrelated to the issue of whether there should be load profiles for customers whose maximum demand is between 20 and 50 kW.

That is, the CTC leakage issue applies to all customers, and not just to those customers who fall between the 20 to 50 kW range. DGS/UC/CSU state that the CTC will be calculated using monthly class averages. Thus, only the customer's PX costs would be affected by the changes in usage that could result from a change from a load profile to an hourly meter.

The California Large Energy Consumers Association (CLECA) and the California Manufacturers Association (CMA) oppose any blanket extension of load profile eligibility beyond the 20 kW threshold established in D.97-05-040. They fear that additional profiling may create incremental costs that the UDCs will seek to recover. They contend that this is likely to result in a recovery from all customers, a shift of other type of costs onto hourly metered customers, and additional UFE that the ISO must allocate to all customers. CLECA and CMA contend that if eligibility exemptions are to be adopted, they should be deferred at least until the ISO's software can handle the proposed separation of estimated load profile error from other sources of UFE.

DGS/UC/CSU argue that contrary to the assertions of CLECA and CMA, there is no evidence that a 20 to 50 kW exemption will shift costs to metered customers. They also point out that any load profile error is dwarfed by other errors, such as the inaccurate reporting of loads and schedules by the scheduling coordinators. Any potential problems with load profile errors will be remedied when the ISO adopts procedures to isolate load profile error from UFE losses.

CellNet supports the proposal to allow a temporary exemption if customers are unable to obtain an hourly meter or if there is a delay in installation. CellNet believes, however, that the market will provide the necessary equipment in a timely manner. CellNet further believes that hourly metering will be cost-effective for a majority of customers in the 20 to 50 kW range, and that meter costs will decline with more competition. Before granting any exemptions to the 20 kW rule, CellNet believes the Commission first needs to identify reasons for such exemptions, and that in the absence of such reasons, the Commission should avoid granting any exemptions.

CellNet also asserts that the determination of the 20 kW threshold should be consistent. CellNet points out that under the current proposals, many 20 kW

customers will have access to competitive metering services, while others will not. For example, PG&E proposes that a 35 horsepower agricultural load be considered a 20 kW customer, even though such loads exceed 26 kW. SDG&E proposes a threshold of 12,000 kWh per month, which is in excess of 27 kW.

ORA is opposed to the interim blanket exemption proposal of PG&E and SDG&E because it is conditioned upon acceptance of the UDCs' interim load profiling methodology. ORA opposes the interim load profiling methodology because it uses existing static load profiles with segmentation at the rate class level only. Should the Commission adopt the interim blanket exemption, ORA recommends that the exemption end as soon as the ISO's software can recognize the separation of load profile error from the other sources of UFE.

ORA is willing to permit the use of load profiles for 20 to 50 kW customers under certain circumstances. If there is a group of homogeneous customers with some usage below 20 kW, and others with usage above 20 kW, ORA believes that those customers with demands between 20 to 50 kW should be allowed to join the group load profile for the purposes of direct access. ORA also believes that if a group of customers with demands from 20 kW to 50 kW want to use a load profile, such a request should be examined on a case by case basis.

ORA does not believe that CTC leakage will be a concern. ORA asserts that under the UDCs' hourly residual basis proposal, rates will tend to be higher for those who cause the least costs on peak, and that rates will be lower for those who cause the most costs on peak.

Payless ShoeSource, Inc. (Payless) favors the interim blanket exemption proposal of PG&E and SDG&E. Payless asserts that extending the exemption to 20 to 50 kW customers will encourage a larger number of customers to participate in direct access. Payless also contends that such an exemption will allow time for the metering market to develop, which will result in reduced meter costs and increased availability. Payless thinks that an evaluation of the interim blanket exemption should take place after actual experience with direct access implementation and the use of load profiles has occurred. If metering is required for 20 to 50 kW customers, Payless

contends that the metering costs will eliminate any savings that would result from direct access.

If the Commission decides not to raise the metering eligibility to 50 kW, Payless contends that the Commission should then exempt multi-site facilities that fall under 50 kW from the metering requirement. Allowing multi-site facilities to use load profiles on all loads less than 50 kW, will enable Payless and other similarly situated companies to implement a direct access strategy that is consistent among facilities, and will allow them to maximize any potential savings in the direct access market.

Payless rebuts the argument of CLECA and CMA that extending load profile eligibility from 20 to 50 kW would create additional UFE. Payless contends if a customer with a peak demand of less than 50 kW does not participate in direct access, its actual load will be estimated for purpose of the CTC by the same load profile that will be used if it participated in direct access without a meter. Thus, Payless believes that UFE cannot be increased, but can only be decreased by customers using meters.

Payless contends that Edison's proposal for a temporary backlog exemption addresses only the issue of meter availability, and not affordability. Such a proposal will not benefit those customers who cannot participate in direct access due to the high cost of metering.

Joint comments to the Eligibility Supplement were filed by PG&E, SDG&E, DGS/UC/CSU, SPURR/REMAC, the California Farm Bureau, and the CRA (collectively referred to as "joint commenters"). The joint commenters support the interim blanket exemption for customers with loads between 20 and 50 kW until this issue is revised by the Commission during a proceeding in 1998. The joint commenters believe that in PG&E's service territory, eligibility for exemptions should be determined as follows: (1) loads without demand meters would be deemed to be under 20 kW consistent with PG&E's position on eligibility for load profiles; and (2) loads with a demand meter having a demand under 50 kW in nine out of the twelve months of the year would be deemed under 50 kW. In SDG&E's service territory, eligibility for exemptions should be determined as follows: for loads with a demand meter, having a

demand under 50 kW in nine out of the twelve months of the year would be deemed under 50 kW.

The joint commenters also agree that the PG&E and SDG&E proposals for segmentation and load profile methodologies as set forth in the Workshop Report should be adopted for use during an interim period until the Commission revisits the issues regarding methodologies in 1998.[12]

The joint commenters agree that for the 20 to 50 kW customers, the installation of an hourly meter may be uneconomic, and the installation of such a meter could present a significant barrier to direct access for these customers. They further assert that the development of such a barrier would contravene Legislative and Commission policy that direct access should be available on an equitable basis to all classes of customers. (See Section 365(b).) The joint commenters also contend that allowing an interim exemption from hourly meters would reduce the potential for backlogs related to the availability of hourly meters and their installation. The joint commenters also state that there is likely to be more accurate information in mid-1998 on the availability and cost of meters and metering services, particularly for medium-sized customers.

PG&E filed separate comments to the Eligibility Supplement in support of the blanket interim exemption. PG&E believes that the use of interim statistical load profiles for 20 to 50 kW customers will ensure that no customer faces an unreasonable barrier to direct access as a result of a lack of meters or the cost of such metering. PG&E also changed its position with regard to street light and traffic control accounts, and is willing to put all of these accounts, regardless of lamp and photocell ownership, on deemed load profiles.

PG&E recognizes that the expansion of load profile eligibility to include medium-sized customers will reduce the accuracy of ISO and PX settlements.

---

[12] The joint commenters state that the issues related to load profiles for street lights is not addressed in their joint comments.

Thus, PG&E contends that the blanket interim exemption should not be viewed as a long-term solution to any problems that may emerge with respect to meter affordability or availability.

PG&E also raised in its comments that the UDC must be the only provider of metering and meter services for statistical load profile customers and for its full service customers.[13] PG&E does not believe that the Commission's decision on revenue cycle unbundling was intended to allow ESPs to provide metering and meter services to customers who are not their direct access customers. PG&E contends that its systems are not prepared to handle the complex contractual arrangements that would be required to facilitate the separate unbundling of metering and meter reading functions at this time. At a minimum, PG&E asserts that the Commission must adopt such a policy on an interim basis until a fuller review of this issue can be made.

PG&E also points out that under the Commission's cost separation decision, D.97-08-056, the Commission has created unintended incentives for certain types of customers and their ESPs, and that it has altered the incentives for UDCs to remain neutral with respect to a customer's election to take direct access or remain as a utility full service customer. PG&E contends that as better load shape customers, i.e., high load factor customers, choose to take direct access and install direct access metering, the PX purchase costs will rise for all remaining full service and load profile customers. PG&E asserts that this will lead to material cost-shifting within customer classes in contravention of AB 1890 and Commission policy.

Edison is opposed to extending load profiling to any customers with a maximum demand above 20 kW. Edison estimates that only about 15% of its 100,000 customers who fall between a maximum demand of 20 and 50 kW would find it cost-

[13] PG&E has proposed one minor exception to this rule. If a customer elects direct access and owns its own direct access meter, but later returns to PG&E's full service, PG&E would permit that customer the option of continuing to own its own meter. However, PG&E would be the only entity that would be allowed to read and maintain the meter so long as the customer remains a full service customer.

prohibitive to purchase a direct access meter.[14] In addition, Edison contends that these same low load factor customers have little incentive to move to direct access because they are generally cross-subsidized under the existing class-average bundled service rates.

With respect to the availability of meters, Edison recognizes the problem that can occur if a direct access customer is unable to have an hourly interval meter installed in a timely manner. If a meter installation backlog develops, Edison proposes to expand its installation capacity to meet the demand. If this is not possible, Edison proposes that load profile eligibility could be extended on a temporary basis for individual customers with less than a 50 kW maximum demand. Edison proposes that this temporary backlog exemption be eliminated once the market can accommodate customer demand for direct access metering.

Edison is concerned that exempting additional customers from the direct access metering requirement may cause leakage of the CTC. That is, the exemption process could provide an opportunity for customers to systematically shift or avoid CTC by taking advantage of the ratemaking treatment for transition costs for hourly metered customers. If CTC leakage occurs, Edison contends that the period over which Edison has to recover its transition costs will be extended, and that it may prevent the UDCs from fully recovering the CTC during the transition period.

Edison also expressed concern over the proposal of DGS and the others to exempt customers with peak usage between 20 kW and 50 kW and annual consumption below 200,000 kWh from the hourly meter requirement. Edison contends that the proposal is inappropriate because it allows low load factor customers to use load profiling at the expense of high load factor customers. That is, the cost of serving

[14] Edison's estimate is based on the assumption that there is a monthly metering charge of $15 per month, and that there is a 10% savings for direct access. Other parties believe that the meter costs in a competitive market are likely to be lower than Edison's $15 per month estimate, which should reduce the percentage of customers who would not be able to afford a direct access meter.

low load factor customers is higher because the low load customer's usage is during on-peak times when prices are higher. During off peak hours, Edison contends that the high load factor customers subsidize the low load factor customers.

If the Commission were to adopt an exemption for low load factor customers, Edison recommends that the Commission direct the utilities to create one or more separate load profile segments for these customers as soon as practical to mitigate the extent of the cross-subsidies.

4. Discussion

D.97-05-040 left open the issue of whether load profiles for customers with a maximum demand of 20 kW to 50 kW should be permitted. We had hoped that the participants at the load profiling workshop could come to some agreement on this issue. (D.97-05-040, p. 35.) Unfortunately, no agreement was reached.

In deciding this issue, we need to weigh the cost and availability of hourly interval meters, and what may happen if we allow or do not permit the use of load profiles for this customer group. At this point, we do not know for certain how much hourly interval meters will cost, what kinds of monthly fees will be associated with such meters, and the availability of such meters. If the cost of having such meters is high, or if there is a waiting list to have such meters installed, this will discourage customers from signing up for direct access. On the other hand, if the cost of such metering is low, and hourly interval meters can be readily installed, it is likely that more customers will choose direct access. If load profiles for customers with a maximum demand of 20 kW to 50 kW are not permitted, the number of customers who select direct access in this range of usage will depend on the affordability and availability of hourly interval meters. If load profiles for these customers are permitted, more customers will be eligible for direct access, but this is likely to increase the amount of error due to inaccurate load profiles.

In balancing the above considerations, we believe that the interim blanket exemption proposal of PG&E and SDG&E should be adopted. This proposal, will allow those customers who fall within the 20 to 50 kW range to examine the costs and benefits of moving toward an hourly interval meter, while being able to use load

profiles on an interim basis. It will also provide an opportunity for market forces to determine how much hourly interval meters should cost, and allow the supply of such meters to match the demand. Since the proposal of PG&E and SDG&E is only for an interim period, we will have an opportunity to review the impact of the hourly interval metering requirements and its effects on customers who choose direct access. In addition, since these load profiles will be used only on an interim basis, there will not be an undue amount of load profiling error or a shifting of costs onto hourly metered customers. Interim load profiling for 20 to 50 kW customers is equitable given the uncertainty over the cost and availability of hourly interval meters, and consistent with the provisions of Section 365(b).

We will permit the use of interim load profiles for customers with a maximum demand of 20 kW or greater, but less than 50 kW. These interim load profiles shall be in effect until September 30, 1998, unless extended by the Commission. The UDCs are directed to generate such load profiles, and to make them available no later than January 1, 1998.[15] We will also adopt the joint commenters' recommendation that if the customer has a maximum demand under 50 kW in nine out of the twelve months of the year, that customer can use the 20 to 50 kW load profile.

To assess the impact of the metering requirement on 20 to 50 kW customers, we will require the Energy Division to convene a workshop with the UDCs and other interested participants no later than May 30, 1998. The purpose of that workshop shall be to examine the costs associated with hourly interval metering, and its impacts on customers whose maximum demands fall within the 20 to 50 kW range. The workshop should examine how many customers in that range are on load profiles, and how many have hourly interval meters. The workshop should also address whether the load profiles for these customers should be extended or discontinued in light of the metering situation, or whether hearings should be held to resolve this issue.

[15] If possible, dynamic load profiles should be used. If that is not possible, static load profiles may be used until July 1, 1998.

Within 30 days of the conclusion of such workshop, the Energy Division shall prepare and file a workshop report with the Docket Office. Interested persons may file comments to the workshop report within 21 days of such filing. The Commission shall then decide whether hearings are necessary, or if the interim load profiles for customers whose maximum demand is between 20 to 50 kW should be extended, or if these interim load profiles should be allowed to terminate on September 30, 1998.

We also address PG&E's comment that it is its understanding of D.97-05-039 that the Commission did not intend to allow the ESPs to provide metering and meter services to customers who are not their direct access customers. PG&E asserts that with one exception, only the UDC can be the provider of metering and meter services for statistical load profile customers and its full service customers.[16]

A review of D.97-05-039 seemingly confirms part of PG&E's interpretation, at least for the short term. Ordering Paragraph 2 of that decision states:

> "Beginning January 1, 1998, competing retail energy service companies may provide the billing and related services for all customers and metering systems for their largest customers and beginning January 1, 1999, such firms may provide metering systems for all customers, so long as the services and systems are consistent with the other requirements discussed in this order."

D.97-05-039 contemplates that starting on January 1, 1999, any retail energy service company may provide metering systems for any customer. Thus, contrary to PG&E's belief, metering services for all customers will be unbundled as of January 1, 1999. That means in 1999, any company may supply the meter to any customer. For 1998, however, PG&E believes that D.97-05-039 did not intend to unbundle metering and meter services for customers who are on load profiles. D.97-05-039 stated that retail energy service companies may provide "metering systems for their largest customers." The decision did not, however, address who supplies the meter for a load profile customer.

[16] See footnote 13.

The unbundling of metering services for customers on load profiles does not really affect those customers because, as PG&E points out, a load profile customer will remain on a kWh, time-of-use, or demand meter until the customer chooses to install a meter which meets the standards for direct access metering. The unbundling issue arises only when a customer purchases a meter for direct access, but then decides to return to a load profile instead of engaging in direct access. Since the purpose of making load profiles available is to see how the metering market develops, and to make direct access available without the necessity of having the customer purchase a meter, it does not make sense to allow unbundling of metering services for customers who are on statistical load profiles in 1998, except in the situation noted above.

In light of the load profile approach that we adopted in D.97-05-040 and in today's decision, we clarify our intent behind D.97-05-039 with respect to the unbundling of metering and meter services for customers who take service on load profiles. For customers who are on load profiles for the purposes of direct access, the UDC shall be the only approved provider of metering and meter services in 1998, unless the customer already owns a meter that is capable of providing data for direct access, but chooses to take direct access from a load profile instead. In such a situation, however, the UDC would be the only entity allowed to read and maintain the meter.

CellNet points out that the 20 kW threshold is not consistent among the UDCs. As an example, CellNet asserts that PG&E proposes that a 35 horsepower agricultural load be considered a 20 kW customer, even though such a load exceeds 26 kW. We recognize that the break points in the current rate schedules do not completely match our load profile cut-off points. The workshop referenced above should examine these inconsistencies in the load profiles, and propose recommendations as to how these inconsistencies should be resolved.

E. Load Profile Applications

1. Introduction

The Workshop Report states that load profiles will be used in a variety of applications where hourly information is needed for the customers or for the market participants that serve those customers. There is a need for load profiling because power will be traded and scheduled in the ISO and PX on an hourly basis. The majority of customers will not have hourly meters. Instead, those customers have meters which register total energy usage over a period of time. Load profiling is needed to combine hourly energy pricing with monthly meter reading. Anticipated applications of load profiling include the following: ISO settlements with the SCs, including the PX; PX settlements with the UDCs and other PX participants; UDC identification of PX energy costs on both full service and direct access customer bills; and use by the ESPs to forecast customers' loads for bidding and scheduling purposes.

The Workshop Report states that virtually all parties agree that a single, consistent load profile should apply to a given customer for each of the above applications. This will mitigate the opportunity to self-report loads, and ensure access to necessary market data.

The ISO settlement process determines on an hour-by-hour basis the load responsibility of individual SCs, including the PX. SCs must submit balanced forecasts of demand and generation (final schedules), which are then compared after-the-fact against actual demand. The actual demand is derived from estimates of the hour-by-hour SC demand, based on available metered data. The differences between the forecasts and the actual demands of individual SCs are imbalances, which the ISO must settle with each SC. The differences between the total known inputs to the ISO system (metered generation plus net imports at grid interconnection points) and total known end-use metered consumption represent UFE.[17]

[17] According to the Workshop Report, UFE cannot be directly assigned to any individual market participant.

The PX will act as a SC for other ESPs, and as an SC will submit balanced schedules to the ISO. If the PX is charged for any resulting imbalances between its scheduled and actual loads, the PX will seek to allocate its settlement charges among its participants in relation to the costs they impose.

The Workshop Report states that because hourly metered usage is not available for load profile customers, the errors resulting from the use of statistical load profiles will contribute to the hourly UFE. The ISO is currently considering proposals for separately identifying the load profile portion of UFE and assigning it to SCs in proportion to their load profile customer loads. It is the UDCs' understanding that this cannot be implemented on January 1, 1998. Other sources of UFE, which include energy theft, metering errors, and transmission and distribution loss estimation errors, would still be allocated to SCs in proportion to their hourly loads, both metered and load profiled. The Workshop Report notes that any improvement in load profile estimation accuracy will lead to a corresponding reduction in UFE which must be allocated administratively by the ISO.

During the transition period, the UDCs are required to procure energy through the PX to meet all of their full service customer needs, and to separately reflect the costs of this energy on customer bills. For bundled UDC full service customers, there will be a PX charge. For direct access customers, the same PX charge would be subtracted from the bundled rate to credit the customer for the UDCs' avoided cost of purchasing PX energy on that customer's behalf. The PX portion of the bill for bundled UDC customers and the PX credit for direct access customers are intended to reflect the UDC's cost of purchases from the PX. After the transition period ends, the UDCs propose to use load profiling to calculate the PX energy charges for any remaining full service customers without hourly metering.

2. Comments On Load Profile Applications

Calpine et al. agree that a single, consistent load profile for a given customer should be used for the ISO settlements with scheduling coordinators, PX settlements with the UDCs and other PX participants, and UDC identification of PX energy costs on both full service and direct access customer bills.

Itron comments that load profiles are useful for load forecasting and for settlement purposes. However, for billing purposes, Itron contends that load profiling is inadequate. Any individual's actual usage pattern will vary in some degree from the load profile. Thus, to the degree that a customer's actual usage varies from that of the load profile, there will be an error in the bill. According to Itron, the use of load profiles for billing does not provide any incentive for consumers to shift their load to a less costly period. As a result, load profiles do not encourage conservation and cost savings. Instead of using load profiles for billing, Itron contends that the direct measurement capability that is offered by automated meter reading systems is preferred. Itron contends that if consumers are given a choice, consumers would much rather have their actual load shape measured directly than have it estimated using data from a large group of other customers.

Edison states that it is essential that the same load profiles be used both for the ISO/PX settlements and for PX credits. Allowing market participants to use different load profiles for the two opens the door for inappropriate gaming or arbitrage opportunities. Edison contends that such behavior would directly threaten a utilities' recovery of transition costs.

Edison argues that the UDCs and other market participants should not be required to use authorized load profiles for forecasting and bidding. Instead, market participants should be able to use any technique to make forecasts and submit demand bids because the ISO settlement protocols will make market participants fully accountable for the accuracy of their forecasts and demand bids.

Edison contends that the primary importance of load profiling is the technical issue that if load profiles do not match the actual pattern of customer usage in the aggregate, there will be a discrepancy between the power delivered to a UDC's service area hourly and the total hourly usage reported to the ISO. This discrepancy will contribute to the UFE, which is to be allocated to all SCs by the ISO. Edison points out that this issue is of importance to the market participants because they want to minimize the amount of UFE.

ORA states that one of the applications for load profiling is to calculate the credits reflecting the cost of the UDCs' purchases from the PX for customers who purchase their electricity through other suppliers.

ORA believes that the principal goal of load profiling is to (1) allow competitive service to reach all customers, and (2) encourage accurate cost allocation between suppliers, i.e., no cost shifting. ORA asserts that a load profile should develop the average hourly load pattern of consumption for a customer or groups of customers, with the intent of providing the best possible representation of hourly loads in the absence of hourly metering. ORA does not believe that offering load profiling on a rate schedule basis accounts for the differences among small customers, and selection of a load profiling methodology should recognize these differences and allow them to be reflected in settlements. For that reason, ORA favors segmentation based on certain customer characteristics such as climate zone, usage level, housing type, or type of business, as well as profiles based on dynamic load profiles.

ORA further believes that the ESPs should be allowed to forecast their customers' loads in the most accurate way they can devise, and not be required to use predetermined load templates that the utilities or other market participants may choose to use.

ORA states that recent discussions led up to the development of one proposal for distinguishing load profile error from other sources of UFE. This two-step process calculates and allocates UFE in general on a monthly basis, and then isolates estimated load profile error from other UFE on an hourly basis and allocates the load profile error to non-hourly metered loads.

ORA proposes that to minimize the effect of load profile error on cost allocations for UFE, real time load sampling should be used during the ISO settlement process to replace any previous use of predetermined load profiles. The incorporation of such data should help ensure that the settlements are as similar as possible to those that would occur if hourly metering were in place for each customer. ORA also suggests that the Commission evaluate whether there should be improved metering at central metering points.

ORA proposes that when the Commission reviews load profiling issues in the year 2000, consideration should be given to the idea of placing hourly meters at central metering points. The purpose of such placement would augment and calibrate the load research data used in load profiling.

3. Discussion

Many of the parties contend that the same load profiles should be used for all the different load profile applications. We do not have any problem with this approach. However, what the ISO may require of the SCs, and what the PX may require of the UDCs and other PX participants, are issues that the Federal Energy Regulatory Commission (FERC) has jurisdiction over. To the extent load profiles are used in a transaction over which we have jurisdiction, the same load profile should be used.

The issue that concerns us the most about load profiles is inaccuracy. If the load profiles do not match actual customer usage, a discrepancy in the UFE will result. It is our understanding that the ISO is currently considering proposals for separately identifying the load profile portion of UFE and assigning it to SCs in proportion to their load profile customer loads. Such a procedure will help to control the size of the UFE, and to properly allocate the UFE losses to those who are responsible for it. The use of dynamic load profiles and additional metering points should also help to reduce the amount of UFE. Additional metering points will also allow the UFE to be properly allocated to those who cause the UFE losses.

We will direct the UDCs to keep us apprised of the ISO's efforts to control UFE losses. The UDCs should also develop a plan to place more meters at strategic points in the transmission and distribution system to detect where the UFE losses are occurring and who is responsible for those losses. The UDCs shall file such a report on or before March 31, 1998. Interested parties may file comments to this report on or before April 24, 1998. As discussed below, the Commission shall examine the UFE issue in 1998.

F. Future Review

1. Introduction

The UDCs contend that the issues related to load profiling are complex and contentious. In addition, any adopted changes are likely to result in significant system changes which require substantial lead times to implement. Due to these considerations, the UDCs propose that the interim load profiling methodology, as discussed earlier, be adopted for January 1, 1998. However, the UDCs believe that a proceeding should be opened in 1998 to further examine load profile development methodologies. The UDCs propose that among the issues to be deferred are: segmentation proposals beyond the UDCs' current proposals, more advanced reconciliation techniques, and more advanced procedures for settlement of energy imbalances.

The Workshop Report states that most workshop participants are in accord with the UDCs' proposal for addressing unresolved load profiling issues in a future Commission proceeding. They believe that the proceeding should begin as soon as possible after January 1, 1998, and implementation of the approved methodology should be scheduled for no later than January 1, 1999.

The UDCs propose the following schedule:

1st quarter 1998	Status report on use of load profiles Workshops and workshop reports
2nd quarter 1998	Hearings, if necessary
3rd quarter 1998	Commission decision
January 1, 1999	Implementation

The CEC staff proposed to implement a more permanent load profiling design in 1999 so that there will be one year's worth of data when the Commission reevaluates load profiles in 2000. The CEC staff also suggests that data collection include the PX price variation, direct access penetration into residential and commercial sectors, and energy imbalance costs due to load profile errors.

2. Comments On Future Review

AEI believes that the Commission should immediately form a load profile evaluation group within the Commission or the CEC. The purpose of the group would be to assess the accuracy of both UDC load profiles and retailer load profiles, for settlement and CTC calculation applications. This group should also regularly talk with the ISO to discuss any irregularities that the ISO may observe with respect to system load errors. If persistent errors recur, an independent review of each retailer's load profiles should be undertaken at the expense of the retailers.

AEI also contends that an ESP should be permitted to estimate its own load profiles as soon as it has sufficient information about its own customers. Allowing the ESPs to estimate their own load profiles will reduce cost-shifting by increasing the settlement accuracy of retailer power generation costs and will also promote innovative rate and marketing programs.

DGS/UC/CSU contend that the majority of the parties in attendance at the workshop indicated a desire to have further proceedings about load profiling take place as soon as possible in 1998.

Calpine et al. contend that the UDCs' proposed schedule is too long. Calpine et al. recommend that a status report on the use of load profiles be prepared by March 1, 1998, that hearings be held in April, that a Commission decision issue in June 1998, and that the remaining load profiling issues be implemented by July 1, 1998.

ORA agrees with the CEC that workshops should begin as soon as possible to develop an improved load profiling method for 1998. If the workshops cannot develop consensus on an improved approach, ORA recommends that the Commission adopt the equations that ORA presents in Attachment B of its July 1, 1997 comments, and that hearings be scheduled in early 1998 to resolve the other load profiling issues.

Edison comments the UDCs' proposal offers a simple and pragmatic approach for implementing load profiling on January 1, 1998. Edison contends that the recommendations for expanded load profiles for use on January 1, 1998 threaten implementation of direct access for smaller customers. To conduct a hearing to develop

new load profiling methodologies is a poor use of scarce resources in the time allotted. Edison recommends that the Commission adopt the UDCs' proposal at this time, and defer any further consideration of load profiling until the first quarter of 1998, at the earliest.

3. Discussion Regarding Future Review

We agree that the Commission needs to revisit a number of different load profiling issues in 1998. However, we do not believe that the UDCs' schedule is the one that should be followed. As discussed above, we plan to move toward the use of dynamic load profiles almost immediately. We will also explore whether the dynamic load profiles should be further segmented. Other issues involving the use of load profiles should also be addressed as expeditiously as possible in 1998.

To assess the effects of load profiling, and to determine how load profiling methodologies and administration can be improved, the Commission needs to become involved in monitoring the use of load profiles for direct access. A substantial part of the data may come from the UDCs, the ISO, the PX and other market participants. To evaluate the type of data that the Commission staff should gather and that market participants should maintain, the Energy Division should hold a workshop with interested parties within 75 days from today's date. At the conclusion of the workshop, the Energy Division shall prepare and file a workshop report with its recommendations. The report shall be filed within 100 days from today's date. Interested parties may file comments on this workshop report within 120 days from today's date. The Commission shall delegate to the assigned Commissioners the authority to issue whatever rulings may be necessary to establish a monitoring program to evaluate the effects of load profiling, and to determine how the load profiling methodologies and procedures can be improved.

G. Implementation Costs

1. Introduction

The Workshop Report states that the UDCs' proposal provides for load profiles that are based on existing rate categories, systems, procedures, load research

meters, and samples. For Edison, the use of dynamic load profiles will result in modifications to its processes in order to acquire, update, and process data on a real time basis. Costs will be incurred to maintain these profiles, apply them in customer bills and ISO settlements, and disseminate them to the marketplace.

The Workshop Report states that the current UDC proposal requires minimal incremental costs to make customer class-based profiles available on January 1, 1998. The UDCs plan to recover the costs for the changes to its systems and processes pursuant to Section 376. If additional segmentation or dynamic updating of load profiles is required, the UDCs will incur additional costs, and the UDCs will seek additional funding for recovery of these costs. Several ESP and customer representatives expressed opposition to allowing the UDCs to recover these costs through Section 376. The Workshop Report suggests that the Commission consider the tradeoffs between certain UDC implementation costs and the possible resulting increase in the accuracy of the load profiles if additional segmentation or dynamic profiling is used.

2. Comments On Implementation Costs

Calpine et al. do not object to having PG&E and SDG&E recover the cost of dynamic load profiles and additional segmentation through Section 376, so long as there is reasonable regulatory oversight by the Commission as to the amounts of such costs. Calpine et al. state that the cost associated with the development of dynamic load profiles and greater segmentation options is the price which must be paid for developing and implementing a more efficient market.

Enron comments that it plans to closely examine all Section 376 cost recovery requests by the UDCs. At this time, Enron does not have sufficient information to agree that the UDCs' costs to create load profiles, maintain profiles, apply them to customer bills and ISO settlements, and disseminate them to the public are properly recoverable under Section 376.

3. Discussion

We previously discussed direct access implementation costs in D.97-05-040. Consistent with that decision, the UDCs may record in the subaccounts of the Industry Restructuring Memorandum Account (IRMA) the costs that are attributable to the implementation of direct access. As noted in D.97-05-040, the booking of costs to these subaccounts is no guarantee that the UDCs will be entitled to recover these costs.

Findings of Fact

1. In D.97-05-040, the Commission ordered that the investor-owned electrical corporations hold a workshop with other interested parties to develop statistical load profile methodologies.

2. The load profile workshop was held on June 5, 1997, and the Workshop Report was filed on June 16, 1997.

3. A meeting was held on July 16, 1997 to discuss whether an exemption from the metering requirement should apply to customers with a maximum demand of 20 to 50 kW, and the Eligibility Supplement was filed on August 8, 1997.

4. On August 1, 1997, the Profiles Supplement was filed, and the load profile data for current rate categories were made available to interested parties, except for Edison's dynamic load profiles for its Domestic and GS-1 customers.

5. D.97-05-040 permits customers with maximum demands of less than 20 kW to participate in direct access through load profiling.

6. The UDCs propose the adoption of an interim load profile approach that creates load profiles in existing rate categories that are based on daily load shapes.

7. In general, load profiling is the process of taking the cumulative kWh usage of a customer over a billing cycle and assigning it to individual hours in the cycle, based on the aggregate characteristics of the customer segment in which the customer resides.

8. Dynamic load profiles are created by reading load research meters on a daily basis, and producing daily load shapes which reflect the actual usage for that customer segment for the day.

9. Edison proposes to use dynamic load profiles for its Domestic and GS-1 classes.

10. Static load profiles are created by averaging historical data from load research samples by class, and creating load shapes that approximate customer segment usage for the given day.

11. PG&E and SDG&E propose to use static load profiles for the majority of their rate categories.

12. Deemed load profiles are created by using engineering estimates to create daily load shapes, and are used for rate schedules with predictable loads such as street lights and traffic control devices.

13. The Workshop Report states that for PG&E and SDG&E, the use of dynamic load profiles is not feasible by January 1, 1998.

14. The advantage of dynamic load profiling is that it reflects fairly current conditions which affect customer load.

15. Static load profiles which use past history as a reflection of future consumption may not accurately reflect current consumption because of recent weather conditions or other relevant variables affecting electric usage.

16. Regression techniques and other methods to improve the static load profiles will take some time to implement.

17. Edison plans to use a static load profile for its master metered customers who serve residential customers.

18. The Commission stated in D.97-05-040 that the issue of master meters in a direct access environment would be addressed in an upcoming decision.

19. Except for street lights and traffic lights, and possibly agricultural customers, the use of dynamic load profiling appears appropriate for all other customer classes, because current conditions may not be adequately reflected in the static load profiles which rely on historical data.

20. The load of street lights and traffic lights is fairly consistent from day to day and year to year.

21. Kirkwood, PacifiCorp, Sierra Pacific, and SCWC have not submitted any load profiles or commented on the Workshop Report or the supplements.

22. The choice of technology to carry out the metering functions is best left to the marketplace.

23. SDG&E and PG&E propose to apply deemed load profiles to all of their street light accounts.

24. Edison proposes to restrict the use of deemed load profiles to street lights that are owned or maintained by Edison.

25. Customer-owned street lights should not be barred from load profiling simply because of who owns or maintains the photocell.

26. Segmentation allows the variety of customers within a rate schedule to be further divided into more discrete categories of similar customer types.

27. The use of segmentation for dynamic load profiles could further enhance the accuracy of the load profiles by subdividing customers within a rate schedule into more discrete customer load profiles, but the development of criteria for dividing customer groups into additional segments is likely to take some time.

28. Consideration of segmented load profiles should be deferred to 1998.

29. D.97-05-040 left open the question of whether load profiles for certain customers whose maximum demand is equal to greater than 20 kW, but less than 50 kW, should be permitted.

30. In the Eligibility Supplement, PG&E and SDG&E propose that load profiles for all direct access customers up to 50 kW be permitted on an interim basis using the UDCs' simplified load profile methodology.

31. Edison opposes the interim blanket exemption, and proposes that a temporary backlog exemption be adopted instead.

32. The Commission does not know for certain how much hourly interval meters will cost, what kinds of monthly fees will be associated with such meters, and what the availability of such meters will be.

33. If the cost of having an hourly interval meter is high, or if there is a waiting list to have such meters installed, this will discourage customers from signing up for direct access.

34. If the cost of having an hourly interval meter is low, and hourly interval meters can be readily installed, it is likely that more customers will choose direct access.

35. If load profiles for customers with a maximum demand of 20 to 50 kW are not permitted, the number of customers who select direct access in this range of usage will depend on the affordability and availability of hourly interval meters.

36. If load profiles for customers with a maximum demand of 20 to 50 kW is permitted, more customers will be eligible for direct access, but that is likely to increase the amount of error due to inaccurate load profiles.

37. D.97-05-039 contemplates that starting on January 1, 1999, any retail energy service company may provide metering systems for any customer.

38. D.97-05-039 did not address who should supply the meter to a load profile customer.

39. The unbundling of metering services does not really affect customers on load profiles because a load profile customer is likely to remain on a kWh, time-of-use, or demand meter, until the customer chooses to install a meter which meets the standards for direct access metering.

40. The workshop assessing the impact of the metering requirement on customers with a maximum demand of 20 to 50 kW should also address the inconsistencies in the load profiles regarding the 20 kW threshold.

41. If the load profiles do not match actual customer usage, a discrepancy in the UFE will result.

42. Separately identifying the UFE that is attributable to load profiling will help to control the size of the UFE, and to allocate the UFE losses to those who are responsible for it.

43. The use of dynamic load profiles should help to reduce the amount of UFE.

44. Additional metering points should help to reduce the amount of UFE, and to allow the UFE to be allocated to those who cause the UFE losses.

Conclusions of Law

1. Edison's motion to accept its comments to the Eligibility Supplement one day out of time should be granted.

2. The use of dynamic load profiles for the three major electric utilities in this state will result in uniform load profiling methodologies throughout most of the state, and will result in improved accuracy of the load profiles.

3. The UDCs' proposal to use static load profiles on an interim basis for the majority of the customer classes, and Edison's use of dynamic load profiles for its residential and small commercial and industrial customers, should be adopted.

4. Until the Commission resolves the issue of how direct access affects master metered customers and sub-metered customers, a static load profile for master metered customers should not be offered.

5. The UDCs should take action immediately to ensure that dynamic load profiling is in place for all the customer classes, except for agricultural customers, street lights and traffic lights, no later than July 1, 1998.

6. Unless exempted from having to provide direct access to its customers, Kirkwood, PacifiCorp, Sierra Pacific, and SCWC remain obligated under Ordering Paragraph 5 of D.97-05-040 to provide load profiles to its customers with loads of less than 20 kW.

7. The issue of whether other entities should be allowed to create and design load profiles should not be addressed at this time, but should be revisited in 1998.

8. The UDCs should make all street lights, regardless of ownership, eligible for direct access using deemed load profiles.

9. The UDCs should be permitted to require in their tariffs and profiles that the customer must meet or exceed the photocell maintenance requirements of the UDC in order to be eligible for direct access using that load profile.

10. The photocell maintenance requirement is reasonable because it helps to ensure that the street light usage is consistent with the estimate of usage in the deemed load profiles.

11. Since electricity usage for traffic lights is fairly consistent, SDG&E's use of a static load profile for its traffic lights accounts should be permitted since the usage is unlikely to vary much from a deemed load profile.

12. In deciding whether load profiles for customers with a maximum demand of 20 to 50 kW should be permitted, the Commission should weigh the cost and availability of hourly interval meters, and what may happen if the Commission allows or does not permit the use of load profiles for this customer group.

13. The interim blanket exemption proposal of PG&E and SDG&E should be adopted because it will permit those customers who fall within the 20 to 50 kW range to examine the costs and benefits of moving toward an hourly interval meter, while being able to use load profiles on an interim basis.

14. The interim blanket exemption will provide an opportunity for market forces to determine how much hourly interval meters should cost, and allow the supply of such meters to match the demand.

15. Interim load profiling for 20 to 50 kW customers is equitable given the uncertainty over the cost and availability of hourly interval meters, and is consistent with the provisions of Section 365(b).

16. To access the impact of the metering requirement on 20 to 50 kW customers, the Commission should convene a workshop no later than May 30, 1998.

17. For 1998, the UDC is the only approved provider of metering and meter services for customers who take service on load profiles, unless the customer already owns a meter capable of providing data for direct access, but chooses to take direct access from a load profile instead.

18. To the extent load profiles are used in a transaction over which we have jurisdiction, the same load profile that a given customer uses should be used for all applications.

19. The UDCs should develop a plan to place more meters at strategic points in the transmission and distribution system to detect where the UFE losses are occurring, and who is responsible for the losses.

20. The Commission needs to revisit a number of load profiling issues in 1998.

21. To assess the effects of load profiling, and to determine how load profiling methodologies and administration can be improved, the Commission needs to monitor the data associated with the use of load profiles for direct access.

22. Consistent with D.97-05-040, the UDCs may record in the IRMA subaccounts the costs that are attributable to the implementation of direct access.

23. The booking of costs to the IRMA subaccounts is no guarantee that the UDCs will be entitled to recover these costs.

O R D E R

IT IS ORDERED that:

1. The motion of Southern California Edison Company (Edison) to accept its comments to the Eligibility Supplement one day out of time is granted. The Docket Office is directed to file Edison's comments to the Eligibility Supplement as if it was filed on August 11, 1997.

2. The interim load profile approach that was proposed by Pacific Gas and Electric Company (PG&E) and San Diego Gas & Electric Company (SDG&E) is approved.

   a. The interim load profile period shall last until dynamic load profiles for all customer classes, except for street lights and traffic lights, can be instituted.

   b. PG&E and SDG&E shall file with the Docket Office and serve a status report within 30 days from today's date as to the reasons why dynamic load profiling cannot be instituted for their residential and small commercial and industrial customers by January 1, 1998.

      (1) Such a status report shall also inform the Commission as to what steps they will take to ensure that dynamic load profiling can be in place beginning on July 1, 1998, as well as the estimate of the costs that they anticipate spending to institute load profiles.

      (2) Interested parties may file comments on the status report within 21 days of the status report's filing date.

   c. Edison shall be required to file and serve a status report within 30 days from today's date on what steps it needs to take to ensure that dynamic load profiling can be instituted for the other customer classes described in this decision by July 1, 1998.

(1) The status report shall also estimate the costs that Edison anticipates spending to institute the remaining dynamic load profiles.

(2) Interested parties may file comments on the status report within 21 days of the status report's filing date.

d. Edison shall make its dynamic load profiles for its residential and small commercial and industrial customers available to others starting on November 1, 1997.

3. Kirkwood Gas and Electric Company, PacifiCorp, Sierra Pacific Power Company, and Southern California Water Company shall file a status report with the Commission's Docket Office within 30 days from today explaining what their intentions are with respect to the offering of load profiles to their customers who have a maximum demand of less than 20 kW, their reasoning for their actions, and what their timetable is for implementing load profiles.

a. The status report shall be served on the service list for this proceeding, and interested parties may file comments on the status reports within 21 days of the report's filing date.

4. The interim blanket exemption proposal of PG&E and SDG&E is adopted.

a. PG&E, SDG&E, and Edison shall make available interim load profiles for customers with a maximum demand of 20 kW or greater, but less than 50 kW.

b. The 20 to 50 kW load profiles shall be made available for use no later than January 1, 1998, and shall remain in effect until September 30, 1998 unless extended by the Commission.

5. PG&E, SDG&E, and Edison shall institute dynamic load profiles for all eligible load profile customers, as discussed in this decision, no later than July 1, 1998.

6. The Energy Division shall convene a workshop, in conjunction with the utility distribution companies (UDCs) and other interested parties, within 100 days from today, to discuss the process for segmenting the current customer rate schedules into more segmented rate categories.

a. The Energy Division shall prepare a workshop report about the segmentation issues and its recommendations, and shall file the report with the Commission's Docket Office within 130 days from today, and shall serve the report on those attending the workshop, and anyone else requesting a copy of the report.

(1) Interested parties may file comments to the report within 21 days of the filing of the report.

7. The Energy Division shall convene a workshop with the UDCs and other interested persons no later than May 30, 1998, to assess the impact of the metering requirement on 20 to 50 kW customers, to determine whether the load profiles should continue past September 30, 1998, and to examine the inconsistencies in the load profile cut-off points.

a. The Energy Division shall prepare and file a workshop report with the Commission's Docket Office within 30 days of the workshop's conclusion, and serve it on those in attendance at the workshop, and to anyone else requesting a copy.

(1) Interested persons may file comments to the workshop report within 21 days of such filing.

8. The Energy Division shall convene a workshop with the UDCs and other interested persons no later than February 15, 1998, to determine whether there should be dynamic load profiles for agricultural customers.

a. The Energy Division shall prepare and file the workshop report by March 13, 1998, and serve it in accordance with Ordering Paragraph 7.a.

(1) Interested persons may file comments to the workshop report no later than March 31, 1998.

9. The UDCs shall apprise the Commission of the independent system operator's efforts to control unaccounted for energy (UFE) losses, and shall develop plans to place more meters at strategic points in the transmission and distribution system so as to detect losses attributable to UFE.

a. The UDCs shall file a report regarding the above on or before March 31, 1998 with the Docket Office, and shall serve the report on the electric restructuring service list.

(1) Interested parties may file comments to the report on or before April 24, 1998.

10. The Energy Division should hold a workshop within 75 days from today to discuss with the UDCs and other market participants the type of data that the Energy Division should gather, and the type of information that the UDCs and other market participants should be required to maintain, to assess the effects of load profiling, and to determine how load profiling methodologies and administration can be improved.

a. The Energy Divison shall prepare and file a workshop report with the Docket Office within 100 days from today, and serve that report on the parties who attended the workshop, as well as on anyone else requesting a copy of the report.

(1) Interested parties may file comments on this workshop report within 120 days from today.

b. The Commission shall delegate to the assigned Commissioners the authority to issue whatever rulings may be necessary to establish a monitoring program to evaluate the effects of load profiling, and to identify how the load profiling methodologies and procedures can be improved.

This order is effective today.

Dated _____, at San Francisco, California.

TABLE OF CONTENTS