Continuing effort on DQI issues by a new DQI Subteam of the OCC

Recommendation 1 was for the CPUC to recommend the continuing effort of the DQI working group as a subteam of the Rule 22 Operations Coordinating Committee. (OCC). In the absence of a CPUC decision this administrative change has already taken place. The DQI Working Group still meets on a monthly basis as a subteam of the OCC. In the original April 6th report Section 1.2.4 describes twelve activities still needed to be performed by the new DQI subteam. While waiting for a CPUC decision, several of these activities have been worked on and are discussed elsewhere in this report. Several are works in progress and there are others that still need to be more clearly defined and worked on by the group. The DQI working group has developed an open issues tracking list to assist them in focusing on the issues. This list is included as Attachment A of this report.

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│               DQI WHITE PAPER UPDATE                 │
│               CPUC RECOMMENDATION #2                 │
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Usage Data Reconciliation (UDR, Section 3.2.1)

In its original report filed with the Commission on April 6, 1999, the Data Quality & Integrity

Working Group recommended that:

- The Commission approve Usage Data Reconciliation (UDR) in concept.

- The UDCs, using input provided by the Data Quality & Integrity Working Group, attempt
  to standardize certain features of the UDR, including how the results are communicated to
  relevant parties.

- The UDR data provision requirements and procedures be documented in accordance with
  the process being developed by OCC and in the individual UDC operating manual for
  ESPs.

- The ISO direct scheduling coordinators to review, with their associated ESPs, the UDR
  results for those ESP accounts they schedule, as part of the SCs' responsibility under the
  ISO Metering Protocol (Section 4.2.1) to provide accurate and timely Settlement Quality
  Meter Data to the ISO.

Since the original DQI Report was filed with the Commission, Pacific Gas & Electric, San

Diego Gas & Electric, and Southern California Edison have all developed Usage Data

Reconciliation Systems that compare the hourly settlement total reported to the ISO by the

ESPs' scheduling coordinators, to comparable data generated from the UDCs' usage

measurement and billing systems. In developing these systems, the three UDCs worked

together to establish common data requirements that minimize the inconvenience on the part of the ESPs. The files submitted to the UDCs by the ESPs, or in many cases their scheduling coordinators, are very similar to the files submitted to the ISO, with only a minor change to one field to allow identification of the ESP.

Southern California Edison was the first to develop a UDR System, and its system has been operational since the third quarter of 1998. SCE has twice shared data from its UDR system with its ESP customers, initially for the final seven months of 1998 and more recently for the first quarter of 1999. The data packages provided to the ESPs include spreadsheets and graphs that chart the ESP's reported usage, the UDC's calculated usage, and the variance for each hour, day, and month of the quarter. The data packages also include computer diskettes containing the data so that the ESP can perform its own further analysis.

Southern California Edison has continued to refine its UDR System to a point where it can effectively identify variances of less than 1% of the reported usage. SCE plans to continue to provide its ESP customers with quarterly data packages of the reconciliation results, and to work with those ESPs to further refine the accuracy of its UDR System and to assist the ESPs in improving their settlement reporting processes. So far, the response from ESPs has been very positive.

The other two UDC's have recently completed development of UDR Systems, began collecting settlement data from ESPs, and started analysis of that data. Their plans are to proceed similarly to SCE. The three UDCs have continued to meet on a regular basis to standardize approaches and formats for disseminating results to the ESPs.

Southern California Edison has included a chapter in its ESP Direct Access Kit, documenting the data requirements for its UDR process. The other UDCs will likely include similar sections in their ESP manuals as the processes are more firmly established.

The ISO recently conducted an audit workshop to assist scheduling coordinators in the development of audit plans to fulfill the ISO's tariff requirement that annual audit be performed by the SCs. The audits are for the entities that the SCs represent, to verify the accuracy of the settlement data that the SCs submit to the ISO. A suggestion offered at the workshop was that the UDR results be considered as a key tool in performing such audits. The UDR results could provide an independent third party confirmation of the accuracy of the ESP's settlement reporting. This could significantly increase the efficiency of those audits and focus the audit effort on the areas of greatest concern.

Bundled Service Usage Data Verification (Section 3.2.1)

Appendix G of the original DQI report contains write-ups provided by the UDC's describing how they presently verify internally that they are accurately reporting bundled-service usage to the PX. There were four alternatives written for this recommendation. These alternatives and the activities that have taken place sine the original report are listed below.

Alternative 3(a). CPUC staff should work with the new DQI Subteam to develop a method for CPUC to verify that UDC's are accurately reporting bundled-service usage to the PX.

There are no activities to report in this area since the DQI Report was issued.

Alternative 3(b). CPUC authority over regulated utilities is sufficient to ensure compliance and accuracy of usage data. Should the CPUC decide to investigate this matter, it should be reviewed in only one forum, such as the Revenue Adjustment Proceeding. However, this topic was not explicitly investigated in the most recent RAP.

There are no activities to report in this area since the DQI Report was issued.

Alternative 3(c). the issue of the accuracy of bundled-service usage data reported to the PX should be addressed at the ISO level, preferably at the existing ISO workshops.

The ISO has implemented their Tariff requirement for SCs to perform a self-audit of the meter data processing systems that affect the settlement quality meter data submitted by the SCs to the ISO. The ISO has issued audit guidance (see attached) and has held an audit workshop for the

SCs and other Market Participants. As with any audit, the SC self audit is performed on a sample basis.

Alternative 3(d). The CPUC should require that the UDC's conduct (or engage an independent qualified entity to perform) audits of their bundled-service meter data processing systems. This audit should be performed to ensure proper handling and reporting of metered usage data. The DQI Subteam should develop the criteria for this audit within 6 months of the CPUC's request for the audits.

The ISO has implemented their Tariff requirement for SCs to perform a self-audit of their meter data processing systems. The ISO issued audit guidance (see attached) and has held an audit workshop for the SCs and other Market Participants. Because the PX is an ISO Certified SC, the PX is required to perform the self-audit. The following is a summary of the audit guidance and the audit timeline:

- Audit time period: April 1, 1998 – June 30, 1999.

- There are two components of the audit, a process controls review and a verification and testing of the process controls for the Settlement Meter Data Processing level.

- Meter Data Process Flows, for this audit, were divided into three levels:
  * Meter Facility
  * Meter Reading
  * Settlement Meter Data Processing

- Only the Settlement Meter Data Processing will be sampled and tested.

- An audit plan was due to the ISO on October 15, 1999 and the audit report is due March 31, 2000.

An outline of the ISO document which lists the requirements and the scope of the audit is included as Attachment B of this report.

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MDMA Performance Monitoring Reports (Section 3.2.2)

At this time, each of the UDCs have implemented systems to create MDMA Performance Monitoring Reports. The report methodologies of the three UDCs are quite consistent with each other. However, there are minor differences among the reports, which have been deemed by DQI to be too minor to incur the cost of eliminating these differences.

The differences are:

1. In the timeliness standards for interval meter data, some percentage of accounts due each "day" after the scheduled read date. Since "day" can be interpreted different ways, one of the UDCs has interpreted this to be "working days", and the other two UDCs have been interpreted as "calendar days". Both interpretations are reasonable and correct. The UDCs who are reporting MDMA performance based on calendar days have agreed that, in the event the ISO adjusts its reporting schedule to be based on working days, they will adjust their reporting to be based on working days as well.

2. There are slight variations around when the MDMA is given credit for posting data for a specific account, when the initial data submission is not considered acceptable for billing. These variations are minor, and have been deemed to be acceptable variations.

Update

No changes are needed or recommended to the current MDMA Performance monitoring

reports.

Independent Audits of Specific MDMA and MSP Activities (Section 3.2.3)

This recommendation had three issue sections that dealt with the timing of the audit, the requirement for subsequent audits and who should review the audit report. Each of these sections had alternatives listed.

5(a).Timing of Initial Audits

This issue had two alternatives:

- *To have the independent audit within one year of the CPUC decision*

- *To have the independent audit within one year of the decision or the development of audit templates by the DQI subteam*

The Data Quality & Integrity (DQI) Workgroup has completed draft audit templates for both the Meter Service Provider (MSP) and the Meter Data Management Agent (MDMA) functions. Both draft audit templates have been distributed to various workgroups for their review and comments. The DQI workgroup has received feedback on the draft audit templates and is currently incorporating recommended changes in order to produce a final version of both audit templates. The DQI workgroup has included the following areas in the development of the MSP draft audit template:

- Compliance with standards

- Meter worker skill requirements

- Meter installation procedures

- Meter calibration requirements

- Meter maintenance requirements

- Procedures for corrective action

The DQI workgroup has included the following areas in the development of the MDMA draft

audit template:

- Availability of data

- Timeliness of data

- Accuracy of data

- Data estimation standards

- Server operation requirements

- Data security issues

- Disaster recovery standards

- Hiring practices & screening processes

- Procedures for corrective action

The following items have generated questions from the various workgroups and need further

clarification:

- Is the working day or calendar day to be used for interval data timeliness?

- Who will review the completed MSP and MDMA audit reports?

- What are the repercussions from findings in the audit reports?

5(b). Requirement for Subsequent Audits

This issue also had two alternatives for subsequent audits.

- *After the first audit to have a new audit on a reasonable, regular basis unless the CPUC determines a need to audit sooner*

- *After the first audit, any additional audits should be "event driven" where persistent problems arise in data quality*

The Independent Service Organization (ISO) requires each Scheduling Coordinator (SC) to conduct (or engage an independent, qualified entity to conduct) annual audits and tests of the Metering Facilities of the SC Metered Entities that it represents, and the Meter Data provided to the SC, in order to ensure compliance with all applicable requirements of any relevant Local Regulatory Authority (LRA). In order to complete this requirement, the various MDMA and MSP functions must be reviewed on an annual basis.

5 (c) Who Should Review Audit Reports

There were four alternatives listed for this section which included:

- *Audit reports should be filed with the CPUC Energy Division*

- *Notice of successful audit completion, problems identified, and corrective actions taken should be sent to the Energy Division*

- *The DQI subteam should consider whether ESPs and UDCs should regularly receive and review audit reports for those MSPs and MDMAs they directly contract with. The subteam may make a recommendation in this area.*

- *Market participants should review each other's audit reports as allowed by existing contracts or tariffs.*

No activities has happened with this section of the recommendation since the original DQI report.

DQI WHITE PAPER UPDATE
CPUC RECOMMENDATION #6

Event Reports (Section 3.2.5)

In the final DQI Report the group recommended the following:

♦ The CPUC should approve in concept the event reports and incident logs being developed

for various market participants, with details to be developed collaboratively through the

DQI and other OCC Subteams.

♦ Once the items covered by these reports are identified, the DQI Subteam should request all

market participants to provide any applicable, available benchmark statistics on these items

to be used for comparative purposes.

♦ The recommendations developed by the DQI Subteam should specify who has access to

the data, at what level of detail, and how these reports will be used to solve Data Quality

and Integrity problems.

Since the April report was filed the DQI sub-group has worked with the Meters Specific

Services (MSS) and the Meter Agent Validation Issues (MAVI) sub-groups to develop

templates for the event reports. Areas of concerns from these sub-groups include:

- Cost to Implement
- Level of Detail Required
- Areas that should/could be reported elsewhere
- Evaluation/policing if these events are still problems

Also since April these Rule 22 sub-groups have developed a bi-directional communication process. This process is called the Meter and Data Exception Notice (MADEN) The objective of the Meter & Data Exception Notice is to

- establish bi-directional communication.

- have timely resolution of metering reading and metering issues and integrate established dates for settlement.

- facilitate problem resolution and root cause analysis.

The METER & DATA EXCEPTION NOTICE (MADEN) process is used to formally communicate meter reading and metering issues between ESP, Market Participants and the UDCs. This process is to be used when the issues are an "exception" outside "business as usual". A communication is generated each time there is a meter reading or metering issues occur and communicated a minimum of daily.

and it's purpose is to communicate exceptions or instances where some meter or data work is needed in order to produces timely bills to their mutual customers.

The development and implementation of this process has resulted in the dramatic reduction of incidents/categories on the event templates that were developed and recommended in the DQI Report.

With the dramatic reduction of events occurring and the concern from the market participants of committing resources for little benefit, it is recommended that the DQI table the implementation of event reporting at this time. Market participants feel that if the other detection mechanisms (MDMA Performance Monitoring, the Usage Data Reconciliation Process, MSP/MDMA

Audits, ISO/PX Audits) or if circumstances indicate a need is necessary, then the DQI sub-

group should implement the event reporting process.

Applicability of Data Quality and Integrity Measures

There were two alternative recommendations. Alternative 7(a) was to have the CPUC endorse

the general principle that all monitoring, auditing and other Data Quality and Integrity

requirements imposed on market participants must apply consistently to all entities performing a

given function. Alternative 7(b) was to delete this recommendation entirely.

This is already happening now. It has been accepted as a de facto condition of the market that

all requirements made on entities performing any given function be treated consistently when

they are monitored or audited for any of those functions.

Cost Impacts of Data Quality & Integrity Measures

There were three alternatives to this recommendation. Alternative 8(a) states that the cost impacts on parties to comply with Data Quality and Integrity requirements should be competitively neutral. Alternative 8(b) states that the costs are necessary for the functioning of the market but that the benefits from these requirements are expected to exceed the costs. Alternative 8(c) states that the appropriate cost allocation proceeding be the forum for allocating UDC costs.

The market place has taken cost impacts into consideration when trying to comply with DQI requirements and analyzes the net benefits versus the costs. A good example of this would be the elimination of the event reports. The cost of implementing these reports, plus having the information exchanged via the MADEN forms far exceeds the benefits of having the event reports at this time. The CPUC has also set up the ERCA 376 filing which sets up cost recovery for the UDCs for Direct Access costs for certain functions that were not anticipated. Examples of this would be the change to EDI for exchanging data and the cost recovery for performing the Usage Data Reconciliation. (UDR)

DQI WHITE PAPER UPDATE
UFE (Not Included in the Original DQI Report)

The Data Quality and Integrity (DQI) Report, the Unaccounted-For-Energy (UFE) and

Upstream Metering Report were both essentially completed in late 1998 before much

experience had been gathered in operation of the new California electric market. These two

reports have been published and the market has completed 18 months of operation where

several changes have occurred during this time to reduce UFE.

During the latter half of 1998, several market participants expressed concerns to the ISO that

UFE charges were high.   The ISO launched an investigation of the issue which became known

as the UFE Project. Out of its investigation, the ISO agreed to accept resubmitted meter data

from its Scheduling Coordinators from the first 9 month of the market (i.e. April '98 to

December '98) and to correct for any meter data errors that may have occurred during the start

up of the market. In addition, the ISO verified the data from the generation and tie meters that it

polls. As a result of the UFE Project, the ISO reallocated 32 million MWhrs valued at

approximately $75 million through adjustments in UFE, Imbalance Energy, Neutrality, and Grid

Management charges.

The other changes in the market which should reduce UFE came out of the ISO's Settlement

Improvement Team (SIT) process which addressed issues raised by market participants.

From this process, changes were made in the determination of UFE transmission losses and in

the ISO Payment calendar.

In the case of UFE transmission losses changes were made both in the way that statewide

transmission losses are calculated and how they are allocated to the three UDC service areas.

The calculation of statewide transmission losses for UFE will now be based on actual power flows rather than on scheduled power flows, and those statewide losses allocated to the UDC areas be based on apportionment of losses from actual current flow calculations.   The Tariff change addressing UFE transmission losses was filed with the Federal Energy Regulatory Commission (FERC) in September 1999, and implementation is likely in the first half of 2000. The changes proposed to the ISO Payment calendar were not done specifically to improve UFE, but that is likely to be one of the outcomes.   Market participants wanted more time in the settlement calendar to accomplish all the various tasks that needed to be performed. As a result, the ISO agreed to move to a calendar based on business days rather than calendar days with some additional time allowed for key settlement task.   One of those changes was the extension in time by about 4 days in the due date for meter data submission. This additional time will improve the quality of the meter data submitted by market participants, and consequently will reduce UFE.

The actual statewide UFE for the first 16 months of the market is shown in the attached graph. This data, provided by the ISO, reflects the adjustments made by the ISO to 1998 UFE from the UFE Project findings. The average UFE for this period as a percentage of Load was - 0.75%.