PG&E Corporation

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SENIOR DIRECTOR – GAS TECHNOLOGY
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DIRECTOR – CUSTOMER IMPACT
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From: INTERNAL AUDITING

Subject: Audit of Gas Imbalance Statements for Core Transportation Agents

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Objective and Scope

In Resolution G-3440, the California Public Utilities Commission (CPUC) required the Utility to audit its records, documents, and data used to prepare its gas imbalance statements and accounting adjustments for Core Transport Agents (CTA)[1] every three years. The first audit was completed in June 2011.[2]

The Utility provides balancing services to its transmission customers, including CTAs, to account for the difference between the gas delivered to the Utility for that customer's use and that customer's actual usage. Per Gas Rate Schedule G-BAL: Gas Balancing Service for Intrastate Transportation Customers (G-BAL), each month the Utility generates imbalance statements that are provided to the CTAs for managing their imbalances.

Internal Auditing (IA) performed this audit on behalf of the Utility. IA evaluated the Utility's manual and information technology (IT) processes, procedures, and controls to prepare and report imbalance statements to its CTA customers. IA also assessed the accuracy of the data used to prepare CTA imbalance statements during the audit period by performing extensive detailed testing. The review period for this audit is January 2011 through December 2013.

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[1] As part of the Utility's Core Gas Aggregation Service, core customers may elect to purchase gas from suppliers other than the Utility; these suppliers are known as Core Transport Agents.

[2] The CPUC issued the resolution in September 2010 and stated that the audit period should be three years. Due to the timing differences in the balancing process, the time period for the first audit covered August 2007 through December 2010 to ensure three years were audited.

Audit Approach

To conduct the audit, we reviewed the manual and automated processes that support the creation of CTA imbalance statements and evaluated IT controls to manage system and program changes that support the CTA process. We interviewed personnel from Energy Service Provider (ESP) Services, Analysis and Rates, Billing Operations, IT Business Technology, IT Operations, Gas Systems Operations, and Meteorology (Applied Technology Services).

To assess the accuracy of the data, IA selected samples of each of the major inputs into the imbalance equations and tied them back to their source systems, re-performed critical calculations, and validated the accuracy of CTA customer relationships. Exhibit A contains a detailed discussion of the scope and data testing performed during the audit.

Conclusion

Overall, IA found that the data used throughout the CTA imbalance statement process was accurate and IA's testing of data inputs found only a few isolated exceptions that were very minor in nature.

IA also concluded that the Utility's controls over preparing and reporting CTA imbalance statements need strengthening.[3] In particular, IA found that the Utility needs to address (1) a limitation of the Customer Care and Billing (CC&B) system that does not process customer requests to switch CTAs according to tariff provisions, (2) the process to review and approve cumulative imbalance adjustments, (3) procedures and documentation, and (4) IT controls related to user access to network share drives and change management. We consider these issues to be medium risk.[4] Details of these issues are discussed below.

Findings and Management Action Plans

1. <u>CC&B Customer Switches</u> (Medium Risk)

Background: Gas Rate Schedule G-CT: Core Gas Aggregation Service defines the terms of service as follows: "The initial term (length) of service under a Customer Authorization will be 12 consecutive months from the effective service date. Service shall continue month to month thereafter, regardless of the provisions or terms of any agreement between the Customer and the

[3] Internal Auditing uses the classifications of "adequate," "need strengthening," and "not adequate" in assessing controls.

[4] To classify risks, Internal Auditing uses the categories of low, medium, and high, based on the likelihood and significance of the risks resulting in harm to the Utility.

CTA…." Customer requests to switch are submitted by a CTA using an electronically submitted Direct Access Service Request (DASR) that is processed within CC&B.

Issue: While testing customer switches, IA noted two instances where the customer was switched in less than 12 months. After additional analysis, IA determined that there was no manual intervention, meaning that the switches occurred automatically. Through discussions with personnel in ESP Services and Meter to Cash Systems, IA found that the programming logic used in CC&B to calculate the customer switch date is not fully aligned with the tariff. As a result, under limited circumstances, the current programming allows customers to be switched in the 11th month, instead of after 12 months per the tariff.

Significance: Switching customers according to tariff provisions limits adverse effects on the CTA market and on CTA customers.

Management Action Plan: The Utility will develop an action plan to address this issue by September 15, 2014.

2. Cumulative Imbalance Adjustment Process (Medium Risk)

Background: As noted in Exhibit A, IA tested three of the seven cumulative imbalance adjustments during the audit period. One adjustment, which was related to a misclassification of billed usage, occurred during 2012, when a name and ownership change was made to 35 customer accounts due to the customers going into bankruptcy. This change severed the billing relationship with the CTA and those accounts were inadvertently assigned to the Utility's Core Gas Portfolio. This error was detected by the CTA and resulted in an adjustment, which was facilitated through the Utility's Billing Change Order process.[5] The CTA's April 2013 Cumulative Imbalance Statement was adjusted by 523,000 Therms.

Issue: IA found that ESP Services did not conduct an effective root cause analysis to identify the origin of the error and take steps to prevent its reoccurrence. While these types of adjustments are rare, IA believes that the Utility should develop a process to evaluate any non-standard imbalance adjustments and determine if a root cause analysis is necessary.

Although a true root cause wasn't identified, the customer relationship was severed during processing related to bankruptcy. IA also found that the processes to handle bankruptcy accounts that are served by a CTA are not documented.

[5] The Billing Change Order is a form that the Utility uses to document and approve customer billing changes that require tariff interpretation and is reviewed by a tariff analyst.

Significance: A process to evaluate non-standard adjustments will help identify where controls can be implemented to prevent or detect similar errors from occurring. Furthermore, documenting the process for handling CTA customer accounts in bankruptcy will help to minimize future errors.

Management Action Plan: The Utility will develop an action plan to address this issue by September 15, 2014.

3. Procedures and Documentation (Medium Risk)

A. Manual Procedures

Background: Gas balancing is mostly an automated process that depends on data sent from multiple source systems to the Advanced Billing System (ABS) where the data is processed and imbalance statements are created.

Issue: While the base processes supporting gas balancing are understood and designed to support the level of automation, we found that the Utility needs to improve its documentation of specific processes where manual intervention occurs.

1. CTA Account Set Up and Termination – Processes to ensure (1) CTAs meet credit and technical requirements before they're eligible to enroll customers, and (2) the CTA account closure doesn't impact balancing and outstanding invoices and balancing statements are in good standing.

    - While ESP Services has already created the procedure to certify CTAs ("Core Transport Agent Certification Guide"), it needs to be formalized.
    - The procedure to terminate a CTA needs to be created and formalized.

2. Retroactive Direct Access Service Request (DASR) – ESP Services and Direct Access Account Set-up Unit (DAASU) will retroactively revise a customer's switch date, on a case-by-case basis, in response to a customer's request.

    - ESP Services and DAASU created and posted two procedures ("Unauthorized Direct Access Service Request (DASR) Procedure" and "Retroactive Direct Access Service Request (DASR) Change Procedure") to the Guidance Document Library. However, during the audit DAASU team members informed IA that they were not aware that the procedure existed.
    - Neither procedure specifies when customer contact notes are required (i.e., especially when dealing with adjustments to customer CTA relationships).

3. Monthly Imbalance Statements – Reports that show the difference between the volume of gas the CTAs have scheduled on the pipeline for their customers (supply) and the volume their customers have used.

    - Customer Billing has created a procedure to review the monthly imbalance statements ("CTA Imbalance Statements QA Procedure") but it needs to be formalized.

Once revised, the Utility needs to monitor the communication and implementation of these new procedures.

Significance: Maintaining documented procedures and monitoring to ensure they are adopted decreases the risk of inappropriate or unauthorized transactions occurring and ensures that customers are treated consistently.

Management Action Plan: The Utility will develop an action plan to address this issue by September 15, 2014.

B. Determined Usage

Background: The Core Load Forecast model (CLFM) calculates the Determined Usage and sends it to (1) ABS for inclusion in the imbalance calculations, and (2) the Gas Transaction System (GTS) for communication to the CTAs. The CLFM model also sends an email with the Determined Usage to each CTA when the process is executed. Multiple organizations play a role in this daily process, including Meteorology, Gas System Operations (GSO), IT, and Customer Billing.

G-BAL defines the calculations the Utility uses to compute CTA imbalances along with the inputs to these calculations. G-BAL includes a provision that the Utility provide a Gas Day estimated usage (Determined Usage) that is used in the calculation of both the cumulative and operating imbalances. G-BAL requires the most recent Determined Usage generated by 7:15 AM each day to be used for balancing purposes. G-BAL also requires that if the Determined Usage is not generated by this time, the most recent previous forecast for the current gas day will be used. During our audit, a GSO employee was in the process of documenting the procedures for the Determined Usage process.

Issue: During our testing, we found two instances where the CLFM was run after 7:15 AM and the resulting Determined Usage was used for balancing purposes.[6] While both of these forecasts

[6] IA reviewed all 1,095 daily Determined Usage volumes generated during the audit period.

were communicated to the CTAs, by tariff, they should not have been used for balancing purposes, and instead the most recent prior forecast should have been used.

IA found that the current process does not prevent the use of a forecast generated after 7:15 AM. IA also found that current procedures do not include an exception process for documenting the reason why a forecast past 7:15 AM was used (e.g. human error, or technical difficulties like server issues). Because the generation and communication of the daily Determined Usage is processed through multiple systems, the likelihood of similar issues occurring in the future is high. As a result, the Utility should either prevent the use of a forecast past 7:15, or develop a documented exception process.

In addition, IA found that GSO and Meteorology need to fully document and formalize their procedures over the daily generation and communication of the Determined Usage volume.

Significance: Maintaining processes capable of either preventing the use of forecasts past the identified time, or fully documenting the reason they occur, the Utility decreases the risk of tariff issues occurring.

Management Action Plan: The Utility will develop an action plan to address this issue by September 15, 2014.

4. Information Technology (IT) (Medium Risk)

A. Advanced Billing System (ABS) – User Access to Share Drives

Background: As noted earlier, the CLFM calculates the Determined Usage data files. CC&B IF67 files contain CTA customer information. The IF67 and CLFM files are imported on a daily basis into ABS for use in calculating the CTA's monthly imbalance statements. The IF67 files include sensitive information, including customer name, account number, address, and gas billable usage. Based on the Information Classification and Protection Utility Standard, IT-5302S, the data in the IF67 files is classified as confidential data. Per this Standard, confidential data requires that access be limited on a business need to know basis.

Issue: We noted that the IF67 and CLFM files are stored on network share drives, which are configured to allow all persons with Utility LAN IDs "read" access to all the files. In addition, we found that over 100 user accounts (including some system accounts) have "write" access to the gas balancing files.

Significance: Restricting access to only those individuals with the need for either read and write access helps reduce the risk of unauthorized data changes and exposure of personally identifiable information.

Management Action Plan: The Utility will develop an action plan to address this issue by September 15, 2014.

B. Core Load Forecast Model – Change Management Processes

Background: The CLFM contains system jobs and programs used to create the CTA's daily forecast of how much gas their customers are expected to use. Currently, one person in IT Gas Transmission Operations (IT-GTO) is responsible for making any required changes to the CLFM (a back-up was identified in April of 2014 and is currently being trained). IT-GTO began using SMC Remedy as part of enterprise change management in September of 2013.

Issue: Although IT-GTO is using the enterprise change management tool, we found that it has not developed formal change management procedures, including responsibilities for approval and implementation, and testing requirements.

Significance: A formal change management process reduces the risk of unauthorized changes to code that could affect the accuracy and integrity of the core load forecast.

Management Action Plan: The Utility will develop an action plan to address this issue by September 15, 2014.

Redacted Redacted and Redacted performed this audit. We appreciate the cooperation and assistance they received from everyone they contacted. If you have any questions, please contact Redacted on ext. Redacte Redacted on ext. Redacted Christopher Pezzola on ext. 3-6821, or call me on ext. Redacted

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SCOPE AND DETAILED TESTING

Audit of Gas Imbalance Statements for Core Transportation Agents

BACKGROUND

In July of 2009, the Utility filed an Advice Letter (AL 3033-G) requesting to amend Schedule G-BAL by limiting the duration of imbalance statement accounting adjustments to three years. One Core Transport Agent (CTA), Tiger Natural Gas, filed a protest taking issue with the Utility's policy for reconciling imbalance statement adjustments and recommended that the Utility conduct regular audits. The protest also described an apparent longstanding situation whereby the Utility mistakenly assigned some of its bundled core customers to CTAs.

On September 2, 2010 the California Public Utilities Commission (CPUC) issued Resolution G-3440. In the Resolution, the CPUC stated that the situation that prompted the protest may either be an isolated matter or could be indicative of a more pervasive problem. The CPUC also stated that some action must be taken to prevent a recurrence of the problems discussed in the protest as well as any other documentation errors. Ultimately, in the Resolution the CPUC required the Utility to audit its records, documents and data used for preparing imbalance statements and accounting adjustments for CTAs[1] every three years. This is the second three-year audit performed by the utility and covers the period January 1, 2011 through December 31, 2013.

The Utility provides balancing services to its transmission customers, including CTAs, to account for the difference between the gas delivered to the Utility for that customer's use and that customer's actual usage.

DETAILED TESTING

To assess the accuracy of the data, Internal Auditing (IA) selected samples of each of the major inputs into the imbalance equations and tied them back to their source systems, re-performed critical calculations, and validated the accuracy of CTA customer classifications.

Tests to trace data to source systems:

These tests were designed to verify the accuracy of each type of input data sent to the Advanced Billing System (ABS) for processing and creation of the imbalance statements. The items covered by this testing included:

- Gas Supply Volumes – Tested a random sample of supply volumes from across the audit period that were tied from the imbalance statements to the Gas Transaction System (GTS). IA also performed trend analysis, identified anomalies, and tied these to GTS. No exceptions noted.

[1] As part of the Utility's Core Gas Aggregation Service, core customers may elect to purchase gas from suppliers other than the Utility; these suppliers are known as Core Transport Agents.

- Determined Usage – Tested a random sample of Determined Usage volumes from across the audit period that were tied from the imbalance statements to the Core Load Forecast (CLF) model. We noted five exceptions during this testing, which we discuss in issue 3.B Procedures and Documentation – Determined Usage.

- Meter Reads – Meter reads were assumed to be correct and were deemed to be out of scope.

- Actual Usage – Tested the accuracy of the algorithm that translates a customer's billed usage into balancing usage (or daily) usage. For one customer, we used billed usage from CC&B, re-performed the proration based on their assigned CTAs daily Determined Usage, and traced the results into the balanced usage volume in ABS. No exceptions were noted.

- Adjustments – Testing of adjustments was focused on specific imbalance statement adjustments that occured.
    - Cumulative Imbalance Adjustments – There were seven adjustments made to cumulative imbalance statements within the three year period IA audited. We reviewed the three largest, which represented 96 percent of the volumes adjusted. Two of the adjustments were due to CTAs failing to meet their mandatory storage injection volumes. The third adjustment was a correction of a misclassification of billed customer usage between PG&E's core procurement and a CTA. This issue is discussed in item 2 – Cumulative Imbalance Adjustment Process.
    - Billed Usage Adjustments – Since normal billing related adjustments represent the majority of the number of adjustments, but are small in nature and occur continually, we did not test them.

- Trades – Tested all of the automated and paper (manual) trades executed across the audit period for one CTA and tied them from the imbalance statements to GTS. We also reconciled the untraded balance from period to period. In addition, we reviewed trades that affected the balances for sampled CTAs during their cashout months. No exceptions were noted.

- Cashouts – There were about 30 cashouts performed during the period, many of which were small, as a result we tested all cashouts which involved volumes greater than 10,000 therms. No exceptions were noted.

Re-performed calculations:

These tests were designed to verify that the ABS code accurately processed data and produced accurate statements across the audit period. Since the coding is used to generate all the

imbalance statements, we focused our testing on one CTA and re-performed the calculation of its imbalances across the audit period. The items covered by this testing included:

- Cumulative Imbalance (included reconciling the cumulative imbalance tolerance carry forward and executed trades),
- Operating Imbalance,
- Operating Imbalance Carry Forward, and
- Shrinkage (included recalculating each month's shrinkage volume using the tariff approved shrinkage rates)

Validated the accuracy of CTA customer relationships:

These tests were designed to verify that requests to change a customer's CTA relationship were accurately processed within CC&B and were accurately communicated to and processed by ABS.

- Direct Access Service Requests - Tested a random sample of approximately 490,000 connect and disconnect DASRs that were processed by CC&B across the audit period.
    - Each sample was reviewed in CC&B to identify the date that the customer's CTA affiliation was actually switched to determine if they were processed according to Tariff provisions. We noted two exceptions that resulted from a CC&B coding issue, which led to item 1 – CC&B Customer Switches.
    - Each sample was then traced into ABS to verify that their usage was recorded with the correct CTA. No exceptions.