



**CITY OF COLORADO SPRINGS  
OFFICE OF THE CITY AUDITOR**

**09-18 – COLORADO SPRINGS UTILITIES  
BILLING SYSTEM**

**PUBLIC REPORT**

**OCTOBER 14, 2009**

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## Office of the City Auditor Public Report

Date: October 14, 2009  
To: Honorable Mayor and Members of City Council  
Re: 09-18 – Colorado Springs Utilities Billing System

We performed an audit of the Colorado Springs Utilities (CSU) Billing System for the period January 1, 2008 to December 31, 2008 and reviewed certain activities through February 2009.

The purpose of our audit was to evaluate whether CSU was billing customers accurately and timely for their utility usage while adequately safeguarding resources. We also evaluated whether CSU, as an entity, was abiding by the internal policies and procedures established for these processes. Our scope included review of system accesses to the Customer Care and Billing (CC&B) system and related financial data.

We conclude that overall, billing was handled in an accurate and timely manner, assets were adequately safeguarded, and the policies and procedures established for billing and safeguarding of resources were being followed. However, during the course of our audit, we identified areas where we believe internal controls can be strengthened. These areas are listed in the attached report.

As always, feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in purple ink that reads "Jeff Litchfield".

Jeff Litchfield  
City Auditor

cc: Jerry Forte, Utilities Executive Director  
Carl Cruz, Customer and Corporate Services Officer  
Monica Whiting, Customer Revenue and Service General Manager  
Pat Moyer, Field Service General Manager  
Debra Rubio, Customer Revenue Manager  
David Maier, Enterprise Risk Management Services Manager  
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# Table of Contents

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## 09-18 – Colorado Springs Utilities Billing System

### Public Report

	Page
Introduction	
Authorization .....	2
Organizational Placement .....	3
Scope and Methodology .....	3
Background .....	3
Commendable Practices .....	4
Overall Opinion .....	5
Findings, Recommendations and Responses	
1. An amount billed did not agree with Special Contract Terms .....	6
2. When bills had to be estimated, a single factor for expected change in consumption over the previous month was applied to all commercial and industrial customers. This resulted in estimated bills that were not accurate in some cases .....	7
3. Some accounts with high consumption were not reviewed for possible metering errors prior to mailing bills to the customer .....	8
4. Billing did not work all accounts on review and control exception reports .....	10
5. Internal control over employee access to system processes could be improved .....	12
6. Accesses creating segregation of duties issues existed .....	14
7. Policy required approval of billing changes over certain amounts, but approval was not required with the automated billing system .....	15
Opportunity for Improvement	
1. Consider implementing technology to capture and manage CSU meter data to improve operations, customer service, and data reliability.....	17

#### Abbreviations and Acronyms used in this Report

AMR	Automated Meter Reading
BBS	Billing and Business Services
CC&B	Customer Care and Billing
CSU	Colorado Springs Utilities
IT	Information Technology
MDMS	Meter Data Management System

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## Introduction

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### AUTHORIZATION

We performed an audit of the Colorado Springs Utilities (CSU) Billing System for the period January 1, 2008 to December 31, 2008. We conducted this audit under the authority of Chapter 1, Article 2, Part 7 of the City Code, and more specifically parts 703, 705, 706, and Part 709 (B) and (C) of the Code, which state:

#### 1.2.703: ENSURE PUBLIC ACCOUNTABILITY:

The City Auditor shall ensure that administrative officials are held publicly accountable for their use of public funds and the other resources at their disposal. The City Auditor shall investigate whether or not laws are being administered in the public interest, determine if there have been abuses of discretion, arbitrary actions or errors of judgment, and shall encourage diligence on the part of administrative officials.

#### 1.2.705: DETERMINE EFFECTIVENESS AND EFFICIENCY OF PROGRAMS:

The City Auditor shall determine the extent to which legislative policies are being efficiently and effectively implemented by administrative officials. The City Auditor shall determine whether City programs are achieving desired objectives. The City Auditor shall review the administrative control systems established by the enterprises, department or group managers and by the City Manager, Utilities Executive Director and Memorial Hospital Executive Director and determine whether these control systems are adequate and effective in accomplishing their objectives.

#### 1.2.706: EXAMINE BOOKS, RECORDS:

The City Auditor shall examine and inspect all books, records, files, papers, documents and information stored on computer records or in other files or records relating to all financial affairs of every office, department, group, enterprise, political subdivision and organization which receives funds from the City or under the direct or indirect control of the City Council. The Auditor may require any person to appear at any time upon proper notice and to produce any accounts, books, records, files and other papers pertaining to the receipt or expenditure of City funds, whether general or special. If that person fails to produce the papers, then the Auditor may request Council approval to search for and take any book, paper or record in the custody of that person or public official.

#### 1.2.709: MAKE PERIODIC REPORTS TO COUNCIL:

The City Auditor shall make periodic reports to Council which shall include the following:

- B. Information of proposals deemed expedient in support of the City's credit, and recommendations for lessening expenditures, for promoting frugality and economy in City affairs and for an improved level of fiscal management;
- C. Matters concerning the effectiveness and efficiency of the programs and operation of the City;

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## Introduction

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### ORGANIZATIONAL PLACEMENT

The Office of the City Auditor is structured in a manner to provide organizational independence from the entities it audits. This independence is accomplished by the City Auditor being appointed by and reporting directly to City Council. The audited entity in this audit was Colorado Springs Utilities, which is under the reporting structure of their Chief Executive Officer. Colorado Springs Utilities' Chief Executive Officer is also a City Council Appointee.

### SCOPE AND METHODOLOGY

The purpose of our audit was to evaluate whether CSU was billing customers accurately and timely for their utility usage while adequately safeguarding resources. We also evaluated whether CSU, as an entity, was abiding by the internal policies and procedures established for these processes. Our scope included review of system accesses to the Customer Care and Billing (CC&B) system and related financial data. Our review covered the period January 1, 2008 to December 31, 2008 and certain activities through February 2009.

The audit was conducted in accordance with the *International Standards for the Professional Practice of Internal Auditing*, a part of the Professional Practices Framework promulgated by the Institute of Internal Auditors. The audit included interviews with appropriate personnel and included such tests of records and other supporting documentation as deemed necessary in the circumstances. We reviewed the internal control structure and compliance tests were performed. Sufficient competent evidential matter was gathered to support our conclusions.

### BACKGROUND

Per CSU's 2008 Financial Statements along with data from the Pricing and Forecasting Group, the following Revenues were billed in 2008:

Service	Customers	Revenues (\$ thousands)
Electric	208,737	370,716
Gas	185,047	235,861
Water	132,637	87,983
Wastewater	129,133	60,249

Multiple groups within the CSU organization can effect transactions that make changes to a customer's bill. These include Customer Service Call Center and Credit Operations. Call Center employees are able to process start and stop orders on accounts, cancel, and re-bill customer accounts. The primary responsibility for ensuring accurate, timely billings to customers within the CSU organization resides with the Billing and Business Services (BBS) section of the Customer Revenue Group in the Customer and Corporate Services Division. This group (approximately 26 employees) reviews key reports indicating accounts that have errored and not billed or which may have billed incorrectly and need correction.

The Business Solutions Group within the CSU organization is responsible for administrative and control functions such as administering security over the CC&B application. This group also

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## Introduction

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fulfills a monitoring function. For example, Business Solutions reviews any transactions generated by employees for their own account. The Service Delivery Excellence Group within Customer Revenue performs a quality assurance review of a certain percentage of transactions generated by Call Center or Billing and Business Services employees.

CSU is in the process of installing an Automated Meter Reading (AMR) program through a third party vendor. Deployment began in 2005 and will continue through 2010. Using wireless radio transmitters, the AMR system remotely reads customer meters and then transfers the data into the billing system. CSU's System Quality Department has the responsibility for oversight of the AMR project and for ensuring the accuracy of meter reads.

Significant quality issues were experienced related to residential AMR gas modules which stopped recording usage in the field. Remediation of 100,000-110,000 gas modules should be completed by the end of 2009.

CSU replaced the previous CISplus with a new customer billing system, CC&B, in September, 2007. The replacement of customer billing software is a significant undertaking. In addition, the ongoing migration to AMR metering for Gas, Electric and Water services and the previously mentioned meter quality issues continued during this time. A high level of effort was made by CSU employees, which resulted in a successful transition to the new system.

The focus of our audit was billing activities. Our audit scope did not extend to credit and collection or cash receipts functions.

### **COMMENDABLE PRACTICES**

A report of proposed changes and corrections to the CC&B and AMR systems was maintained in priority order. Representatives from the various functional areas meet weekly with Information Technology (IT) to prioritize efforts on related corrections and improvements. They also review the status of potential programming changes.

Customer Revenue has begun to track errors in a database to facilitate root cause analysis. Additionally, it is our understanding that information from this database will be used in performance metrics for departments performing processes that ultimately result in billing errors. The intent is to minimize back-billing and lost revenue by minimizing errors on the front end.

During our review, Customer Revenue also transferred one supervisor to the AMR project team and one supervisor transferred from the AMR team to Billing. This is a proactive step that increases the knowledge base in both departments. It should also help ensure effective procedures are in place to detect both exchange-related errors and equipment quality issues. These steps should reduce the expected number of errors requiring correction.

The commitment to excellence demonstrated by employees responsible for the system implementation and for the various steps required in the ongoing billing process was commendable.

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## Introduction

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### OVERALL OPINION

We conclude that overall, billing was handled in an accurate and timely manner, assets were adequately safeguarded, and the policies and procedures established for billing and safeguarding of resources were being followed. However, during the course of our audit, we identified areas where we believe internal controls can be strengthened. These areas are listed on the pages that follow.

***We have made no determination as to which findings are more important than others.  
Therefore, the findings are not necessarily listed in order of importance.***

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## Findings, Recommendations, and Responses

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### 1. An amount billed did not agree with Special Contract Terms.

In our review of two military installation utility bills, Energy Accounting prepared spreadsheets used to price gas under special contracts. The pricing spreadsheet was used by Billing and Business Services to prepare the manual bill. At the time of our review, the Energy Accounting Analyst had to research the source of several inputs/calculations, which did not appear to be readily stated in the special contract. An addendum was subsequently located which provided some of the inputs used in the calculation.

We noted that a desk manual or Quality by Design document did not exist to explain the sources of the data (e.g. contract, tariff, index) and the rationale used. The spreadsheet used to calculate special contract pricing for one installation was not locked and ten employees had access to the folder.

During our audit, we asked for support for a discount multiplier used in the spreadsheet. CSU determined this multiplier was no longer applicable and should have been removed. Energy Accounting determined this resulted in an underbilling of \$11,000 on the military installation gas contract since the contract was modified in 2006. This will not be back-billed to the military (.1% difference), but will be corrected going forward.

Prior to the issuance of this report, the Energy Accounting and Account Manager Groups met to better define roles and responsibilities and ensure gas contract bill calculations forwarded to Billing to support invoicing were in agreement with contracts.

#### ***Auditor's Recommendation***

We recommend the special contract billing process be documented, responsibilities of the various groups be clearly defined, data be password protected, and billing spreadsheets reviewed prior to issuance of bills.

#### ***CSU Response***

CSU agrees with the Office of the City Auditor's recommendation and will establish a documented process for military special contract billing with clearly defined roles and responsibilities between various groups. CSU will evaluate the most efficient and effective process that ensures appropriate supporting documentation, quality review for accuracy and appropriate internal controls; these desired outcomes may be achieved through methods other than the recommended utilization of data password protection and billing spreadsheets.

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## Findings, Recommendations, and Responses

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2. **When bills had to be estimated, a single factor for expected change in consumption over the previous month was applied to all commercial and industrial customers. This resulted in estimated bills that were not accurate in some cases.**

The CC&B system calculated an average increase or decrease in usage based on the last 1,000 bills processed through the billing routine that day as compared to the previous month. Intended to adjust for seasonal variations in consumption, this “trend” or consumption factor was used in the calculation when CC&B estimated a customer’s bill.

However, CC&B only calculated one factor to apply to commercial and industrial customers in the estimating routine. Because separate trend factors were not computed for different classes of commercial and industrial customers and their usage can vary significantly, this resulted in inaccurate estimated bills in some cases

### ***Auditor’s Recommendation***

We recommend additional trend factors be developed for commercial and industrial customers so that estimated bills are more accurate. We understand that this programming change is on CSU’s work plan.

### ***CSU Response***

CSU agrees with the Office of the City Auditor’s recommendation. CSU has prioritized development of additional trend factors within CC&B for different customer classes. This will provide a more accurate estimation of consumption for customers with similar usage. Estimated billings usually auto correct in the subsequent month when an actual reading is obtained from the meter. It is the goal of the business to have additional customer classes and trend factor configurations completed by May 31, 2010.

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## Findings, Recommendations, and Responses

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### 3. Some accounts with high consumption were not reviewed for possible metering errors prior to mailing bills to the customer.

The CC&B software implemented in September, 2007 included a high/low reasonableness bill check. A high number of bills failed the high/low process because of the methodology used by the CC&B software system. This significant number of failures contributed to CSU's decision to "turn off" the high/low check in the early months following implementation. Alternatively, CSU placed reliance on meter reads generated from the AMR system. In general, this made sense as AMR reads were more accurate than manual reads, unless equipment installation or quality issues were encountered.

The "high consumption" report was subsequently put in place by CSU to address the possibility of a bill generated from an AMR read that was extremely high. A report of accounts with consumption that is three times the average of the last 12 months was developed and generated daily in CC& B.

However, the BBS did not work all these accounts. We reviewed the high consumption reports for three days in September, 2008, noting that 79%, 70% and 19% of accounts were reviewed. We selected 10 accounts from these reports that were not researched by Billing, noting that it appeared four bills were significantly higher than expected based on our review of customer history. Per review of the system history of customer contact notes, three of the four customers called Customer Service with a high bill concern after receiving their bill.

Additionally, we performed a test of residential accounts selected from the CC&B database with bill segments over \$2,000. Of 22 accounts in this test that we noted as requiring correction, four had not been identified by the customer or CSU at the time of our review.

The high consumption report was generated for accounts that billed the previous night, and bills were not intercepted, which means that high bills were mailed to the customer. If this was the first month the customer was billed, the account did not appear on the report because there would be no previous consumption to which the usage could be compared. Also, the account did not continue to print out on the high consumption report until addressed.

#### ***Auditor's Recommendation***

We recommend CSU ensure that controls are in place either on the front end through the AMR system or in CC&B, to identify and research all significant instances of high or low consumption prior to mailing bills to the customer.

#### ***CSU Response***

CSU agrees with the Office of the City Auditor's recommendations. While CSU currently has exception reports to identify billing errors, we continue to develop and modify existing criteria to ensure that only those accounts that require investigations are listed on reports. Resource constraints have limited the ability to intercept bills over a given threshold yet we recognize the importance of focusing efforts on making the corrections before the bill is generated and mailed to the customer. CSU and Customer Billing will address concerns surrounding high consumption and zero consumption by accomplishing the following:

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## Findings, Recommendations, and Responses

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- Development of additional trend factor for industrial customer class as noted in CSU Response to audit finding 2.
- Pilot a data analytics service tool to determine if this can assist in identification of meter installation issues, faulty metering components and validation of daily data in order to catch inaccurate meter reads prior to billing.
- Customer Billing will be the secondary review of exceptions generated from CC&B for zero consumption and high consumption prior to the bills being mailed to customers.

It is the goal of CSU and Customer Billing to have these actions accomplished by May 31, 2010.

Additionally, Field Services has undertaken a large process improvement effort with a goal to significantly reduce the number of meter related issues that become bill errors by leveraging the meter life cycle to identify and mitigate concerns prior to entering billing. These improvements will occur throughout 2009-2011.

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## Findings, Recommendations, and Responses

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### 4. Billing did not work all accounts on review and control exception reports.

Billing and Business Services (BBS) utilized various control reports to identify accounts which have not billed due to errors or which require review to determine if they billed incorrectly.

We noted in our test work customer accounts appeared on controls reports (such as high consumption and budget billing monitoring) that were not able to be worked and which contained errors requiring investigation. Priority was placed on accounts that have failed to bill, because of the potential for lost revenue.

For example, the budget monitoring report, which noted accounts on budget billing with significant variations between actual and budget amounts, was only worked when time allowed. The purpose of the report was to identify customers that had significant balances owed or due them. We reviewed 20 lines on the October 24, 2008 exception report noting that almost half of the accounts indicated ongoing issues related to consumption and budget billing that required correction, including 4 accounts with zero consumption for over 6 months. (See Finding # 2 for more information about our review of high consumption reports.)

We inquired about statistics on the percentage of accounts on these control reports that were able to be reviewed for possible correction. BBS had been tracking the percentage of work distributed to employees that was completed, but statistics were not available at that time for work that was not distributed for review.

The average number of control report line items for the two months ended February 2009 was 22,738. In some cases, errors continue to generate if the account was not worked, so the number of line items could have been inflated by duplication. Billing and Business Services also indicated some of the line items on reports did not represent accounts with true errors that required investigation.

During our fieldwork, BBS began tracking the percentage of accounts on control reports that was distributed to employees to review and correct as needed. A metric was put in place for BBS and Revenue management that 70% or more of all accounts on control reports are worked each month.

Statistics provided by Customer Revenue are as follows.

November, 2008:	58.12% of work generated was distributed 66.38% of work distributed was worked, meaning 38.58% of work generated was worked
December, 2008:	34.12% of work generated was distributed 74.53% of work distributed was worked, meaning 25.43% of work generated was worked
January, 2009:	77.62% of work generated was distributed 77.72% of work distributed was worked, meaning 60.33% of work generated was worked

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## Findings, Recommendations, and Responses

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February, 2009      70.38% of work generated was distributed  
72.76% of work distributed was worked, meaning  
51.21% of work generated was worked

Several initiatives were in progress to reduce error rates which should ultimately minimize the number of reviews necessary by BBS. These included tracking errors in a database to better identify root cause and including errors as part of evaluation metrics for other groups in the cycle of service.

### ***Auditor's Recommendation***

We recommend CSU consider ways to ensure all significant potential errors are identified, worked by the staff, and corrected in a timely manner.

### ***CSU Response***

CSU agrees with the Office of the City Auditor's recommendation. Business Solutions, Field Service and Customer Billing have completed extensive root cause analysis of metering and billing related issues to identify training needs and to reduce the number of errors requiring correction. We have consistently flexed employees from one business unit to another to handle peak volumes of billing transactions; those attempts fell short in meeting performance metrics for billing. Staffing levels were not adequate to meet the many challenges associated with the simultaneous replacement of both the metering and customer information system. While the circumstances caused an increased workload, it is a temporary situation that is not uncommon to customer information system and metering conversions.

Business objectives have been established to measure performance of the customer cycle of service from the meter to the bill and developed methods to track the quantity of billing work generated compared to the quantity of billing work completed.

CSU and Customer Billing will implement business process, report modifications and utilize data analytics to ensure metering issues are identified and critical control reports are worked in a timely manner. It is the goal of CSU and Customer Billing to have these actions accomplished by May 31, 2010. Note: adequate staffing levels are critical for CSU to be able to meet this accomplishment; the date could be delayed if workload continues to surpass staffing levels during this time of budget constraints and resource limitations.

Additionally and as noted in response 3, Field Services has undertaken a large process improvement effort with a goal to significantly reduce the number of meter related issues that become bill errors by leveraging the meter life cycle to identify and mitigate concerns prior to entering billing. These improvements will occur throughout 2009-2011.

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## Findings, Recommendations, and Responses

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### 5. Internal control over employee access to system processes could be improved.

CSU employee access to the CC&B system was assigned based on screens the employee needed for their job function. CC&B was designed so that the application allows many fields to be updated on a screen. Although an employee may only need to update a few fields on a screen based on his or her job function, access can only be granted to an entire screen and not each field. This type of access was base functionality of the application, and cannot be changed without additional programming.

For example, through the Service Point screen in CC&B base software system, during the audit, a user had the ability to change the percentage that was billable on that service point, although their business need might be only to add the service point. The Service Agreement screen allows changes to contract riders and values, and contract quantities.

In the case of adjustments, a daily review was in place to ensure that only authorized users were entering adjustment types, but controls would be improved if access were restricted in the system to enter the business need adjustment types only.

Additionally, we observed some accesses that individual employees may not need. For example, Call Center employees had access to the billable charge screen and an analyst group had access to bill and enter stop/starts. Further, employees in a review role were able to process all major transactions. Call Center and BBS Supervisors had access to add, change and delete transactions. Best practices related to segregation of duties would call for those who review or approve transactions to be limited from entering transactions.

Concurrent with our audit, Business Solutions reviewed security permissions with managers and supervisors to determine (1) that users had access to only screens for which they have a business need and (2) where conflicting duties existed, mitigating controls were in place to address risks. This review is appropriately performed after a major system implementation.

#### ***Auditor's Recommendation***

We recommend completion of the post-implementation security review for the following:

- Screen level access should be reviewed for sufficient internal controls. Ideally, access would be restricted, but detective controls in the form of reports and internal reviews to identify inappropriate access may also mitigate risk.
- User access should be eliminated where employee job function is not required.
- Access of those in a quality assurance, review and approver role should be prevented from access to create, change or delete transactions.

#### ***CSU Response***

CSU partially agrees with the Office of the City Auditor's recommendations. We agree that sufficient internal controls are critical to mitigate risks relating to inappropriate access. Ideally, restricting access to certain fields, screens, or transaction would best mitigate risk; however, we do not agree with making changes to the base functionality of CC&B due to the cost and resources associated with this recommendation. We instead will manage this risk through appropriate detective internal controls.

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## Findings, Recommendations, and Responses

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While CSU currently has some mitigating internal controls in place in the form of reports and internal reviews, we recognize that improvement is possible in this area.

In addition, we recognize opportunity for internal reviews and/or limited access for those users in a quality assurance, review or approver roles. User access has been removed in some areas, and will continue to be monitored, where the employee job function does not require CC&B access. However, in order to maintain service levels we must continue to utilize our resources in multiple capacities, while ensuring appropriate detective controls in these situations; therefore, CSU is willing to accept some risk in this area for some functional areas/roles.

CSU will address concerns surrounding mitigating internal controls of CC&B roles and functions by formalizing its internal review processes.

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## Findings, Recommendations, and Responses

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### 6. Accesses creating segregation of duties issues existed.

CSU's business practice was that employees in a given work group assist employees in another work group to accommodate peak workloads. For example, assistance may be provided to the call center with incoming calls to achieve desired customer service levels. This practice, while intended to move resources as needed, resulted in some accesses that create control risks.

Some employee groups had access to all major transaction screens other than payments including all credit, billing and customer service functions. This group was able to set up accounts (start/stop), bill, make adjustments (including refund requests), cancel-rebill, change reads, write off balances, and make changes to the collection process. This access was intended to enable employees to meet business needs, but could have allowed the employee, for example, to write off an account, and then reactivate a new account.

In addition, there were 24 employees who had both the credit/billing profile and were able to take payments through the cashier profile. This would make it possible for these employees to collect cash, create an adjustment or credit to the account (or write off the account) and misappropriate the payment. Our audit scope was customer billing. There could be mitigating controls in other areas, but access to multiple processes could present a control weakness.

CSU did have a mitigating control in place to review transactions on the employee's own account and to identify accounts on which transactions are repeatedly entered. Additionally, quality assurance reviews are performed on a sample of select billing transactions, which might detect inappropriate activity.

#### ***Auditor's Recommendation***

We recommend CSU restrict employee access or ensure mitigating controls are in place to address the risk that exists where employees have system access to multiple processes (e.g., customer service, billing, credit, cashiers.) If reliance is placed on the quality assurance review as a mitigating control, we recommend selection criteria ensure all billing related transactions from all employees are eligible for review.

#### ***CSU Response***

CSU partially agrees with the Office of the City Auditor's recommendation, as previously discussed in # 5. However, in order to maintain service levels we must continue to utilize our resources in multiple capacities, while ensuring appropriate detective controls in these situations. Therefore, CSU is willing to accept some risk in this area for some functional areas/roles. Note that where segregation of duty is appropriate, those changes have already occurred; where it is not feasible or aligned with appropriate risk, as recommended, detective controls will be put in place.

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## Findings, Recommendations, and Responses

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### 7. Policy required approval of billing changes over certain amounts, but approval was not required within the automated billing system.

During our fieldwork, residential bill corrections resulting in a re-bill or lost revenue over \$200 required the employee correcting the bill to email the BBS Supervisors, Coordinators or Revenue Manager, based upon the error amount. The email was reviewed to determine appropriate processes and policies were followed. There was no check in place to verify the employee sent an email for this review.

Subsequent to our fieldwork, CSU changed this process to require employees to complete a request for review or approval form detailing why bill corrections occurred. While this assisted CSU management with identifying error sources, there was no processing control in the CC&B system to prevent these transactions from posting without review or approval or to report transactions over the thresholds indicated above. The quality assurance review by Service Delivery Excellence of approximately 10% of billing transactions generated by Call Center and Billing employees included a step to determine if the email or request for review of lost revenue or pick-up bill procedure was followed.

However, this mitigating control may not have been effective because accounts are selected for this quality assurance review by customer contact note. If an employee did not enter a contact note, the account would not be subject to review. Also, transactions generated by credit operations employees generating billing when flexing into a billing role would not be subject to this 10% review.

#### ***Auditor's Recommendation***

We recommend controls be put in place to ensure policy is followed for bill corrections. The ideal control to ensure all bill corrections are reviewed and approved would be for the CC&B system to automatically route these transaction to BBS management. If time and cost constraints do not allow for system changes at this time, we recommend quality assurance selection criteria be revised to ensure all billing transactions submitted by all employees including those temporarily assisting in a billing role are eligible for review.

#### ***CSU Response***

CSU partially agrees with the Office of the City Auditor's recommendation. While CSU currently has a documented policy that outlines the criteria for management approval of bill corrections that exceed certain thresholds, not all transactions, such as lost revenue, generate a recordable transaction in CC&B. Customer Billing tracks lost revenue based on a customer contact note that is placed on the account and submitted for approval. This information is used to identify metering issues and/or business process issues that may require additional focus to minimize impact to the customer bill. Currently, CSU has limited resources which reduce the feasibility of reviewing 100% of billing corrections and lost revenue calculations. Therefore, CSU is willing to accept this risk and perform reviews on billing corrections meeting the established thresholds.

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## **Findings, Recommendations, and Responses**

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Customer Billing will implement a process(s) to ensure that bill corrections meeting the established criteria are extracted from CC&B and routed to management for appropriate review and approval. Service Excellence will expand and incorporate quality reviews to include those employees flexing into a billing role to meet established service levels.

It is the goal of Customer Billing to have these actions accomplished by December 31, 2010.

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## Opportunity for Improvement

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The following finding is presented in the context of City Code 1.2.709, which instructs the City Auditor to make periodic reports to Council which include “recommendations for lessening expenditures, for promoting frugality and economy in City affairs and for an improved level of fiscal management.”

**1. Consider implementing technology to capture and manage CSU meter data to improve operations, customer service, and data reliability.**

To date, AMR operations has not had an advanced analytical toolset to assist in identifying installation and quality issues for the AMR Implementation project which began in 2006. As known issues were identified, reports and processes were subsequently developed and put in place by the AMR project team and Business Solutions to detect potentially bad or improperly installed meters. Some of these reports (e.g. zero usage on a meter since installation or meters without usage that had usage 15 days ago) were implemented in 2008.

Daily reads were available from the AMR system for a period of 90 days. However, because technology is not in place to support the complex analysis of reads and the CC&B High Low report was disabled for monthly billing reads, most high consumption due to customer equipment problems (e.g. plumbing leak) was not detected until the customer questioned their bill. Although the customer is responsible for the usage, this generally results in a phone call to the Call Center, a possible field visit and loss of customer goodwill. New analytics technology would allow proactive identification of these situations and possibly increase efficiencies.

### ***Auditor's Recommendation***

We recommend that CSU utilize a technology to assist with prompt identification of quality and installation issues. We also recommend CSU proactively identify customer equipment problems using the daily read data available from the AMR system.

### ***CSU Response***

CSU agrees with the Office of the City Auditor's recommendation. Our goal in Field Services is to use tools, applications and process improvements to detect and resolve problems as early as possible in the Customer Cycle of Service, the start of the Meter Life Cycle.

CSU views a Meter Data Management System (MDMS) as a family of tools and applications that will provide means necessary to assist in the identification of meter life cycle equipment, test and installation issues. The MDMS applications will utilize the daily meter reading data available from the Advanced Metering Infrastructure (AMI) system in the identification of these issues. For example, the MDMS will be used to validate the daily consumptive data in order to catch inaccurate meter reads prior to billing.

Implementation of MDMS will occur over the course of the next 2-3 years. As implementation evolves, we will also modify internal practices and processes to streamline and reflect the benefits of the information/data that MDMS will provide as we integrate it into our customer cycle of service. However, for the remainder of 2009 and into 2010, CSU will pilot a data analytics service tool to evaluate if this type of technology can assist in effectively identifying the various issues and concerns.