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Audit Report

**AUTOMATED METER READING (AMR)
CONTRACT**

October 28, 2008

Office of the City Auditor
Austin, Texas

Audit Team

Joselito Cruz, Auditor-in Charge
Gustavo Rodriguez, CIA, CGAP, CISA
Meena Mirpuri, CGAP

Assistant City Auditor

Corrie Stokes, CIA, CGAP

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Office of the City Auditor



301 W. 2nd Street, Suite 2130
P.O. Box 1088
Austin, Texas 78767-8808
(512) 974-2805, Fax: (512) 974-2078
email: oca_auditor@ci.austin.tx.us
website: <http://www.ci.austin.tx.us/auditor>

Date: October 28, 2008
To: Mayor and Council
Subject: Automated Meter Reading (AMR) Contract Audit

I am pleased to present this report on our Automated Meter Reading (AMR) contract audit. In April 2002, Austin Energy (AE) entered into a 15-year, \$36M service and meter purchase contract for approximately 123,000 meters with one-way wireless communication technology. In 2006 and again in 2008, AE amended this contract to expand to two-way automated meter reading services for an additional 234,000 meters.

In our audit we found that for the most part Austin Energy (AE) exercised diligence and prudence in developing and executing the 2002 AMR contract for one-way metering services. However, AE did not involve purchasing staff in the negotiation and execution of the AMR contract as required by Council resolution and, as a result, AE omitted some standard contract provisions designed to protect the City.

For one-way metering services, AE has routinely monitored contractor performance which has complied with contract terms and achieved desired outcomes. However, the AMR contract's authorized spending balance in the financial system was overstated by \$7.9M.

Additionally, unlike in the original AMR contract, AE did not apply the same prudence to the addenda to that contract. Specifically, AE did not seek Council approval, despite committing AE to additional expenditures and did not compare the amendment costs to other utilities or vendors, conduct a citywide impact study, or incorporate penalties for delays into the contract amendments. Lastly, AE could not readily provide reliable inventory figures for meters with two-way wireless communication.

We have issued eight recommendations to address issues related to the 2002 AMR contract and its amendments. AE has concurred with these recommendations.

We appreciate the cooperation and assistance we received from AE management and the Electric Service Delivery staff during this audit.

Stephen L. Morgan, CIA, CGAP, CFE, CGFM
City Auditor

COUNCIL SUMMARY

This report presents the results of our audit of the Austin Energy (AE) Automated Meter Reading (AMR) contract. In April 2002, AE entered into a 15-year, \$36M service and meter purchase contract for approximately 123,000 with one-way wireless communication technology. In December 2006 and in January 2008, AE amended this contract to expand to a two-way automated meter reading services for an additional 234,000 meters.

The purpose of this audit was (1) to determine whether the AMR contract and amendments had reasonable cost foundation and had complied with City requirements; and (2) to determine whether accepted deliverables were in compliance with contract terms and related payments were accounted for in the accounting system, as well as monitored to ensure that the desired outcomes were met.

For the most part Austin Energy (AE) exercised diligence and prudence in developing and executing the 2002 AMR contract for one-way metering services. The contract had a reasonable cost foundation and was expressly approved by City Council resolution. However, AE did not involve purchasing staff in the negotiation and execution of the AMR contract as required by Council resolution and as a result, certain standard contract provisions, such as an audit clause and price warranties for all goods and services, were not incorporated in the contract.

For one-way metering service, AE has routinely monitored contractor performance which has complied with contract terms and achieved desired outcomes. In addition to monitoring contractor performance, the contract spending balances in the financial system should always be accurate to maintain their relevance and value to management in controlling expenses to be within the authorized spending limit. However, we found that the 2002 AMR contract's authorized spending balance in the financial system was overstated by \$7.9M.

Further, when executing the amendments to the 2002 AMR contract which expanded the contract to use two-way technology, AE did not apply the same prudence as used when developing and executing the original contract. Specifically, AE did not seek Council approval despite committing AE to additional expenditures. Also, AE did not compare pricing agreed to in the amendments to other utilities or vendors, did not conduct a citywide impact study, and did not incorporate penalties for delays into the amendments. Lastly, AE could not readily provide a reliable inventory figures for the number of two-way meters purchased, installed, and on-hand.

We have issued eight recommendations aimed at correcting identified deficiencies. Management concurred with these recommendations.



ACTION SUMMARY AUTOMATED METER READING CONTRACT AUDIT



Recommendation Text	Management Concurrence	Proposed Implementation Date
01. General Manager should ensure adherence to City's policies and procedures for critical business needs, and negotiate to incorporate Section 300 into all future contracts, where applicable.	Concur	Implemented
02. General Manager should develop amendments to incorporate Section 300. (audit Clause, price warranty, insurance renewals)	Concur	01/07/09
03. Purchasing Officer should ensure that the correct balance for the AMR contract is reflected in AFS3.	Concur	07/25/08
04. Purchasing Officer should investigate the cause of contract balance discrepancies in AFS2 carried over to AFS3, and identify any other contract with the same issues.	Concur	12/31/08
05. General Manager should seek Council approval for the AMR contract addenda.	Concur	11/20/08
06. General Manager should seek approval for contract or addenda exceeding the City Manager's approval limit before executing any contract or amendments.	Concur	Ongoing
07. Senior Vice President of Electric Service Delivery should perform a cost comparison check regarding metering service costs and two-way metering technology.	Concur	12/07/08
08. Metering Operations Manager should develop a system that captures inventories of two-way meters and can provide real-time reports regarding AE's meter inventory.	Concur	Implemented

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BACKGROUND

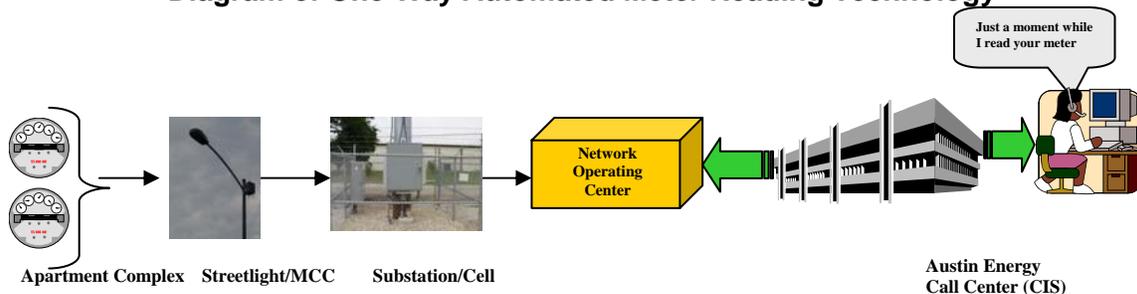
Automated meter reading via radio frequency provides a way for utilities to read meters remotely, thus eliminating the need for meter readers to drive to and enter individual properties in order to capture the meter's "read" for billing purposes. Two kinds of wireless technology are available to achieve automated meter reading, one-way and two-way. In April 2002, Austin Energy (AE) entered into a 15-year, \$36 million service and meter purchase contract for approximately 123,000 one-way automated meters. In 2006 and again in 2008, AE amended this contract to expand to two-way automated meter reading services for an additional 234,000 meters.

Automated meter reading (AMR) provides a way for utilities to read meters remotely using radio technology. Automated meter reading (AMR) technology utilizes radio technology to automatically collect data from water, gas, or electric metering devices and transfer that data to a central database for billing and analysis. AMR saves trips to manually read meters which can lead to reduced costs for fuel, vehicles, and personnel. AMR can also reduce liability related to entering properties.

There are two kinds of automated meter reading wireless communication technology: one-way and two-way technology. In one-way wireless technology, a meter sends data to a controller (typically automatically every few seconds) which is then sent to a substation and subsequently to a server where it can be utilized for billing. In two-way wireless technology the meter can both send and receive data, and other meters can help with the reading process when a controller cannot read a meter.

One-way wireless communication technology or Automated Meter Reading (AMR) consists of: transmitters inside the meters called Meter Interface Units (MIUs), a network of data collectors called Micro-Cell Controllers (MCCs) that receive data from MIUs, and the Substations/CellMasters that receives transmissions from MCCs and transmit data to a server. The data collected can be uploaded to a billing system. In a one-way system, the meter is only capable of sending meter reading data through radio frequency to the MCC. Because of this, positioning of the MCC is key to ensuring that the MCC receives transmissions from the meters. If there is an obstacle, data transmission from the MIUs to the MCCs may fail.

**EXHIBIT 1
Diagram of One-Way Automated Meter Reading Technology**



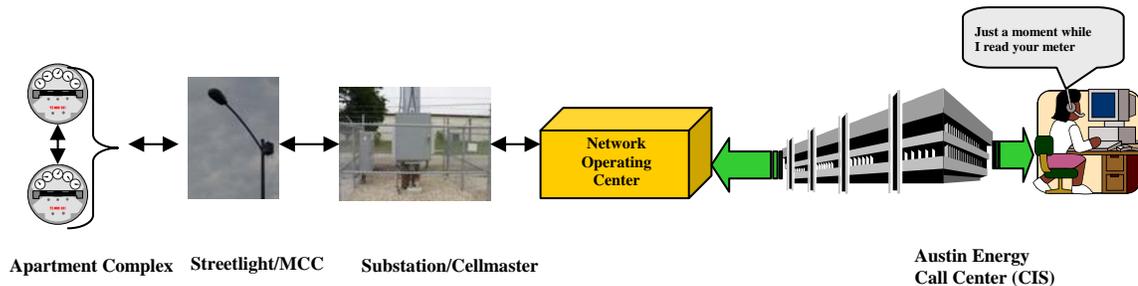
SOURCE: Austin Energy Presentation on AMR Technology, February 2008

According to AE staff, the AMR contract will provide AE and its customers with many benefits such as avoided costs related to manual meter reads and improved customer service through:

- Greater efficiency in processing move-ins and move-outs from apartment complexes;
- Fewer estimated bills;
- Faster responses to customer billing inquiries and complaints;
- Access to current meter information via the internet for Austin Energy staff;
- Reduced call center volume; and
- New and expanded product and service offerings.

Two-way wireless communication technology or Automated Meter Infrastructure (AMI) is similar to the one-way system except that with two-way meter reading technology, two-way meters can both send and receive data and can communicate with each other. The two-way system provides alert signals to the endpoints, signaling to the other meters that information has been requested and in return the endpoints are notified that a successful transmission has been completed. In addition, if there is an obstacle between the controller and a meter, the system attempts to capture the broadcast information using the MIU in another nearby meter. The one-way system does not have this capability.

EXHIBIT 2
Diagram of Two-Way Automated Meter Reading Technology



The two-way technology provides additional benefits not provided by one-way such as:

- A higher likelihood that a meter will be read if there is an obstacle in the way of one of the meters;
- The opportunity for AE to offer intelligent services such as real-time reads, time-of-use, and on-demand online reads; and
- Readiness to comply with possible state or federal regulations regarding time-of-use metering or other energy efficiency requirements.

On April 25, 2002, the City Council approved a 15-year, \$36 million service and meter purchase contract with Schlumberger Sema, Inc. (SLBSema) for approximately 123,000 one-way automated meters. The 15-year contract has an initial fixed term of seven years, followed by eight successive one-year terms. The contract included purchasing 60,000 state-of-the-art electric meters and retrofitting 63,000 existing meters with one-way wireless communication technology. The AMR technology allows these meters to be read via radio signal and will significantly reduce the need to read the meters manually. The one-way AMR was initially implemented for select

apartment complexes serving the community and University of Texas students. These were chosen because they typically require more frequent off-cycle reads due to frequent move-ins and move-outs.

The AMR contract resulted from a litigation settlement between SLBSema and AE. The settlement was related to a 1999 contract to replace an existing software application for geographic information management, outage management, work management and distribution planning and analysis with a new system. By January 2001, AE terminated the contract and demanded \$2.9M from the vendor because the agreed upon software was actually in the development stage, rather than in the production stage, resulting in a product that did not meet AE's specifications. Also, the vendor was not going to be able to complete the project within the 24 months allowed in the contract. AE filed a lawsuit in March 2001 for breach of contract after no progress in negotiating a settlement was reached. During the lawsuit, the vendor also sued AE for breach of contract and misappropriation of its intellectual property. In June 2001, both AE and the vendor began settlement discussions. As such, the negotiations proceeded along two tracks: damages and Automated Meter Reading (AMR). SLBSema agreed to deduct \$1.75M off the price of meters and the radio transmitters (MIUs) purchased by AE from SLBSema, and SLBSema agreed to provide the AMR data management system, meter installation, and meter reading services to AE. The \$36M AMR contract was designated as a critical business need, due in part to the litigation settlement, thus AE was not required to seek bids on the contract.

In 2006 and again in 2008, AE amended this contract to expand to two-way metering technology for an additional 234,000 meters. The AMR contract has been amended several times. The first three amendments involved non-material changes such as changes to the corporate name of the vendor, now called CellNet, Inc. However, on December 22, 2006, and on January 23, 2008, Austin Energy and CellNet signed amendments (addenda 4 and 5, respectively) to the original contract to expand meter reading services to include at least an additional 234,000 automated meters. Through these amendments, AE agreed to purchase automated meters with two-way CellNet-owned MIUs from CellNet-approved meter vendors, while CellNet agreed to pay to convert its existing one-way meter reading system into two-way meter reading system still capable of reading AE's existing automated meters and any future meters installed in AE's system. Unlike in the original 2002 contract where AE owns both the meters and the MIUs, in the addenda AE owns the automated meters, purchased and installed under separate Council-approved contracts, and CellNet retains ownership of the two-way MIUs inside the meters. Upon completion of the roll-out, originally targeted for December 2008 and now scheduled for July 2009, AE will have covered almost all of its approximately 400,000 customers with either one-way or two-way wireless automated meters.

OBJECTIVES, SCOPE, AND METHODOLOGY

This audit was approved as part of the Office of the City Auditor's (OCA) FY 2008 Service Plan.

Objectives

To determine whether:

- 1) The Automated Meter Reading (AMR) contract and amendments to the contract have a reasonable cost foundation and have complied with City requirements.
- 2) Accepted deliverables are:
 - in compliance with contract terms and related payments are accounted for in the accounting system; and
 - monitored to ensure that desired outcomes are met.

Scope

Our audit included review of the 2002 AMR contract and amendments to the contract, specifically those entered into on December 22, 2006 and on January 23 2008. We also included the litigation settlement transactions from 2002 to 2003, and City records, such as:

- Financial records from March 2003 to July 2008 related to expenditures for the AMR contract;
- Due diligence studies by Austin Energy (AE) related to automated meter technology; and
- Austin Energy's meter reading data for June and August 2008.

Our audit scope for the amendments to the 2002 contract was limited to the review of the contract process and compliance with City requirements because the expansion project is still underway.

Methodology

In order to achieve our objectives for this audit, we:

- Interviewed AE management and staff responsible for the AMR project and its expansion.
- Reviewed the AMR contract and related amendments.
- Reviewed relevant sections of the City Charter, ordinances, resolutions, and policies and procedures.
- Consulted the City Law Department for the interpretation of certain provisions of the City Charter related to contract amendments.
- Reviewed documentation for the cost foundation and due diligence studies for the AMR contract and its amendments.
- Performed a validity test of AMR payment transactions and AMR charges on the accounting system.
- Performed reliability and compliance tests of AMR meter reading data and deliverables.
- Conducted a parallel meter reading test for 30 one-way meters by comparing a system meter read to a simultaneous manual meter read.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards (GAGAS). Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

AUDIT RESULTS

The vendor for the 2002 Automated Meter Reading (AMR) contract has been performing beyond the requirements of the contract for one-way metering services and AE has been closely monitoring deliverables to ensure compliance with contract terms. However, the City's financial system did not reflect the contract balance accurately.

Furthermore, amendments to the 2002 AMR contract for the Automated Meter Infrastructure (AMI) expansion, which expanded from the original 123,000 one-way automated meters to an additional 234,000 automated meters with two-way technology, did not follow the same processes undertaken in the 2002 AMR contract. First, AE did not seek Council approval for the amendments despite committing AE to additional costs. Also, AE did not conduct an upfront cost comparison, did not conduct a Citywide cost-benefit analysis, and did not incorporate timeliness sanctions. Finally, unlike in the 2002 AMR contract where the one-way metering system was for selected customers, the two-way metering system implementation, despite utilizing new technology, was initiated for all remaining AE customers at the same time.

For the most part, AE exercised prudence and diligence in developing and executing the 2002 AMR contract for one-way metering services. However, AE did not involve purchasing staff in the contracting process and omitted some standard contract provisions designed to protect the City.

The 2002 Automated Meter Reading (AMR) contract had a reasonable cost foundation and was expressly approved by City Council resolution. However, Purchasing was not involved in the negotiation and execution of the AMR contract as required by Council resolution. As such, certain provisions from the City's standard purchasing terms and conditions were not incorporated into the AMR contract.

Austin Energy conducted a reasonable cost benefit analysis and comparison analysis before entering into the 2002 contract, and received express approval for the contract from Council. Austin Energy conducted a due diligence study and consulted with other customers that were using SLBSema one-way automated meter reading technology to establish the cost foundation for the Automated Meter Reading (AMR) contract with SLBSema in 2002. AE also prepared a cost-benefit analysis that was used when deciding to enter into the AMR contract. The City Council approved the Request for Council Action (RCA) for the 2002 AMR Contract on April 25, 2002.

AE did not involve Purchasing staff in the negotiation and contracting process for the AMR contract, and certain standard provisions designed to protect the City were not included in the contract. The Council resolution related to AE procurement specifies that when AE conducts a purchase that has been designated a "critical business need" for the utility, the AE Purchasing Manager should manage the procurement for AE.

However, for the 2002 AMR Contract, the Purchasing Manager was not involved in the negotiation or the contract development. Purchasing was not involved in the procurement until after the AMR contract was signed and needed to be set up in the financial system so that invoices could be paid.

Because of the limited involvement of Purchasing, the AMR contract and its amendments did not reference the City's Standard Purchasing Terms and Conditions as part of the contract and as such, the current AMR contract does not provide for:

- legal access to the vendor's systems and records;
- a price warranty to guarantee AE a price in-line with that offered to other customers for meters and data management services (only a price warranty for MIUs is included in the contract); or
- copies of insurance coverage renewal certificates to AE to ensure that relevant level and type of insurance coverage is maintained. In fact, neither the Contract Manager nor the Purchasing Manager was aware of the status of the contractor's insurance coverage.

Recommendations:

01. The AE General Manager should ensure that AE adheres to the City's policies and procedures for critical business needs and negotiate to incorporate Section 300 of the City's Standard Purchasing Terms and Conditions into all future contracts, where applicable, for procurements made under the critical business need justification.

MANAGEMENT RESPONSE: CONCUR

AE will manage critical business need procurements through Purchasing, and will maintain agreement with Purchasing as to its level of involvement with industry-specialized contracts such as fuel and power purchase agreements. AE will work through Purchasing regarding future negotiations and procurements under the AMR contract.

-
02. In addition, the AE General Manager should develop and seek agreement from the contractor for needed amendments that incorporate Section 300 in the current AMR contract.

MANAGEMENT RESPONSE: CONCUR

AE will attempt to obtain agreement from the vendor to incorporate applicable Section 300 terms into the contract before the renewal option deadline of January 7, 2009.

For one-way metering service, AE has routinely monitored contractor performance which has complied with contract terms and achieved desired outcomes.

SLBSema settled the litigation arising out of the prior contract and has supplied AE with one-way meters and other related services in accordance with contract pricing terms. The vendor also provided AE with a reliable one-way data management system and automated meter reading services that have been meeting the measurement-based performance requirements of the contract. The meter reading accuracy tests we conducted for 30 randomly selected one-way meters did not disclose any discrepancies. However, we did note that while AE is successfully reading all one-way meters not read by CellNet, AE also generated services orders to manually read some one-way meters that did not need to be read.

SLBSema has completed its litigation settlement with Austin Energy in compliance with the 2002 AMR contract. As of March 13, 2003, SLBSema paid a total of \$1,749,999.90 as a litigation settlement to AE. The payments to the litigation settlement were deducted outright from the costs of meters and MIUs as the amount of litigation settlement applied was shown as a credit in SLBSema's invoices.

The vendor has complied with the pricing specified in the 2002 AMR contract, including the method specified to adjust prices over time. CellNet (previously SLBSema) has followed contract pricing for all goods and services provided under the contract. Our validity test of AMR related invoice payments from FY 2004 to FY2007 did not indicate any payment issues. CellNet used the correct Consumer Price Index (CPI) to adjust service pricing and invoices we reviewed were consistent with the agreed upon pricing. Further, as of October 10, 2004, AE purchased 61,081 new meters and 61,992 MIUs, or a total of 123,073 new and retrofitted automated meters with MIUs based on the contract price.

AE has been closely monitoring contract deliverables for meter reading services and the contractor's meter reading performance has met and even exceeded contract requirements. To determine whether CellNet is complying with a contract requirement to read 98% of all available meters each month, the Senior Systems Support Technician prepares a spreadsheet showing the number of available meters for read and the actual meters read by CellNet for each billing cycle. The Metering Operations Manager reviews the spreadsheets and coordinates with CellNet to address any material discrepancies in the number of meter reads or performance measures going below the threshold specified in the contract. According to AE's spreadsheets for FY 2005 to FY 2007, CellNet's monthly meter reads were averaging 99.55%.

We independently collected the meters available for read from AE's customer information system and the meters actually read by CellNet as of June 17, 2008 and found that CellNet's performance was in line with the contract requirements. Out of the 116,350 meters associated with active accounts that were available for read as of June 17, 2008, CellNet was able to read 114,095 or 98.06%.

The usage captured by the CellNet system for one-way meters matched the usage captured by manual meter reads. AE conducted a meter accuracy test for the one-way meters six years ago, during the implementation of the 2002 AMR contract. To confirm the continued accuracy of meter reads generated by the automated system, we performed a parallel test to verify the accuracy of 30 randomly selected one-way AMR meters, comparing CellNet's system meter read to the actual usage reading on the meter. This test did not reveal any discrepancies between the CellNet system meter reads and that of the manual meter reads in the field.

For the period tested, AE read all available meters that were not captured by CellNet's automated reads. CellNet is responsible for reading 98% of available meters each cycle and AE is responsible for manually reading the remaining one-way meters. AMR meters not read by CellNet are sent to AE Customer Accounts where the unread meters are either read remotely by AE using CellNet's online system or read manually. If an unread meter cannot be read remotely, a service order is generated to dispatch a meter reader for a manual on-site read. For the period tested, we confirmed that AE read all of the meters that were not captured by CellNet either remotely or manually on-site.

However, for a very small percent of unread meters, AE Customer Service generated service orders for inactive meters that did not need to be read. Some one-way meters not read by CellNet may be inactive and the customer may have already been billed for the final usage. Prior to generating a service order to manually read a one-way meter, Customer Accounts should research the account and ensure that the meter needs to be read. In our review of reports for two cycles, we found that in one cycle, Customer Service generated service orders to manually read six meters that did not need to be read, resulting in dispatching a truck to read the meters. All six of the identified meters were located in the same area and therefore only resulted in one unnecessary trip. Other inactive meters that did not need to be read were caught prior to generating service orders. We did not identify any instances where unnecessary service orders were repeatedly generated for the same meter.

As of July 2008, the 2002 AMR contract's authorized spending balance in the financial system was overstated by \$7.9M; without careful monitoring by the project manager, funds expended for the project could exceed the authorized amount.

The contract spending balances in the financial system should always be accurate to maintain their relevance and value to management in controlling expenses to be within the authorized spending limit. The AMR contract authorized spending balance in the City's financial system (AFS2 until October 2006, then AFS3) differs from the available balance shown in the records of the AE Manager monitoring and approving AMR related payments. The contract amount loaded in the financial system keeps the project manager from spending more than was authorized. For the AMR contract, approximately \$8M in payments were not captured in AFS2 and an incorrect available balance was carried over to AFS3. In addition, a double entry of an encumbrance of approximately \$149,000 occurred in 2008. Taking the incorrect balance and the duplicate encumbrance into

account, the AMR Contract Balance in AFS3 was overstated by approximately \$7.85M as of July 2008.

EXHIBIT 3

AMR Contract Expenditures

AMR Contract Authorized Spending Limit	\$36,000,000
Less Payments from Oct.2002-Sept.2006 per OCA	<u>\$12,927,945</u>
Expected Balance as of September 2006	\$23,072,055
Less: Payments from Sept.2006- Jul.2008 per OCA	<u>\$ 3,554,787</u>
Expected AMR Contract Balance as of July 2008	\$19,517,268
AMR Contract Balance per AFS3 as of July 2008	<u>\$27,371,243</u>
Overstatement in AFS3 as of July 2008	\$ 7,853,975

SOURCE: AFS2, AFS3, and OCA's analysis of project documentation.

Recommendations:

03. The Purchasing Officer should ensure that the correct balance for the AMR contract is reflected in AFS3.

MANAGEMENT RESPONSE: CONCUR

Balance was corrected on July 25, 2008.

04. In addition, the Purchasing Officer should take the lead in identifying the cause of the discrepancies in AFS2 that were carried over to the new AFS3 system, and Contract Administration should identify any other contracts that were also overstated and correct the financial system accordingly.

MANAGEMENT RESPONSE: CONCUR

The Purchasing Officer working with the Controller will assess the status of all master agreements converted from AFS2 that have the same issue as the AMR master agreement. Once the population of agreements has been identified, the two offices will work to correct existing open master agreements in Advantage 3.

Unlike in the original AMR contract, Austin Energy did not apply the same prudence to the addenda to that contract.

When executing the amendments to the 2002 AMR contract which expanded the contract to encompass an additional 234,000 meters using two-way technology, AE did not apply the level of prudence used for the original contract. AE did not seek Council approval for the amendments despite committing AE to additional expenditures. When amending the contract, AE did not compare the amendment costs to other utilities or vendors, conduct a Citywide impact study, involve Purchasing or incorporate certain standard purchasing terms, or incorporate timelines or penalties for delays into the contract amendments. Lastly, instead of implementing the new, untested, two-way technology for a subset of customers, AE initiated the two-way implementation for all 234,000 remaining un-automated customers.

AE did not seek Council approval prior to executing addenda to the 2002 contract, even though the addenda committed the City to additional expenditures that would deplete authorized funds several years prior to the expiration of the original contract. AE did not seek City Council approval for addenda 4 and 5, which involved expanding automated metering to 234,000 additional customers, before executing the amended contract with CellNet. Purchasing procedures contained in the City Charter require that a contract or an amendment to a contract involving expenditures beyond the City Manager's spending authority be expressly approved by the Council. The City Manager's spending authority, which is adjusted annually, was \$49,000 at the time AE executed the addenda.

The addenda for the expansion will use up the authorized contract amount of \$36M much earlier than was originally intended by the Council and committed the City to additional expenditures that exceeded the City Manager's spending authority. More specifically, addendum 4 committed the City to per read prices for two-way metering services for the 234,000 additional meters and established additional fees if AE continues the contract past the initial seven-year term (2009). AE's cash flow analysis indicates that meter reading services alone for both the one-way and the two-way meters would require a total expenditure of \$52M from 2007 to 2021. In addition, under the original agreement in 2002, the "Termination for Convenience Fee" for 2009 was only \$3M, while addendum 4 committed AE to pay, beginning in 2010, a termination fee that decreases the longer AE stays in the contract with CellNet, ranging from \$18M in 2010 to \$9.7M upon expiration of the contract in 2017. Addendum 4 also committed AE to pay per unit MIU retirement fees that begin in 2009 and also decrease the longer AE stays in the contract with CellNet. Exhibit 3 shows the MIU retirement fees agreed to in addendum 4.

EXHIBIT 4
MIU Retirement Fees Agreed to in the Amended Contract

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Residential MIU: one-way	\$52.45	\$48.41	\$44.38	\$40.34	\$36.31	\$32.27	\$28.24	\$24.21	\$20.17
Residential MIU: two-way	\$56.95	\$52.57	\$48.19	\$43.81	\$39.43	\$36.06	\$30.67	\$26.29	\$21.90
C&I MIU	\$285.30	\$283.36	\$241.14	\$219.47	\$197.52	\$175.57	\$153.63	\$131.68	\$109.73

SOURCE: Exhibit K-3 of Addendum 4 to the 2002 Automated Meter Reading Contract

AE indicated that they did not seek Council approval for the addenda because the original authorized contract cost of \$36M was not yet expended. AE planned to go back to Council at some point to obtain additional spending authorization, but AE has already committed to more costly contract terms, such as storage costs per meters. Also, depending on the timing of requesting authorization and activation of meters with two-way MIUs, AE could have already obligated the City to pay MIU retirement fees for active meters.

Also, if the contract continues past 2009, addendum 4 could ultimately compel the Council to approve the extension of the contract beyond 2017 in order to avoid the \$9.7M Termination for Convenience Fee, and at the same time, could make it hard for another vendor to compete if AE decided to terminate with the current vendor and create a new contract.

Recommendations:

05. The AE General Manager should seek Council approval for the AMR contract addenda.

MANAGEMENT RESPONSE: CONCUR

AE will bring the AMR contract addenda forward for Council approval at the next available Council date. The addenda will be scheduled for action by the Electric Utility Commission on November 17, and for Council action on November 20.

06. The AE General Manager should seek approval for contract addenda that involve current or future commitments exceeding the City Manager’s approval limit prior to executing the contract in compliance with paragraph six of Council Resolution 20040610-02, regardless of whether the amended increase in future expenditures is contingent upon future action.

MANAGEMENT RESPONSE: CONCUR

AE Legal will review all proposed contracts and contract amendments that are not processed through Purchasing to determine compliance with Council Resolution 20040610-02.

AE did not compare CellNet’s proposed prices for two-way metering to other vendors’ prices. However, AE feels that prices for the two-way metering are reasonable based on current one-way metering and manual read prices. Despite the significant investment incurred by expanding automated meter reading to an additional 234,000 two-way meters, AE did not conduct a cost comparison analysis with respect to similar services provided by other vendors or obtained by other utilities. Instead, AE relied on internal evaluations, primarily involving comparison of AE’s cost for one-way meter reading technology and manual meter reading to proposed costs for two-way technology.

AE created a 12-member evaluation team to compare costs and benefits of two-way automated metering technology. The evaluation team focused on evaluating CellNet’s proposal for two-way services, and did not include evaluation of alternative technologies or hybrid solutions. Members of the evaluation team indicated that they believed CellNet would have been the lowest bidder for two-way technology so other options were not pursued. Ultimately, the evaluation team recommendation read as follows:

“From the Needs Analysis and Value Analysis, the Team determined that (1) a full scale AMR system is needed to provide the advanced metering functions desired by AE and (2) the potential benefits from a full-scale AMR system outweigh the risks. The Financial Analysis on the other hand, indicates the business case for the expansion is negative, as its net meter reading cost (over the 15-year service agreement) is roughly \$7.5 million higher than the cost for the current meter reading process. The unfavorable business case should not be the sole determining factor in the decision process; the other evaluation criteria, which are strongly positive are just as important. Furthermore, the amount of the overall increase, when considered over a 15-year span, is a reasonable cost to AE for the many expected benefits. Thus, the Team unanimously recommends that AE move forward with a full-scale AMR deployment with features, capabilities and benefits similar or greater than those in the CellNet proposal. In addition, a majority of the Team supports moving forward with the CellNet AMR expansion proposal subject to contractual modifications.”

Because AE did not explore alternatives to CellNet technology or compare CellNet’s cost to other options, AE does not know whether it is getting the best price and best technology in the market.

Recommendation:

07. The Senior Vice President of Electric Service Delivery should perform a cost comparison check in the marketplace as soon as possible to see where AE stands insofar as metering service costs and technology are concerned. If the prices do not seem fair based on this evaluation, AE should use the information obtained to negotiate better pricing with CellNet.

MANAGEMENT RESPONSE: CONCUR

AE will perform an informal industry cost comparison to determine where AE's fall in comparison to others available in the industry.

AE still did not involve Purchasing or incorporate certain standard provisions into the addenda for the AMI expansion; incorporating certain warranty price provisions could have resulted in AE paying lower per-read prices for existing one-way meters. Had Purchasing been involved in the AMR contract, including the addenda, Section 300 of the City's "Standard Purchasing Terms and Conditions" could have been part of the 2002 AMR contract and addenda. AE would have legal basis to invoke the warranty price provision of Section 300 where it states that:

- "The Contractor warrants the prices quoted in the Offer are no higher than the Contractor's current prices on orders by others for like deliverables under similar terms of purchase.
- The Contractor certifies that the prices in the Offer have been arrived at independently without consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such fees with any other firm or with any competitor.
- In addition to any other remedy available, the City may deduct from any amounts owed to the Contractor, or otherwise recover, any amounts paid for items in excess of the Contractor's current prices on orders by others for like deliverables under similar terms of purchase."

The warranty price provision could have given AE extra leverage in renegotiating for a reduction in the meter read price of the existing 126,000 one-way meters. By applying the \$0.49 meter read price not only to those automated meters with one-way MIUs included in the expansion but to all automated meters with one-way MIUs, including the existing 126,000 automated meters with one-way MIUs, AE could have saved at least \$79,000 per month.

Austin Energy did not perform a Citywide study to determine the overall impact of the AMI expansion. A Citywide study prior to expanding the AMR contract to cover all AE customers could have identified the full financial impact for the City, instead of only the impact for AE. One benefit of using automated technology is that it reduces costs associated with trips to manually read meters. The City currently contracts for manual

meter reading services and, where possible, contractors read both water and electric meters simultaneously. Because AWU meters were not included in the automation effort, the City will only save on trip costs for electric-only customers. AWU will still pay the costs associated with manual reads for their meters. AE did approach AWU about partnering on the automated metering technology early on, but AWU did not want to participate in the automated metering as AWU had other priorities at that time. AWU officials have indicated that they may work with AE on automated metering in the future.

Because AE entered into the addenda for a full-scale AMI expansion that relied on new technology instead of piloting for a subset of customers, AE accepted additional risks.

Austin Energy was the first customer for CellNet's two-way wireless communication technology. When AE entered into the addenda (Addenda 4 and 5) for the AMR expansion, CellNet's two-way technology was not in production. Still, AE decided to implement a full-scale AMI expansion for all remaining AE customers in its service territory, instead of implementing two-way metering for a subset of customers first, as AE did in the 2002 AMR contract. AE management pointed out that CellNet showed AE a demonstration that proved CellNet's capability to implement the two-way automated metering technology. AE then entered into addenda with CellNet for the two-way system and required CellNet to provide the two-way technology for AE at its own expense. As part of the amended contract terms, implementation of the two-way system is contingent upon successful completion and acceptance by AE of beta-testing. AE management asserted that CellNet has already spent approximately \$10M on its AMR expansion infrastructure while AE has not spent anything for the upgraded technology. Because the MIUs are proprietary to CellNet, AE accepted a significant risk associated with the MIU Retirement Fees and installation costs associated with CellNet-owned MIUs. As previously discussed, if AE terminates the contract with CellNet then beginning in 2009 AE has to pay CellNet a fee for every activated meter with CellNet-owned MIUs that is retired from service. AE has purchased, through Council-approved contracts, over 130,000 of the 234,000 automated meters with two-way CellNet-Owned MIUs. The more automated meters with two-way CellNet-owned MIUs AE buys, the higher the MIUs Retirement Fees will be in the event AE severs its ties with CellNet.

AE could have first tested the two-way technology for a subset of customers and later expanded to the rest of AE's customers after the technology had been successfully implemented for the subset of customers. Had AE focused first on a subset of customers, there would have been lesser investment because there would be fewer meters to purchase and deploy, lower storage costs (\$6.04/meter), and fewer meters subject to the MIU Retirement Fees.

Unlike the original contract, the addenda for AMI did not impose timeliness sanctions on CellNet for completing installation and testing of the two-way metering technology.

The 2002 AMR contract for the one-way technology contained a default provision that holds CellNet in default if CellNet was not able to provide initial system deployment within six months from effective date and if full deployment is not achieved due to CellNet's failure to perform its obligation.

However, the addenda for the expansion, which started in December 2006, did not contain any target dates for CellNet's implementation of the two-way technology, and even protected CellNet from any penalty to the extent any deployment delays are caused by CellNet including CellNet's failure to comply with the Agreement. As a result:

- CellNet has been incurring delays in the implementation of the two-way system and the deployment deadline has been moved from December 2008 to July 2009.
- AE may shoulder penalties imposed by AE's meter installation contractor because of the delays in the deliveries of automated meters with two-way CellNet-owned MIUs that were caused by product quality issues with CellNet-owned modules embedded inside the automated meters.

At the time that addenda 4 and 5 were signed, AE should have incorporated provisions to penalize CellNet in the event that a reliable and accurate two-way metering system is not achieved within a prescribed, agreed upon period.

AE could not provide a reliable figure for the number of purchased, installed, and on-hand two-way meters.

AE should be able to readily provide information about the number of automated meters with two-way MIUs purchased, installed, and on-hand. AE captures information about the automated meter inventory using CIS including when a meter is received and tracks when the meter is installed. AE relies on CellNet for tracking inventory between receipt and installation. We reviewed three different sources for inventory counts and were not able to reconcile inventory figures. While this may represent an issue with the data rather than actual missing inventory, AE should be able to readily provide a reliable figure of the number of purchased, installed, and on-hand two-way meters to ensure that all meters are accounted for.

Recommendation:

08. In order to ensure that all purchased meters are accounted for, the Metering Operations manager should develop a system that captures inventories of two-way meters and can provide real-time reports regarding AE's meter inventory.

MANAGEMENT RESPONSE: CONCUR

AE and Meter Operations recognized the need to upgrade the meter inventory system and began over a year ago. Dedicated areas have been constructed at all sites to securely store all meter inventory. In addition to the master inventory scanner and database computer at the Meter Operations central warehouse, dedicated computers with attached scanners have been installed to record and track inventory once it has left the master site and issued to the various remote locations and service centers. Each of these remote sites will record meters received and issue meters with assigned responsible individual and truck numbers. AE will perform monthly true ups. This upgraded system will serve as an interim solution as AE is in process of installing a meter data management system (scheduled to be completed by Q1 2009) and will be initiating several pilots to test the meter inventory and asset management

modules that are available in the Maximo software system. Pending successful pilots, Maximo is targeted to be the official place of record for meter asset management and inventory data.

The current inventory true up, while not exact, is much closer than the original numbers reported by the audit report. The report initially quoted a discrepancy of "22,000 to 35,000." Actual figures show only minor discrepancies that are attributable to: 1) the fact that meters are unaccounted for while in transit, 2) the fact that AE currently uses three distinct reporting tools that documents counts at different times.

**APPENDIX A
MANAGEMENT RESPONSE**



M E M O R A N D U M

TO: Steve Morgan, City Auditor
FROM: Roger Duncan, AE General Manager *RD*
DATE: October 24, 2008
RE: AMR Contract Audit

We appreciate the work done by your staff to review the implementation of the AMR project. Attached you will find Austin Energy's management response to your office's audit report, which generally concurs with all recommendations.

Austin Energy appreciates the recommendations your office has made regarding the project, which will enhance and reinforce our ongoing efforts to bring reliable, cost-effective AMR services to our customer base. Many of the recommendations have been implemented, and we will work diligently to implement the remainder. I thank you and your staff for their considerable time and effort on this.

ACTION PLAN
Austin Energy Automated Meter Reading Contract Audit

Rec #	RECOMMENDATION TEXT	Concurrence	Proposed Strategies for Implementation	Status of Strategies	Responsible Person	Proposed Implement. Date
01	The AE General Manager should ensure that AE adheres to the City's policies and procedures for critical business needs and negotiate to incorporate Section 300 of the City's Standard Purchasing Terms and Conditions into all future contracts, where applicable, for procurements made under the critical business need justification.	Concur	AE will manage critical business need procurements through Purchasing, and will maintain agreement with Purchasing as to its level of involvement with industry-specialized contracts such as fuel and power purchase agreements. AE will work through Purchasing regarding future negotiations and procurements under the AMR contract.	Implemented	Roger Duncan	N/A
02	In addition, the AE General Manager should develop and seek agreement from the contractor for needed amendments that incorporate Section 300 in the current AMR contract.	Concur	AE will attempt to obtain agreement from the vendor to incorporate applicable Section 0300 terms into the contract before the renewal option deadline of January 7, 2009.	Underway	Cheryl Mele	January 7, 2009
03	The Purchasing Officer should ensure that the correct balance for the AMR contract is reflected in AFS3.	Concur	Balance was corrected on 07/25/08	Implemented	Byron Johnson	07/25/08

Rec #	RECOMMENDATION TEXT	Concurrence	Proposed Strategies for Implementation	Status of Strategies	Responsible Person	Proposed Implement. Date
04	In addition, the Purchasing Officer should take the lead in identifying the cause of the discrepancies in AFS2 that were carried over to the new AFS3 system, and Contract Administration should identify any other contracts that were also overstated and correct the financial system accordingly.	Concur	The Purchasing Officer working with the Controller will assess the status of all master agreements converted from AFS2 that have the same issue as the AMR master agreement. Once the population of agreements has been identified, the two offices will work to correct existing open master agreements in Advantage 3.	Underway	Byron Johnson 974-2050	12/31/08
05	The AE General Manager should seek Council approval for the AMR contract addenda.	Concur	AE will bring the AMR contract addenda forward for Council approval at the next available Council date. The addenda will be scheduled for action by the Electric Utility Commission on November 17, and for Council action on November 20.	Planned	Andy Perny 322-6277	November 20, 2008

Rec #	RECOMMENDATION TEXT	Concurrence	Proposed Strategies for Implementation	Status of Strategies	Responsible Person	Proposed Implement. Date
06	The AE General Manager should seek approval for contract addenda that involve current or future commitments exceeding the City Manager's approval limit prior to executing the contract in compliance with paragraph six of Council Resolution 20040610-02, regardless of whether the amended increase in future expenditures is contingent upon future action.	Concur	AE Legal will review all proposed contracts and contract amendments that are not processed through Purchasing to determine compliance with Council Resolution 20040610-02.	Underway	Andy Perny 322-6277	Ongoing
07	The Senior Vice President of Electric Service Delivery should perform a cost comparison check in the marketplace as soon as possible to see where AE stands insofar as metering service costs and technology are concerned. If the prices do not seem fair based on this evaluation, AE should use the information obtained to negotiate better pricing with CellNet.	Concur	AE will perform an informal industry cost comparison to determine where AE's fall in comparison to others available in the industry.	Planned	Cheryl Mele	December 7, 2008

Rec #	RECOMMENDATION TEXT	Concurrence	Proposed Strategies for Implementation	Status of Strategies	Responsible Person	Proposed Implement. Date
08	In order to ensure that all purchased meters are accounted for, the Metering Operations manager should develop a system that captures inventories of two-way meters and can provide real-time reports regarding AE's meter inventory.	Concur	<p>AE and Meter Operations recognized the need to upgrade the meter inventory system and began over a year ago. Dedicated areas have been constructed at all sites to securely store all meter inventory. In addition to the master inventory scanner and database computer at the Meter Operations central warehouse, dedicated computers with attached scanners have been installed to record and track inventory once it has left the master site and issued to the various remote locations and service centers. Each of these remote sites will record meters received and issue meters with assigned responsible individual and truck numbers. AE will perform monthly true ups. This upgraded system will serve as an interim solution as AE is in process of installing a meter data management system (scheduled to be completed by Q1 2009) and will be initiating several pilots to test the meter inventory and asset management modules that are available in the Maximo software system. Pending successful pilots, Maximo is targeted to be the official place of record for meter asset management and inventory data. (CONTINUED ON FOLLOWING PAGE)</p>	Implemented	Jerry Hernandez	N/A

Rec #	RECOMMENDATION TEXT	Concurrence	Proposed Strategies for Implementation	Status of Strategies	Responsible Person	Proposed Implement. Date
08			<p>(RESPONSE CONTINUED FROM PREVIOUS PAGE)</p> <p>The current inventory true up, while not exact, is much closer than the original numbers reported by the audit report. The report initially quoted a discrepancy of "22,000 to 35,000." Actual figures show only minor discrepancies that are attributable to: 1) the fact that meters are unaccounted for while in transit, 2) the fact that AE currently uses three distinct reporting tools that documents counts at different times.</p>			