

April 18, 2016

REPORT #: 2016-06

Steve Zurn, General Manager
Glendale Water & Power (GWP)

Dear Steve,

Enclosed is the final report of the Natural Gas Contracts Management Audit. Internal Audit would like to thank you and your staff for the support and assistance provided during the course of the audit.

Should you have any questions, please feel free to contact Sameel Salim or myself.

Thank you,



Eileen Donahue,
Internal Audit Manager

Enclosure

cc: Ramon Abueg, Chief Assistant General Manager
Yasmin Beers, Assistant City Manager
Robert Elliot, Director of Finance
April Fitzpatrick, Deputy General Manager
Michele Flynn, Assistant Director of Finance
Scott Ochoa, City Manager
City Council
Audit Committee

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INTERNAL AUDIT

Natural Gas Contracts Management Audit

April 18, 2016

Background

In accordance with Internal Audit's fiscal year 2015-16 annual work plan, Internal Audit performed an audit of the of Glendale Water & Power (GWP) Natural Gas Contracts administered by the Energy Management Section.

One aspect of GWP is the business of generation, transmission, and distribution of electricity for the benefit of the City of Glendale. The Energy Management Section's main objective is to provide reliable and cost effective power to meet load requirements and secondarily to monetize surplus owned resources through sales of surplus energy, capacity, and other wholesale energy services.

A key input for the generation of electricity is the purchase, transportation, and usage of natural gas. There are currently three main counterparties that provide the bulk of GWP's natural gas. In addition to the three natural gas providers, there are also various counterparties responsible for transporting purchased natural gas to their end use location. From July 2015 to December 2015, the total expenditures related to natural gas purchases exceeded \$5.5 million.

GWP's official system of record for energy transactions is provided by the energy trading and risk management system, Allegro. The system is a mature platform used in the energy sector with built in controls, such as password protection and segregation of duties. There are six user roles in the system: 1) Contracts, 2) Trading, 3) Scheduling, 4) Settlements, 5) System Administrator,

and 6) Security. These six user roles are meant to ensure segregation of duties. Allegro went live in July 2015 and is still undergoing some routine post go-live enhancements.

Objective, Scope, and Methodology

The primary objective of this audit was to determine if natural gas contracts are being managed in accordance with applicable policies, procedures, and contract guidelines. The scope of this audit covered the natural gas transactions from July 2015 to December 2015.

In order to accomplish the audit objective, Internal Audit performed the following procedures:

- Reviewed applicable policies and procedures governing the energy transaction process.
- Examined contracts to determine if they were created, monitored, and tracked in accordance with internal policies and/or contract specifications.
- Inspected natural gas related invoices to determine if they were properly reviewed, approved, and substantiated prior to payment.
- Evaluated the energy transaction system of record, Allegro, to determine if adequate segregation of duties existed for the users.

Summary of Results

Internal Audit found policies and procedures governing energy transactions are in place, such as the Back Office Settlement Procedure and various Energy Trading Risk Management (ETRM) Policies. Internal Audit noted that these policies and procedures have not been formally signed off by senior management.

Internal Audit also reviewed the GWP Energy Risk Management (ERM) Policy approved by City Council. The ERM Policy, which is annually authorized through resolution, allows GWP to dispense with competitive bidding for energy transactions and enter into certain contracts without the need of City Council review or approval.

Further, the ERM Policy contains an approval matrix dictating the required approvals needed when certain dollar and MMBtu thresholds are met. The matrix states transactions without expiration dates and no identified maximum MMBtu volume per day require City Council review and approval. Also, City Council review and approval is required on transactions that exceed five years in term and exceed 10,000 MMBtu volumes per day. Most individual natural gas transactions do not meet the thresholds which would require City Council review and approval.

Internal Audit requested natural gas contracts for all active counterparties within Allegro. The contracts were examined to ensure they were signed by the counterparty and GWP official. The contracts term limit was reviewed to

ensure the contracts were not expired. In addition, the total expended to date for each contract was reviewed to ensure the purchase order thresholds have not been exceeded. All of the contracts reviewed were signed, active, and total expended to date was within the allowable limits set forth in the purchase orders.

All of the natural gas invoices from July 2015 to December 2015 were obtained and inspected. Each invoice was checked for evidence of review and approval by management. The quantity of gas and price per MMBtu on each invoice was verified to supporting documentation, including validating invoiced figures to GWP's internal system of record, Allegro. Lastly, a sample of natural gas transactions found within Allegro was traced to their source trade information (phone call, email, or instant messenger).

Generally speaking, GWP validates price and quantity for natural gas invoices prior to approval. However, Internal Audit noted the market price per MMBtu noted for one counterparty is not being independently validated prior to approval of each invoice. Additionally, with the exception of the GWP back office analyst, no subsequent reviewer is checking the quantity and price noted on invoices against GWP's internal system of record, Allegro, for accuracy.

Testwork over system access found that Allegro has six pre-defined roles which were designed to ensure proper segregation of duties. Of the nine active Allegro users, eight can perform more than one role. Four of the nine users have "Sys Admin" rights, which can perform every role in the system (two are Information Services Department (ISD) employees). See table below (user

names were intentionally hidden) for a summary of the access rights for each of the nine active users:

	Contracts	Trading	Scheduling	Settlement	Sys Admin	Security
User 1	X			X		
User 2	X	X	X		X	
User 3	X			X		
User 4					X	X
User 5		X	X			
User 6		X	X		X	
User 7			X			
User 8					X	X
User 9	X			X		

Conclusion

Based on Internal Audit's independent assessment, controls over natural gas contracts appear generally adequate. However, five opportunities for improvement were made to further strengthen internal controls as summarized by risk rating in the chart that follows and included in the Observation, Recommendation, and Management Response Section of this report.

Priority 1

Critical control weakness that exposes the City to a high degree of combined risks.

None

Priority 2

Less than critical control weakness that exposes the City to a moderate degree of combined risks.

- o Number of Allegro users with "Sys Admin" rights is not adequately limited or monitored.

Priority 3

Opportunity for good or better practice for improved efficiency or reduce exposure to combined risks.

- o No independent validation of the price per MMBtu in the invoice for one natural gas counterparty.
- o Policies and Procedures not formally signed off by senior management.
- o Limited annual City Council visibility of energy transactions.
- o Reviewers after GWP back office analyst not validating invoiced quantity and price against the internal system of record, Allegro.

Item	Observation	Recommendation	Management Response
Priority 2	<p>1. Based upon evaluation of the Allegro user access rights it was found that four of the nine users have the System Administrator role which is more than the minimum number necessary to maintain continuous operations of the system. Further, no compensating controls have been implemented to minimize the risks of accumulation of duties for these System Administrator users.</p>	<p>It is recommended that management evaluate the users with the System Administrator role and reduce the access to the minimum level necessary. Further mitigating controls such as active monitoring of System Administrator user activity and exception report monitoring should be put in place.</p>	<p>Management agrees with the recommendation and will review the roles and access rights in conjunction with the approval of the policies and procedures.</p>
	<p>Additionally, the duties of the Security role appears to be limited to ensuring the system remains operational and does not include day to day security monitoring or user access reporting. For example, when requested to provide an extract of active users and their respective roles, the user with the Security role was unable to provide the information from the system.</p>	<p>Additionally, responsibilities of the various roles, should be formally defined, documented, and communicated with all applicable users. This will ensure all users are aware of the roles and responsibilities assigned to them.</p> <p>Further, communications should occur with ISD management regarding the responsibilities of the Security Role to confirm the expectation that users in the Security role provide regular monitoring, tracking and reporting of user activities in Allegro.</p>	<p>The anticipated completion date is September 30, 2017.</p>

	Item	Observation	Recommendation	Management Response
Priority 3	2.	The invoice review process for one natural gas counterparty does not include validating the market price per MMBtu. Whatever market price is quoted within the invoice is assumed correct and approved even though the market price fluctuates. In the event the quoted market price is incorrect, the City would be over/under paying the invoice.	Internal Audit recommends the market price per MMBtu be independently validated by the Back Office prior to approval of each invoice. If obtaining the market price is not feasible, GWP Back Office staff should ask for a copy of the market price to be included in the monthly invoice package.	Management agrees with the recommendation and will implement the validation process by July 1, 2016.
Priority 3	3.	Internal Audit reviewed the various policies and procedures governing energy transactions, such as the Back Office Settlement Procedure and various ETRM Policies. These policies and procedures have not been formally signed off by senior management. In addition, the ETRM Regulatory and Compliance Policy appears to be incomplete as it has some blank sections.	Internal Audit recommends that management review, update (if needed), and formally sign-off and approve the Policies and Procedures governing energy transactions.	Management agrees with the recommendation and will review, finalize and approve the pertinent Policies and Procedures by September 30, 2016.

	Item	Observation	Recommendation	Management Response
Priority 3	4.	Testwork found that the majority of the individual natural gas transactions in our test universe did not meet the thresholds which would require City Council review and approval. Nonetheless, the total dollar amount spent on these transactions from July 2015 to December surpassed \$5.5 million, which is significant. Therefore, City Council should have more informational visibility to these transactions on an annual basis.	Internal Audit recommends GWP to utilize the preexisting ERM Policy approval process and present a summary of the preceding year's energy transactions to City Council annually in order to increase the transparency of the natural gas transactions and visibility by the City Council.	Management agrees with the recommendation and will provide the summary of the transactions when the new ERM policy is updated by July 1, 2016.
Priority 3	5.	With the exception of the GWP back office analyst, no subsequent reviewer is checking the invoiced quantity or price per MMBtu against Allegro for accuracy. Subsequent reviewers are only performing mathematical checks and other high level reviews. If the analyst incorrectly approves an incorrect invoice, there is a chance it may go through the approval process unnoticed.	Internal Audit recommends that the GWP back office analyst printout the monthly totals from Allegro and attach that to the Request for Wire package. This would allow any other reviewer to quickly perform a more meaningful review of the Request for Wire package prior to approval. If an upgrade from the financial system to Allegro is created, this recommendation would become redundant and no longer be applicable.	Management agrees with the recommendation and will implement the suggested changes by July 1, 2016.