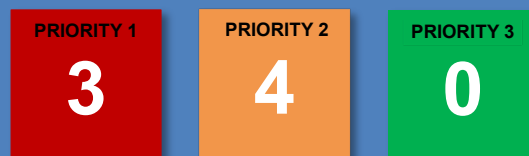


Report #2020-05

LOS ANGELES DEPARTMENT OF WATER AND POWER TRANSMISSION AGREEMENT LOSS ACCOUNTING AUDIT

NUMBER OF RECOMMENDATIONS



*City of Glendale
Internal Audit*

12.31.2019



Contents:

A. Overview.....	2
B. Action Plan and Target Completion Dates.....	3
C. Background	4
D. Objective, Scope and Methodology	5
E. Observations, Recommendations, & Management Responses Matrix.....	6
Appendix 1: Definitions of Priority Rankings and Value-Added Categories.....	12

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Acknowledgment

We would like to thank Glendale Water and Power personnel for the support and assistance provided to us throughout this project.

For questions regarding the contents of this report, please contact the lead auditor, Natalie Minami, Sr. Internal Auditor, or Jessie Zhang, Internal Audit Manager at

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A. Overview

Key Outcomes

The Los Angeles Department of Water & Power (LADWP) Transmission Agreement loss accounting calculations are not verified by Glendale Water and Power (GWP) staff for accuracy prior to their approval. As a result, LADWP has estimated a 43,730 MWh in transmission loss credit due to the City of Glendale for the period of February 1, 2013 to May 23, 2019 for the Intermountain Power Plant losses (IPPLosses), and Intermountain losses (ILosses). Based upon the average \$61/MWh cost, the value of the overscheduled transmission losses approximates to \$2.67 million. However, this estimate could not be confirmed due to a lack of documented loss calculation methodologies and lack of contracts or other supporting documentation for transmission loss percentages. The LADWP transmission loss accounting process could be improved by obtaining the loss accounting methodologies, obtaining the supporting documentation for the transmission loss percentages, and verifying the calculation prior to approving LADWP's scheduled transmission loss tags.

GWP management has created a template tool/worksheet to enable staff to verify the LADWP scheduled loss tags prior to approval. This procedure will provide GWP with a mechanism to ensure that transmission losses are accurately calculated and any discrepancies are resolved with LADWP in a timely manner.

Internal Audit identified seven improvement opportunities related to risk reduction, compliance, cost saving, and efficiency.

Impact Dashboard

This table summarizes the applicable value-added categories (total 17) for the seven recommendations based on their priority rankings.

	Value Added Categories				Innovation Opportunities
	Compliance	Cost Saving	Efficiency	Risk Reduction	
Priority 1 3	3	1	0	3	0
Priority 2 4	4	0	2	4	0
Priority 3 0	0	0	0	0	0

(Definitions of Priority Rankings and Value-added impacts are located at Appendix 1)

B. Action Plan and Target Completion Dates

The action plan and target completion dates are summarized in the table below. Internal Audit will perform quarterly status follow-up to provide assurance that management is taking appropriate and timely corrective action to address audit recommendations.

Ref.	Management Action Plan	Completion Date
Priority 1		
1.	Require all LADWP scheduled transmission loss tags to be independently calculated and verified prior to approval. <i>Value added:</i> Compliance , Risk Reduction	03/31/2020
2.	Verify LADWP's transmission loss credit and request LADWP to provide weekly documentation of the IPPLoss and ILoss calculations and immediately notify LADWP to resolve any discrepancies. <i>Value added:</i> Compliance , Cost Saving , Risk Reduction	03/31/2020
3.	Obtain supporting documentation required to verify ILoss, IPPLoss, and WLoss calculations on a going forward basis. <i>Value added:</i> Compliance , Risk Reduction	03/31/2020
Priority 2		
4.	Establish transmission loss accounting policies and procedures. <i>Value added:</i> Compliance , Efficiency , Risk Reduction	06/30/2020
5.	Provide transmission loss calculation verification training/cross-training to personnel and periodically rotate the task. <i>Value added:</i> Compliance , Efficiency , Risk Reduction	06/30/2020
6.	Require supervisors perform a periodic review of the transmission loss tags. <i>Value added:</i> Compliance , Risk Reduction	06/30/2020
7.	Establish and document the individual(s) responsible for installing OATI certificates and for maintaining a complete list of users and computers with the certificates, and restrict the exportability of the certificate to prevent unauthorized downloads. <i>Value added:</i> Compliance , Risk Reduction	06/30/2020

C. Background

In accordance with the Fiscal Year 2019-20 annual work plan, Internal Audit performed an audit of the LADWP Transmission Agreement Loss Accounting. The loss accounting is administered by the Energy Management Group under the Power Management Division, one of the six divisions within GWP. Under the supervision of the GWP Deputy General Manager/Power Management, the Power Management Division is responsible for ensuring reliable power supply through of a portfolio of resources. The City's Power Management – Energy Management Group consists of an Energy Trading Manager, Power Planning Manager, Power Systems Associate, Administrative Assistant, and Energy Trader.

Process Overview

Transmission of electricity over long distances creates power losses on the bulk electrical system (transmission losses). The specific loss percentages are defined by the transmission agreements between the cities of Glendale and Los Angeles. GWP schedules energy transmission on LADWP's transmission lines through the Open Access Technology International (OATI) transmission tagging system. On a weekly basis, LADWP calculates transmission losses for each transmission segment and schedules a loss tag to be reviewed and approved by GWP personnel. In the past, supporting documentation for the transmission loss tags was provided by LADWP to GWP personnel. However, since the retirement of a key LADWP staff member in 2012, GWP has not received any supporting documentation for the transmission losses and has not independently validated the calculated transmission losses.

Although the transmission loss calculation supporting documentation has not been provided by LADWP personnel since 2012, GWP personnel has the information and capability of independently calculating and verifying the LADWP transmission losses. GWP has access to the OATI transmission tagging system and has the ability to calculate the transmission losses based upon the percentages set forth in the LADWP transmission agreements (with the exception of missing agreements/memorandum). These independent calculations can then be used to verify the loss tags scheduled by LADWP prior to approval, based on current loss percentages.

Transmission Loss Credit

The Deputy General Manager/Power Management indicated that LADWP has previously overscheduled transmission losses and settled with the GWP. The Deputy General Manager/Power Management expressed concerns when he noted that LADWP has been consistently scheduling transmission loss tags on a line segment rarely used by GWP. A formal request was initiated by GWP staff on October 6, 2017 for the definition of the various losses and methodology to calculate losses to no avail. This audit has escalated the information request to a higher priority for both parties. As a result, LADWP re-calculated IPPLoss and ILoss and provided GWP a 43,730 MWh transmission loss credit for the period of February 1, 2013 to May 23, 2019. LADWP has also stopped scheduling loss tags effective May 24, 2019. However, GWP and Internal

Audit have not been able to confirm the credit amount due to lack of documented loss calculation methodologies and lack of contracts or other supporting documentation for transmission loss percentages.

D. Objective, Scope and Methodology

The objective of the LADWP Transmission Agreement Loss Accounting Audit was to determine whether adequate controls exist to ensure that the transmission losses are being accurately calculated and scheduled in accordance with the contract terms.

The scope of this audit covers the LADWP Transmission Agreement Loss Accounting for the period of January 1, 2018 to April 30, 2019 for wheeling losses (WLosses), and February 1, 2013 to May 23, 2019 for IPPLosses, and ILosses.

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

- Interviewed GWP personnel regarding the LADWP transmission loss accounting process.
- Obtained and reviewed the available LADWP transmission agreements.
- Performed detailed testwork on the transmission loss calculations, and the approved loss tags scheduled by LADWP and approved by GWP personnel.
- Reviewed the credit calculation LADWP and drawdown process.
- Participated in teleconference meetings between GWP and LADWP staff.
- Requested GWP staff to follow-up on LADWP's methodology since no procedures were documented for the LADWP transmission loss accounting verification process.
- Reviewed OATI system access controls.

As a result of these audit procedures performed, seven observations were identified and are detailed in the Observations, Recommendations, and Management Responses Matrix beginning on the following page.

E. Observations, Recommendations, & Management Responses Matrix

Ref	Observation	Recommendation	Management Response
1.	Transmission Loss Tag Approval		
Priority 1	<p>LADWP transmission loss tags are approved without review or verification. As a result, over or under scheduled transmission losses may not be detected timely.</p>	<p>GWP perform the following to reduce the risk of the inaccurate calculations of transmission losses:</p> <ul style="list-style-type: none"> Recalculate and verify all transmission loss tags prior to approval. GWP staff immediately notify LADWP of any discrepancies and withhold approval pending resolution. 	<p>Agreed and will implement by March 31, 2020.</p> <p>GWP management will establish and implement a policy requiring staff to verify all transmission loss tags prior to approval.</p> <p>GWP staff will immediately notify LADWP of any discrepancies and withhold approval for any discrepancies above a GWP management defined threshold pending resolution.</p>

Ref	Observation	Recommendation	Management Response
2. Over-Scheduled Transmission Losses			
Priority 1	<p>LADWP has calculated 43,730 MWh in overscheduled transmission losses from February 1, 2013 to May 23, 2019 for IPPLosses and ILosses. Based upon an average cost of \$61/MWh, the overscheduled transmission loss is estimated at \$2.67 million. However, GWP has not been able to verify LADWP’s calculation due to the following missing information:</p> <ul style="list-style-type: none"> • Agreed upon transmission loss accounting methodology; • Supporting documentation of all loss percentages by line segment; <p>Additionally, LADWP is not providing GWP with any documentation of the drawdowns on the IPPLoss and ILoss credit balance and the drawdowns are not being approved by GWP.</p>	<p>GWP perform the following to minimize the risk of inaccurate transmission loss calculations and credit drawdowns:</p> <ul style="list-style-type: none"> • Obtain the documentation necessary to re-calculate and confirm the overscheduled transmission loss estimated by LADWP. • Work with LADWP to establish a formal drawdown process that includes, but is not limited to, the following: <ul style="list-style-type: none"> ○ Weekly documentation of the IPPLoss and ILoss calculation and remaining credit balance. ○ IPPLoss and ILoss calculation to be reviewed on a weekly basis. ○ Communicate and resolve any discrepancies with LADWP within a week of receipt of the IPPLoss and ILoss calculation. 	<p>Agree and will implement by March 31, 2020.</p>

Ref	Observation	Recommendation	Management Response
3. Transmission Agreements and Loss Accounting Provisions			
Priority 1	<p>Transmission losses scheduled by LADWP could not be independently verified by GWP staff due to the following reasons:</p> <ul style="list-style-type: none"> • Documents could not be located to support eight out of 11 loss percentages being charged. • Documented methodology that is agreed upon by both parties for calculating losses could not be located. This includes the consistent practice of calculating transmission losses based upon net transmission per line segment, per day, and per hour. <p>In addition, 5 of 11 LADWP contracts containing transmission loss provisions did not include an audit clause.</p>	<p>GWP perform the following:</p> <ul style="list-style-type: none"> • Obtain all LADWP transmission agreements and/or supporting documentation required to verify the transmission loss calculation and safeguard these documents for future reference. • Obtain the methodologies required to re-calculate all transmission losses, ensure that the methodology agrees to the contract terms to reduce the risk of inaccurate calculations, and properly maintain the applicable LADWP transmission agreements for future reference. • Work with Legal to include an audit clause within all future agreements. 	<p>Agree and will implement by March 31, 2020.</p>

Ref	Observation	Recommendation	Management Response
4. Transmission Loss Accounting Procedure			
Priority 2	<p>Transmission loss accounting policies or procedures have not been established in order to ensure the accuracy of the transmission loss accounting:</p> <ul style="list-style-type: none"> • Methodology for independently calculating and verifying the MWh transmission loss tags scheduled by LADWP. • Reports required to be provided by LADWP. • The requirement that each LADWP transmission loss tag be verified prior to approval. 	<p>Establish and document a transmission loss accounting procedure to ensure consistent review and minimize business disruptions in the event of staff turnover. These procedures should include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • LADWP transmission loss tag verification process. • A listing of reports to be provided by LADWP with their frequencies and LADWP staff contact information. • A requirement that all transmission loss tags scheduled by LADWP be reviewed by GWP prior to approval. <p>Additionally, these policies and/or procedures should be reviewed and updated on a periodic basis.</p>	<p>Agree and will implement by June 30, 2020.</p>

Ref	Observation	Recommendation	Management Response
5. Transmission Loss Tag Calculation Training			
Priority 2	<p>Personnel responsible for approving the transmission loss tags have not been trained on the methodology used to recalculate and verify the accuracy of the transmission loss tags.</p>	<p>Train and cross-train personnel to calculate the transmission losses to minimize the risk that incorrect loss tags scheduled by LADWP go undetected.</p> <p>Periodically rotate the loss tag approval task to minimize business disruptions in the event of staff absence or turnover.</p>	<p>Agree and will implement by June 30, 2020.</p>
6. Transmission Loss Tag Calculation Oversight			
Priority 2	<p>Supervisors do not perform a periodic independent review of the staff's transmission loss accounting verification calculation.</p>	<p>Require supervisors to perform a periodic review of the transmission loss tags scheduled by LADWP and approved by GWP staff to minimize the risk that the procedure is not being performed in a consistent and timely manner.</p>	<p>Agree and will implement by June 30, 2020.</p> <p>GWP management will require supervisors to review the transmission losses calculation on a monthly basis.</p>

Ref	Observation	Recommendation	Management Response
7.	OATI System User Access Controls		
Priority 2	<p>OATI access requires both a certificate and user ID and password. A review of the active OATI users and the certificates issuing process identified the following:</p> <ul style="list-style-type: none"> • Due to the limited number of available OATI software certificates, multiple staff members share OATI user IDs and passwords. A current list of the computers <u>and</u> users that have each certificate installed is not maintained. • OATI certificates are emailed to the end-user to be loaded onto their computer. However, as the ability to download the certificate has not been restricted, the original email recipient can download the certificate onto multiple computers. <p>Additionally, two emergency back-up laptops that have OATI certificates installed on them are not properly safeguarded.</p>	<p>GWP management establish and document the following:</p> <ul style="list-style-type: none"> • Individual(s) responsible for installing an OATI software certificate, method for installing the certificate, and maintaining a list of the users and computers that the certificate was installed on. In the event that the responsible individual is determined to be someone other than the Security Officer, establish and document the frequency that the information should be communicated to the Security Officer. • A restriction to prevent the end-user from exporting the certificate by confirming that the “mark this certificate as exportable” is unchecked to prevent unauthorized downloads. <p>Additionally, laptops should be properly secured to prevent unauthorized access.</p>	<p>Agree and will implement by June 30, 2020.</p>

Appendix 1: Definitions of Priority Rankings and Value-Added Categories

Definitions of Priority Rankings

The priority rankings are assigned by internal auditors based on their professional judgment. They are also agreed to by management based on their evaluation of the alignment with the strategic goals, priorities and available resources. A timeline has been established based on each priority ranking:

- a. **PRIORITY 1** - Critical control weakness that exposes the City to a high degree of combined risks. Priority 1 recommendations should be implemented within **3 months** from the first day of the month following report issuance or sooner if so directed.
- b. **PRIORITY 2** - Less than critical control weakness that exposes the City to a moderate degree of combined risks. Priority 2 recommendations should be implemented within **6 months** from the first day of the month following the report issuance or sooner if so directed.
- c. **PRIORITY 3** - Opportunity for good or better practice for improved efficiency or reduce exposure to combined risks. Priority 3 recommendations should be implemented within **9 months** from the first day of the month following the report issuance or sooner if so directed.

Definitions of Value-Added Categories

The four value-added impact categories are defined based on their impact from the audit recommendations:

- a. **COMPLIANCE** - adherence to laws, regulations, policies, procedures, contracts, or other requirements.
- b. **COST SAVING** - lower the costs related to conducting City business.
- c. **EFFICIENCY** - ability to avoid wasting resources (money or time) in achieving goals.
- d. **RISK REDUCTION** - lower the risks related to strategic, financial, operations and compliance.

In addition, the **INNOVATION OPPORTUNITY** tag indicates the assistance and consulting services that may be provided by the Innovation and Performance Team.