



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Report

Office of the General Auditor

January 31, 2011

- **Internal Audit Report for January 2011**

Summary

Three reports were issued during the month:

- **Diemer Plant Improvements Program Audit Report**
- **Business Continuity Program Audit Report**
- **Remarketing Statement for the Water Revenue Refunding Bonds, 2009 Authorization, Series A-1**

Discussion Section

This report highlights the significant activities of the Internal Audit Department during January 2011. In addition to presenting background information and the opinion expressed in the audit reports, a discussion of findings noted during the examination is also provided.

Diemer Plant Improvements Program Audit Report

Background

The Robert B. Diemer Water Treatment Plant (Plant) was placed into service in 1963 to treat water received primarily from the Colorado River. The Plant treats a blend of water from the Colorado River and State project water and delivers it to Orange County, and parts of Metropolitan's Central Pool portion of the distribution system. The Plant had an initial capacity of 200 million-gallons per day (mgd), and was expanded to its current capacity of 520 mgd in order to meet the demands from member agencies. In addition to these capacity expansions, the Plant has had facility upgrades and improvements made throughout the years.

The Diemer Plant Improvements Program (Program) was established in November 2001 to ensure Plant reliability, compliance with federal and state drinking water quality regulations, improving water quality, and increasing the efficiency and safety of Plant operations.

The Program consists of two phases, with the initial phase beginning in November 2001. Phase I includes 22 projects, of which eight were completed and 14 are ongoing. Total costs of \$76.8 million have been incurred on these projects through September 2010. Phase II was established in July 2006 to implement infrastructure reliability projects. There are 17 projects included in Phase II, with two completed and 15 ongoing. Costs totaling \$6.3 million have been paid on these projects through September 2010. Both phases are scheduled to be completed in 2017.

Below is the list of completed and ongoing projects, with their corresponding cumulative costs as of September 2010.

Phase I Projects			
Item	Project #	Description	Amount
Completed Projects			
1	104096	South Slope Stabilization	\$27,625,600
2	103585	Filter Surface Wash Piping Rehabilitation	2,735,220
3	103493	Washwater Tank Pumps Replacement	851,981
4	103471	Reliability Studies and Preliminary Design	425,980
5	103354	Chemical Tank Farm Extension	382,000
6	103191	Chemical Storage Tanks	356,735
7	103269	Washwater Reclamation Plant No.2 Rehabilitation	344,269
8	103490	Administrative Building Reroofing	254,101
Ongoing Projects			
9	103786	Upgrade Power System to 66kV	16,845,745
10	103527	North Access Road	10,347,821
11	103650	Electrical Improvements Stage 1	7,773,369
12	103902	Finished Water Reservoir South Slope and East Washwater Tank Seismic Upgrades	2,402,979
13	103811	Washwater Reclamation Plant No. 3	1,675,774
14	103129	Basins Nos. 1-4 Rehabilitation	1,034,594
15	103640	Valve Starter & Electrical Wiring Upgrades	955,061
16	104097	Used Washwater Pump Station Phase II	865,127
17	104098	Partial Repaving of Plant Road	804,697
18	103637	Flow Meters and Vault	637,682
19	103904	Filter Outlet Conduit Seismic Upgrade	399,119
20	103268	Replace Used Washwater Return Pumps	100,161
21	103636	Sample Pump Automation	11,677
22	104284	Electrical Improvements Stage 2	1,420
		Total	\$76,831,112

Phase II Projects			
Item	Project #	Description	Amount
Completed Projects			
1	103773	Hatch Cover Replacement	\$794,307
2	103775	Lower Maintenance Road Rehabilitation	510,868
Ongoing Projects			
3	104122	Fire and Potable Water Pump Station	2,316,562
4	104175	East Washwater Tank Roof Refurbishment	756,699
5	103774	East Basins Dewatering Line Valve Replacement	475,808
6	103772	Emergency Broadcast System Rehabilitation	399,982
7	104120	East Basins Perimeter Water Line Replacement	354,369
8	104121	Washwater Reclamation No.2 Flocculator Improvement	225,739
9	104123	Filter Valve Replacement	203,087
10	104176	Filter Media Replacement	143,622
11	104253	Administration Building Seismic Upgrades	55,086
12	104254	Filter Buildings Seismic Upgrades	35,058
13	104247	Sample Line and Analyzer Improvements	16,000
14	104245	Chemical Feed Equipment Improvements	15,914
15	104246	Ammonia Feed System Upgrades	12,954
16	104255	Environmental Documentation for Planned Projects	4,558
17	104248	Backup Water Supply for Solids Handling Facility	3,513
		Total	\$6,324,126

Opinion

In our opinion, the accounting and administrative procedures over the Diemer Plant Improvements Program include those practices usually necessary to provide for a generally satisfactory internal control structure. The degree of compliance with such policies and procedures provided effective control for the period July 2007 through September 2010.

Comments and Recommendations

PROJECT COST OVERRUN

A budget is a quantitative expression of a plan of action for a given period of time, and an aid to the coordination, implementation, and measurement of the plan of action. The budget's purpose is to identify adequate financial resources to complete a project, and to provide a basis for accountability in fiscal management. Sound fiscal responsibility dictates that each project is associated with a budget and that monitoring and reporting of a project's actual vs. budget costs is performed by project management.

Our review of Project Accounting and Grant Management (PAGM) reports revealed that three Phase II projects (103772, 103774, and 104123) have exceeded their budgets by \$44,000, \$11,900, and \$6,600 respectively (totaling \$62,500), as of September 2010. Further review revealed that the cost overruns

were due to additional costs incurred for expanded scope of work to the projects or result from the delayed posting of recent board actions in the PAGM system. It is important to note that the overall Phase II Program expenditures were less than the board-appropriated amounts at all times.

In addition, we noted that Project 103774 was charged incorrectly for staff labor charges totaling \$12,925. These charges should have been recorded to Project 103335 (Diemer-Solids Transfer System Modifications) under Appropriation No. 15363 (Diemer Solids Handling and Water Reclamation). Incorrect recording of project costs or failure to update project budgets in the PAGM system could result in the Board and management making decisions based upon incorrect or incomplete information.

We recommend that project management fully implement procedures to ensure proper monitoring and timely updating of project budgets in Metropolitan's financial system. We also recommend that project management conduct tests to ensure compliance. Lastly, we recommend that project management complete the transfer of \$12,925 in labor costs incorrectly charged to Project 103774 to the appropriate project.

PROJECT COMPLETION

Project management entails planning, organizing, and managing resources to bring about the successful completion of specific project goals and objectives. It involves monitoring and controlling activities from project initiation to project closeout. Projects should be closed after all contractual requirements have been met, after all invoices have been accrued and/or paid, and after Metropolitan has discharged all obligations.

Our review revealed discrepancies of project status between the PAGM system and the Project Management's Status Summary. Four projects (103493, 103773, 103774 and 103775) were shown as incomplete projects (39 percent to 89 percent complete) in PAGM system; however, were reported as completed projects in the Status Summary as of September 2010.

We recommend that program management resolve the noted discrepancies.

Business Continuity Program Audit Report

Background

The Emergency Management and Business Continuity Operating Policy (A-06) describes how Metropolitan organizes and deploys resources to manage emergencies, and ensure continuity of water system operations and critical business processes. This policy provides the guidelines for evaluating and responding to emergencies. They also describe how the Emergency Response Organization (ERO) is activated. The ERO is an organizational structure adopted by Metropolitan based on California's Standardized Emergency Management System (SEMS) that provides a structured framework for responding to and managing emergencies and disasters.

The ERO consists of three components: Emergency Response, Business Continuity, and Information Technology Disaster Recovery. Emergency Response involves activities designed to address the immediate and short-term effects of an emergency. The Water System Operations (WSO) Group Manager is responsible for the Emergency Response efforts. Business Continuity consists of the

strategies needed to reestablish critical business functions with little or no downtime. The Chief Financial Officer is responsible for these efforts. Finally, Information Technology Disaster Recovery defines the processes used to restore the Information Technology infrastructure, critical business systems, and recover user data. The Information Technology Section Manager is responsible for this component.

The ERO is activated in one of two ways: directed response or automatic response. For directed response situations, the WSO Group Manager activates all or part of the ERO to respond to a specific emergency, such as pipeline failure. For automatic response incidents, the ERO activates automatically when any of these occur: (1) A magnitude of 5.5 or larger earthquake within Metropolitan's service area or anywhere along the Colorado River Aqueduct; (2) A magnitude of 6.0 or larger earthquake within 30 miles of Metropolitan's service area or the Colorado River Aqueduct; or (3) A magnitude of 7.0 or larger earthquake anywhere south of Baker or Bakersfield and north of the Mexican border. Following the activation of the ERO, emergency personnel report to their designated areas and activate the Emergency Operations Center and the Incident Command Centers without notification.

We completed a review of the administrative controls over the Business Continuity Program between July 1, 2008 and November 30, 2010. Our review consisted of evaluating compliance with Metropolitan policies and included an assessment as to whether the Business Continuity Program is synchronous with current operations. We also evaluated the adequacy of the Business Incident Command Center (BICC) exercises by examining management reports and follow-up efforts.

Opinion

In our opinion, the administrative procedures over Business Continuity Program include those practices usually necessary to provide for a generally satisfactory internal control structure. The degree of compliance with such policies and procedures provided effective control for the period between July 1, 2008 and November 30, 2010.

Although this report expresses an acceptable opinion, concern is noted over the delay in updating the Business Impact Analysis (BIA). This process is designed to identify operating risks and exposures, and to prioritize the timing and order of the recovery of business functions. The BIA document was last updated in July, 2002. In addition, we have concerns over the timing and quantity of disaster test exercises performed by the BICC. The BICC is responsible for overall business recovery efforts after an emergency occurs. Disaster test schedules for the BICC have been established and are integral to ensuring that Metropolitan's business functions can be recovered within the required timeframe, without interrupting water operations or other critical business functions. According to the Business Continuity Program Manager, lack of resources has delayed completion of the test schedule. It should be noted that management has initiated remedial actions in response to our concerns.

Comments and Recommendations

BUSINESS IMPACT ANALYSIS

Business Continuity is the activity performed by an organization to ensure that critical business operations and functions will be available to customers, suppliers, regulators, and other entities that must have access to those processes. Business Continuity Planning (BCP) identifies the organization's exposure to internal and external threats and allocates resources to provide effective prevention and recovery for the organization, while maintaining service reliability and functional integrity. In plain

language, BCP is working out how to stay in business in the event of a disaster. Incidents include local building fires, regional incidents like earthquakes, or national incidents like pandemic illnesses.

A Business Impact Analysis (BIA) results in the distinction between critical (urgent) and noncritical (non-urgent) organization functions/activities. A function may be considered critical if the implications for stakeholders of damage to the organization resulting are regarded as unacceptable. Perceptions of the acceptability of disruption may be modified by the cost of establishing and maintaining appropriate business or technical recovery solutions. The Emergency Management and Business Continuity Operating Policy (A-06) requires that the BIA be updated on a periodic basis to ensure that organizational and operating changes are reflected in the risk assessment process.

Our review revealed that the BIA was last updated in July 2002. As a result, Information Technology applications acquired since that point were not evaluated for Application Recovery Prioritization (ARP) and Recovery Time Objective (RTO). ARP is used to establish the prioritization of application systems and is necessary to provide some order of restoration that could be used in planning and/or allocation of resources. RTO is the length of time in which the application systems must be recovered, after an emergency or disaster.

Further, we noted that the list of members assigned to the Business Impact Analysis Steering Committee has not been updated since 2002. In addition, our review of recommendations contained in the July 2002 BIA Final Report revealed that documentation supporting the action plans, taken by management to respond to these comments, could not be located.

We recommend that Business Continuity Program Manager update the BIA and the list of members on the Business Impact Analysis Committee. We also recommend that BCP management prepare a status report on the prior BIA recommendations. Finally, we recommend that BCP management establish procedures to require periodic updates to the BIA and conduct reviews to ensure compliance.

BUSINESS INCIDENT COMMAND CENTER EXERCISES

As a part of the Emergency Response Organization (ERO), the Business Incident Command Center (BICC) is one of 12 incident command centers that are activated in the event of an emergency or disaster. Regular BICC exercises are necessary to ensure Metropolitan's business functions can be recovered within required timeframes without interrupting water operations or other critical business functions.

During our review, we noted that emergency exercises were not performed by BICC for the past two years. These exercises are necessary to ensure that the BICC's emergency response procedures are working properly as planned and to identify potential issues or problems. Inadequate testing and live exercises of the BICC may result in inefficiencies in activating or managing emergency response efforts. It could result in the failure to properly respond to an emergency or disaster, if personnel have not been properly trained, or if assigned emergency personnel have separated from Metropolitan and have not been replaced.

We recommend BCP management establish standards for the frequency of BICC exercises and conduct tests on a periodic basis.

USER VALIDATION PROCEDURES FOR APPLICATIONS AND DATA RECOVERY POINTS

Operating policies and procedures should be established and documented to provide a framework for achieving Metropolitan goals properly and adequately. Whereas policies guide actions toward a desired outcome, procedures provide Management with guidelines for consistent performance of daily operations. For the Information Technology information systems recovery, validation policies should be established to ensure information systems are fully recovered after an emergency. Business Continuity Program Manager and the business owners of the applications should document procedures to provide assurance that application functions are running as intended and the business data is completely recovered to a previous committed time point.

Our review revealed that user validation procedures prepared by Business Continuity program management are not consistent or complete.

We recommend BCP management establish user validation standards and procedures.

Remarketing Statement for the Water Revenue Refunding Bonds, 2009 Authorization, Series A1

The Audit Department has completed a review of the Remarketing Statement for the Water Revenue Refunding Bonds, 2009 Authorization, Series A1. This review was undertaken to provide the remarketers of the Bonds “comfort” that the Remarketing Statement for the Bonds is complete, consistent with supporting financial records, and accurate in all material respects. The review was completed and no exceptions were noted. We issued letters describing the agreed upon review procedures performed, and the results obtained to the remarketers of the Bonds.
