



Richmond City Council

The Voice of the People.

Richmond, Virginia

OFFICE OF THE CITY AUDITOR

REPORT # 2012-12

AUDIT

Of the

Department Of Public Utilities Multi Vendor Reading System (MVRs)

12 Months ended December 31, 2011

OFFICIAL GOVERNMENT REPORT

Richmond City Council

OFFICE OF THE CITY AUDITOR

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*Committed to increasing government efficiency, effectiveness,
and accountability on behalf of the Citizens of Richmond.*

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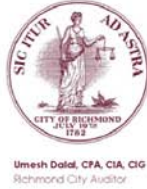
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Executive Summary

June 26, 2012

The Honorable Members of the Richmond City Council
The Honorable Mayor Dwight C. Jones

Subject: Department of Public Utilities – Multi Vendor Reading System (MVRS)

The City Auditor's Office has completed an audit of the Department of Public Utilities' (DPU) Multi Vendor Reading System (MVRS). This system facilitates automated water and natural gas meter readings.

Based on the results and findings of the audit methodology employed, auditors concluded that internal controls relevant to the MVRS processing are adequate and functioning effectively. However, the auditor noted a control deficiency over the security configuration, which DPU has already implemented one of the two recommendations and agreed to address the second recommendation by the end of June 2012.

The City Auditor's Office appreciates the cooperation of the Department of Public Utilities' staff. Please contact me for questions and comments on this report.

Sincerely,

Umesh Dalal

Umesh Dalal, CPA, CIA, CIG
City Auditor

cc: Mr. Byron C. Marshall, CAO
The Richmond City Audit Committee
Robert Steidel, DPU Director

#	<i>COMPREHENSIVE LIST OF RECOMMENDATIONS</i>	<i>PAGE</i>
1	Install the enhanced security option with stringent password rules on the MVRs.	3
2	Remove or disable the existing the default user accounts.	3

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Multi Vendor Reading System (MVRS) Audit 2012-12
12 Months ended December 31, 2011

Introduction

The City Auditor's Office has completed an audit of the Department of Public Utilities' (DPU) Multi Vendor Reading System (MVRS). This audit covers the 12-month period ended December 31, 2011. The audit was conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS) and Control Objectives for Information and related Technology (COBIT) guidelines issued by the Information Systems Audit and Control Association (ISACA). Those standards provide a reasonable basis for the conclusions regarding the internal control structure over MVRS and the recommendations presented.

Audit Objectives and Methodology

- Determine if MVRS processing is complete and accurate and supports business operations.
- Determine if application is secured and restricted to authorized individuals

Auditors employed the following methodologies to complete this audit:

- Interviewed relevant personnel;
- Reviewed policies and procedures;
- Reviewed system data, configurations, and reports; and
- Conducted other tests, as deemed necessary.

The management of the City of Richmond is responsible for maintaining relevant records and maintaining a system of internal accounting and management controls. In fulfilling this responsibility, management is required to assess the expected benefits and related costs of the control procedures.

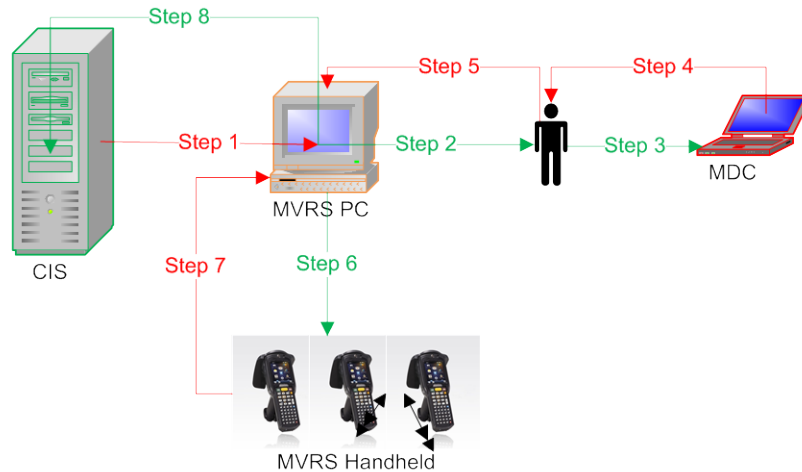
Background

MVRS is a PC-based meter reading software solution for data collection and route management. DPU uses MVRS Mobile Data Collectors (MDC) and handheld devices for collecting gas and water meter readings. DPU has set up eight routes in the system, which are split into specific

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geographic areas. When setting up MVRS, routes are assigned and are stored in the MVRS database. The routes must be 'built' so that the appropriate customer, meter and reading records for a route assignment can be sent to a MDC and handheld devices.

Meter Readings are taken five to seven days before the billing process begins and are performed Monday through Friday, except for holidays. The complete process of gathering Meter Readings data is illustrated below:



- Step 1: Customer data is sent to MVRs from CIS during the previous night
- Step 2: Customer data is copied to a flash drive by the supervisor
- Step 3: Data from flash drive is copied to a MDC
- Step 4: Customer meter reading data is copied to a flash drive by the Collector
- Step 5: The data in the flash drive is copied to the MVRs
- Step 6: Customers without any meter reading data are sent to handheld
- Step 7: Meter readings collected using hand held are sent to MVRs
- Step 8: Customer meter readings are uploaded to CIS for billing purposes.

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Overall Conclusion

This audit was conducted to evaluate the design and effectiveness of selected internal controls relevant to the objectives listed above. Based on the results and findings of the audit methodology employed, auditors concluded that internal controls relevant to MVRS processing are adequate and functioning effectively. However, the auditor noted a control deficiency over the security configuration.

The following table provides the details of one (1) deficiency identified during the audit.

What did the auditors find?	What is the risk?	Recommendation (How to mitigate the risk?)
<p><i>Unique user identifications(ID) are not created:</i></p> <p>For MVRS, the default security option is selected during installation. Therefore default user ID and passwords are used by the users to sign on to the application. With default security, the following security reports are not available from MVRS: User List, Daily User List, System User Log and Unsuccessful Access Log</p> <p>COBIT best practices requires control over the IT process of ensuring systems security to safeguard information against unauthorized use, disclosure, modification, damage or loss.</p>	<p>Without strong passwords, there is a greater potential for:</p> <ul style="list-style-type: none"> a. Gaining unauthorized access to the system. b. Gaining access to sensitive data and copying them for personal gain or use by another company. <p>The auditor was informed that only three users have access to the stand alone PC on which the MVRS resides. The auditor could not verify this as default user accounts are in use. There is an inherent risk with default accounts as any actions cannot be traced to a particular user making unauthorized change.</p>	<ul style="list-style-type: none"> 1. Install the enhanced security option with stringent password rules on the MVRS. 2. Remove or disable the existing the default user accounts.

MANAGEMENT RESPONSE FORM

DEPARTMENT OF PUBLIC UTILITIES - APPENDIX A

#	RECOMMENDATION	CONCUR Y-N	ACTION STEPS
1	<i>Install the enhanced security option with stringent password rules on the MVRS.</i>	Y	Completed 16 June 2012. Created a user ID and password on the MVRS application
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	Operations Manager		16-Jun-12
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION
	Production pending establishment of access permissions on the Paul server at Paul/MVRS/XFER. SAPR form submitted and approved 19 June 2012. Pending implementation by DIT Security.		Added Trades Supervisor I as supervisors. Each will log onto the MVRS application using their respective RICHVA domain user name and password, and their unique MVRS user ID and Password created for each under the MVRS Security Administration Settings.
#	RECOMMENDATION	CONCUR Y-N	ACTION STEPS
2	<i>Remove or disable the existing default user accounts.</i>	Y	Default user account can only be removed. Removal pending completion of SAPR process detailed in Recommendation Item 1 above.
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	Operations Manager		29-Jun-12
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION
	Removal of default MVRS User Account pending establishment of access permissions by DIT system security.		Submitted SAPR request 19 June 2012 to DPU Automation Coordinator. SAPR approved by Automation Coordinator and is now pending completion by DIT Security Administration. Once access permissions are granted for Trades Supervisor I, the MVRS Default user account will be removed.