



Mary Taylor, CPA
Auditor of State

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INDEPENDENT ACCOUNTANTS' REPORT

Director of Public Utilities
Commissioner of Water
City of Cleveland - Division of Water
1201 Lakeside Avenue
Cleveland, Ohio 44114

To the Director of Public Utilities and the Commissioner of Water:

We have examined the accompanying description of controls of the Division of Water (DOW) applicable to the processing of transactions for users of the Billing and Collection System. Our examination included procedures to obtain reasonable assurance about whether (1) the accompanying description presents fairly, in all material respects, the aspects of the DOW's controls that may be relevant to a user organization's internal control as it relates to an audit of financial statements; (2) the controls included in the description were suitably designed to achieve the control objectives specified in the description, if those controls were complied with satisfactorily and user organizations applied the internal controls contemplated in the design of the DOW's controls; and (3) such controls had been placed in operation as of December 31, 2008. DOW uses the lockbox services of National City Bank for receipt and deposit of some utility payments. In addition, banks and other entities perform agency functions for the receipt of utility payments. The accompanying description includes only those controls and related control objectives of DOW, and does not include controls and related control objectives of National City Bank or other agents. Our examination did not extend to controls of National City Bank or the other agents. The control objectives were specified by the management of the DOW. Our examination was performed in accordance with standards established by the American Institute of Certified Public Accountants and included those procedures we considered necessary in the circumstances to obtain a reasonable basis for rendering our opinion.

In our opinion, the accompanying description of the aforementioned application presents fairly, in all material respects, the relevant aspects of the DOW's controls that had been placed in operation as of December 31, 2008. Also, in our opinion, the controls, as described, are suitably designed to provide reasonable assurance the specified control objectives would be achieved if the described controls were complied with satisfactorily and user organizations applied the controls contemplated in the design of the DOW's controls.

The DOW states in its description of controls that it has controls in place to investigate and follow up on accounts for meters which did not receive an actual reading. The description also states that controls are in place to follow up on accounts that have not been billed in 105 days. Our tests of operating effectiveness noted that accounts with unread meters were not being resolved on a timely basis and customers were sent estimated bills. This resulted in the nonachievement of the control objective "Charges for services transactions, including sales, cash receipts and adjustments to accounts receivable are accurately recorded as to amounts, quantities/consumption, dates and customers, and are recorded in the proper period."

In addition to the procedures we considered necessary to render our opinions as expressed in the previous paragraph, we applied tests to specific controls, listed in Section III, to obtain evidence about their effectiveness in meeting the control objectives, described in Section III, during the period from January 1, 2008 to December 31, 2008. The specific controls and the nature, timing, extent, and results of the tests are listed in Section III. This information has been provided to user organizations of the DOW and to their auditors to be taken into consideration along with information about the internal control at user organizations, when making assessments of control risk for user organizations. In our opinion, except for the matter described in the preceding paragraph, the controls that were tested, as described in Section III, were operating with sufficient effectiveness to provide reasonable, but not absolute, assurance the control objectives specified in Section III were achieved during the period from January 1, 2008 to December 31, 2008.

The relative effectiveness and significance of specific controls at the DOW and their effect on assessments of control risk at user organizations are dependent on their interaction with the controls and other factors present at individual user organizations. We have performed no procedures to evaluate the effectiveness of controls at individual user organizations.

The information in Section IV is presented by the DOW to provide additional information and is not part of the DOW's description of controls that may be relevant to a user organization's internal control. Such information has not been subjected to the procedures applied in the examination of the description of the controls applicable to the processing of transactions for user organizations and, accordingly, we express no opinion on it.

The description of controls at the DOW is as of December 31, 2008, and information about tests of the operating effectiveness of specified controls covers the period from January 1, 2008 to December 31, 2008. Any projection of such information to the future is subject to the risk that, because of change, the description may no longer portray the controls in existence. The potential effectiveness of specific controls at the DOW is subject to inherent limitations and, accordingly, errors or fraud may occur and not be detected. Furthermore, the projection of any conclusions, based on our findings, to future periods is subject to the risk that (1) changes made to the system or controls, (2) changes in processing requirements, or (3) changes required because of the passage of time may alter the validity of such conclusions.

This report is intended solely for use by the management of the DOW, its user organizations, and the independent auditors of its user organizations.

A handwritten signature in black ink that reads "Mary Taylor". The signature is written in a cursive, flowing style.

Mary Taylor, CPA
Auditor of State

July 9, 2009

SECTION II - ORGANIZATION'S DESCRIPTION OF CONTROLS

CONTROL OBJECTIVES AND RELATED CONTROLS

The Division of Water's (DOW) control objectives and related controls are included in section III of this report, "Information Provided by the Service Auditor," to eliminate the redundancy that would result from listing them here in section II and repeating them in section III. Although the control objectives and related controls are included in section III, they are, nevertheless, an integral part of the DOW's description of controls.

OVERVIEW OF OPERATIONS

The DOW services not only the City of Cleveland but also 71 surrounding suburbs, five master meter suburbs, and eight emergency standby communities. They provide water to 412,583 city and suburban accounts in the Cleveland metropolitan area. They also sell water for resale to master meter communities that operate their own distribution systems, and they provide billing and payment services for the Northeast Ohio Regional Sewer District (NEORS) and other sewer communities.

During 2008, the DOW provided services to 125,657 accounts located within Cleveland and 286,926 accounts located in direct service communities. Water provided to each master meter community is metered at each community's boundary. Consumers within the City of Cleveland accounted for about 23 percent of the DOW's metered sales revenue, while the direct service and master meter communities accounted for 69 percent and 8 percent of metered sales revenue, respectively.

The DOW along with Utility Fiscal Control provides a complete array of processing services including billing, processing payments, mailing delinquency notices, terminating water service on delinquent accounts, and distributing the money collected to the municipalities. The DOW processes approximately 12,000 bills daily, which include bills for water, water and sewer, final notices, and delinquent notices.

RELEVANT ASPECTS OF THE CONTROL ENVIRONMENT, RISK ASSESSMENT AND MONITORING

Control Environment

The Department of Public Utilities, headed by its director, comprises four divisions: Water, Water Pollution Control, Cleveland Public Power, and Utilities Fiscal Control, each of which is managed by a commissioner. The Division of Utilities Fiscal Control provides accounting and other financial services to the other three divisions. The following functional areas are headed by assistant commissioners who report directly to the commissioner of the DOW:

- *Administration* - is the support staff of the division and is responsible for non-technical functions excluding sales and billings.
- *Plant Operations* - is responsible for the pumping and purification of water as well as the laboratories that analyze raw and potable water.
- *Engineering* - is responsible for the design and construction of capital improvement projects undertaken by the division.

- *Distribution System Maintenance* - is responsible for servicing and maintaining the division's distribution system, which includes water mains, meters, valves, fire hydrants and connections.
- *Customer Account Services* - is responsible for the division's interactions with its customers, including meter reading, billing, payments and customer service inquiries.
- *Information Technology (IT)* - is responsible for monitoring systems processing and running production jobs and reports requested by the users. This department is also responsible for managing the Local Area Networks (LAN) and the telecommunication needs of the DOW.
- *Budget* - is responsible for the operating budget as well as contract procurement and requisition processing for operational needs.

This functional arrangement, management controls, and the established information processing policies, standards, guidelines, and procedures help to ensure adequate segregation of duties within the DOW.

Risk Assessment

The Department of Public Utilities has a formal risk management function to address the environmental and safety risks associated with running a public utility. In addition, the DOW has established an IT Governance Committee to evaluate IT opportunities and oversee their acquisition and implementation. The committee is comprised of DOW executive staff from all departments and senior IT management. As part of the formation of this committee, a formal governance model is being developed and implemented. The committee meets regularly throughout the year to discuss issues related to the information systems of the DOW.

In addition, the DOW has identified operational risks resulting from the nature of services provided to the member communities. These risks are primarily associated with computerized information systems. These risks are monitored as described under "Monitoring" below and in additional detail throughout the "General EDP Control" section.

Monitoring

The Accounting Department, which is a functional area reporting to the commissioner for the Division of Utilities Fiscal Control, is responsible for the daily accounting function of the DOW. Some of their duties include reconciling the accounts receivable totals to the City of Cleveland's PeopleSoft accounting system, tracking refunds made to customers, scanning purchases for unusual entries, and producing monthly, quarterly and year-end financial statements. DOW personnel monitor the quality of service to user organizations and system performance as a routine part of their job duties. To assist them in this monitoring, DOW uses a variety of key indicator reports to monitor the processes involved in billing and payment.

Computer access is monitored on an ongoing basis by IT staff. Exceptions to normal processing related to hardware, software or procedural problems are resolved daily.

INFORMATION AND COMMUNICATION

The aspects of the information and communication component of internal control as they affect the services provided to user organizations are discussed within the "General EDP" and "Application" control sections.

GENERAL EDP CONTROLS

Overall Operation of the IT Function

The DOW IT staff consists of 63 individuals including the assistant commissioner of IT and the IT manager. The breakdown of individuals by category is as follows:

Infrastructure:

- Technical director (1)
- Network operations group leader (1)
- Network operations group staff (4)
- Operations support group leader (1)
- Operations support group staff (6)
- Process automation group leader (1)
- Process automation group staff (4)

Administrative and Project Management:

- IT administration unit manager (1)
- Asst manager IT admin/service delivery group leader(1)
- Service delivery user support (6)
- Service delivery asset management (1)
- Service delivery procurement (2)
- Project management group leader (1)
- Project management group staff (5)

Applications:

- Customer systems group leader (1)
- Customer systems group staff (7)
- Supervisor of applications development (1)
- Application administration group leader (1)
- Application administration group staff (5)

Geographic Information System (GIS)

- GIS unit manager (1)
- GIS systems group leader (1)
- GIS systems group staff (2)
- GIS applications group leader (1)
- GIS applications group staff (6)

The DOW follows the Personnel Policies and Procedures Manual provided by the City of Cleveland. An organization chart, a chart of “operational roles and responsibility”, and job descriptions have been developed for the IT Department of the DOW. The Department of Public Utilities has contracted with Cleveland State University’s Division of Continuing Education to provide continuing education to DOW employees. The courses are designed to keep DOW employees abreast of the latest technology so they can perform in the most efficient manner.

All hiring for the DOW must be approved by city hall administration prior to the posting of a job opening. All positions are posted internally first. If sufficient responses are not received, the positions are then posted on the city's web site and/or in a local newspaper.

The DOW contracted with a consulting firm to design and implement a five-year information technology (IT) plan covering the period 2002-2006. A comprehensive long range IT plan was not in place for either 2007 or 2008. In 2007, the DOW began to develop a new IT Master Plan covering the period 2009-2011. A list of proposed projects will be part of the IT Master Plan and the new IT Master Plan will link to the IT Governance Committee initiatives. Potential initiatives that are part of the IT Master Plan will be continually re-evaluated by the IT Governance Committee utilizing business case evaluations.

The DOW also has a Strategic Business Plan that concerns the DOW as a whole and was completed in 2007 for the period 2008-2012. A Strategic Business Plan for 2008-2012 is available in draft form. The business plan manager and the Strategic Business Plan (SBP) department

have responsibility for implementation of the plan. The Strategic Business Plan Committee meets periodically and a list of action items is prepared and distributed to the committee members.

Development and Implementation of New Applications and Systems

The DOW's Billing and Payment application was developed in-house. The current version of the application went into production in June 2000. The DOW IT personnel maintain and support the Billing and Payment application as well as investigate enhancements to the application using new technologies. This application is in the process of being replaced by a vendor supported application.

In 2009, the DOW will be implementing the Oracle (formerly SPL World Group) Customer Care and Billing Solution (CC&B) application. The professional services firm Bearing Point is acting as the integrator for the project. The integrator is responsible for delivering a fully functional Customer Information System/Customer Relationship Management (CIS/CRM) solution. The entire CIS/CRM program is being managed by the professional services firm TMG Consulting, Inc.

In 2008, DOW issued an RFP for hosting and managed services to support the DOW implementation of the Oracle CC&B package. IBM was selected as the professional services firm to provide hosting and managed services. The terms "hosting services" and "managed services" are defined in the RFP as follows:

- Hosting Services – computing and networking infrastructure (facility, disaster recovery, hardware, software, security and networking) and the service to support and maintain the infrastructure.
- Managed Services – services including application data base support and maintenance; manage code libraries and code migrations; execute and monitor the batch processes; help desk services; application development and report writing development.

In addition, the professional services firm Sourcelink was selected to provide bill printing functions that include the printing, insertion, and mailing of utility bills and notices for both the current and new systems.

Application attribute reviews called "fit/gap sessions" are being conducted by the CIS/CRM core team to assure the new CIS/CRM application meets DOW requirements and specifications. The core team is comprised of members of the DOW IT department and user staff from the DOW and NEORS. The objective of these sessions is to identify gaps (differences) between the current process/application and the new application. In doing this, decisions will be made that will determine the future-desired business functionality and will therefore influence how individual business unit processes will change to accommodate these changes.

After the completion of the fit/gap sessions, a series of design sessions are conducted by the CIS/CRM core team and DOW subject matter experts. The objectives of the design sessions are to finalize the scope and configuration for the CIS/CRM application.

Work plans for projects are prepared and updated on a regular basis. The work plan breaks the project down into design segments based on the complexity of the project. These segments include intermittent status meetings where design issues are addressed. Management sign-offs are also obtained at these meetings for milestones reached in the work plan. A conversion plan and a testing plan have been completed to guide the DOW through the process of converting data and testing the new application.

The project manager monitors the integrator's progress and makes weekly reports to the DOW.

Vendors of new software are required to provide user training and documentation. Training was provided to the core team on the new CC&B application by the vendor.

Changes to Existing Applications or Hardware Systems

The system, which supports the DOW's billing system, is logically partitioned into two environments, production and test. Each partition has its own IP address, Ethernet connection to the network, operating system, security, and set of libraries and data files. The two environments are exclusive of each other. Logins and passwords, which are valid in the "test environment", are not valid in the "production environment". All source and object code for the current Water Billing System programs can be found in the production library.

Requests for enhancements or modifications to existing programs are submitted in writing using the problem description and resolution form. The request is reviewed and approved by either the supervisor of applications development or the customer systems group leader. Once approved, the task is assigned to the individual who will perform the programming.

A copy of the existing program is moved from the production environment to the test environment by an FTP process, which is restricted to a secure login. The movement of this production program places it into a library accessible by the programmer in the test partition.

The individual responsible for the programming adds information to the comments portion of the program, which includes the date, the programmer initials, and the reason for the change. Any lines of code added or changed are labeled with the programmer initials and date. In addition, the system timestamps each change made. Completed changes are unit tested by the assigned programmer. Once test results are available, they are presented to the requestor for approval.

After program changes are tested and approved the completed program is moved by the programmer from their personal library into a common library. The programmer saves the completed source code in the test library. This action will time stamp the program, and add the login id of the programmer/author to the system logs. The assigned programmer will print a screen image of this timestamp. The printed image is attached to the request/assignment form.

Once the program is ready to be moved into production, the programmer will complete the program change log. The completed program change log is submitted to the customer systems group leader to review and approve the program changes and move them to production. Only the customer systems group leader is authorized to move programs into the production environment.

The customer systems group leader will use the secure FTP process to copy the program with the changes from the "test environment" to the "production environment". This action will time stamp the program move, and add the login id of the customer systems group leader to the system logs. The customer systems group leader will print a screen image of this timestamp. The printed image is attached to the completed program change log. The completed program change log is signed by the customer system group leader under the "moved to production" field.

The completed program change logs along with the supporting screen prints, are filed for reference, and are available for review to identify the date, time, and author of any changes made to a program that was subsequently moved into the production environment.

The programmers have access to an account that can update the production directory. However, the customer systems group leader reviews the production directory on a monthly basis as a compensating control to help ensure only authorized changes were made to production programs. At the end of each month, the customer systems group leader reconciles the program(s) changed in the production directory with the programming project log.

User manuals are updated, if needed, by programming staff. The user manuals are updated only if changes to the application affect the functionality of the application. Typically, changes to the application are fixes or minor enhancements requested by the users.

If training is necessary, it is performed by the programmer who made the change. Training is normally provided at the user's workstation where the programmer will walk the user through the changes that were made.

The DOW uses a vendor provided meter reading system, Datamatics. Software and hardware support agreements for the meter reading system are maintained by the DOW. Change requests for the meter reading system must first be approved by the assistant administrator of meter reading. All changes to the Datamatics application are performed by the vendor. The vendor submits a proposal to the DOW for the estimated cost to the assistant commissioner of customer account services. The assistant commissioner verifies all requests. Requests for vendor changes are infrequent

IBM provides updates to user manuals for changes made to the operating system.

IT Security

IBM AS/400: (Billing)

System level access is administered by the customer systems group leader. Authorization from department supervisors is required before an account is established on the IBM AS/400. The IT Department adopted a computer security policy and users must sign a form acknowledging their acceptance of the computer security policy. This form is also signed by their supervisor to authorize access to the system.

Security related events are logged and monitored by the senior programmer analyst. An automated job scheduler is utilized to generate daily reports of the security related events.

When employees leave the Division of Water, the customer systems group leader receives notification from the Personnel Department and he disables or deletes the accounts of users who are no longer employed by the DOW.

Primary logical access control to the IBM AS/400 is provided by security provisions of the OS/400 operating system. This includes access to data, programs, and system utilities. System level security requires a unique user id and password for sign-on. The OS/400 operating system permits the use of group profiles to grant the same level of access to multiple users; however, accountability is lost if individuals can sign-on as a group profile. Group profiles are not used to log onto the system at the DOW. In addition, special authorities can provide unlimited access to the OS/400 computer system. DOW assigns special authorities to individuals based on job functions, not at the group level. The following security options have been implemented to control user access to the AS/400:

Password Controls: Password minimum and maximum lengths have been established. Passwords automatically expire on a periodic basis.

Sign-on Controls: Terminals are automatically logged off after a period of inactivity. User IDs are disabled after a pre-determined number of failed sign-on attempts. All remote sign-on requests must go through the normal sign-on procedure, which requires validation of the user profile and password on the target AS/400. Group profiles are not utilized; therefore, users must use a unique ID and password for sign-on. Command line access has been restricted to authorized individuals.

Network Controls: The job action network attribute has been established to prevent network jobs from running automatically. Instead the input job stream is filed in the recipient's network file queue. Client request access and distributed data management access have been established so that requests are processed in accordance with the receiving system's own object authorizations.

Application level security is provided by IBM's CICS online transaction processing software, and is administered by the project director of Customer Account Services. The project director confirms application level security each November by requesting each department head to send her a list of employee names, the functions needed, and whether view or update capability is needed. A reminder is sent towards the end of the two week period. If a response is not received within two weeks, the employee's access is removed. Access is not re-instated without a completed form. The project director compares the access requested with the existing access and makes any necessary changes. On a monthly basis, the project director reviews a report that lists all access by employee number to ensure access is appropriate.

Billing application users have unique user IDs and passwords. CICS passwords have been established with a minimum length and periodic expiration to prevent unauthorized access. The CICS application level security restricts user access to specific functional menus/transactions based on the user's job responsibilities.

System files, utilities, authorization lists, data files, and application programs are restricted through the user's AS/400 profile. Access to sensitive files can only be obtained if the library list within the user profile has been attached to the files. Users do not have update or delete access to sensitive files. Users are restricted by their user profiles to an initial program that directs them to the CICS menu system. After completion of the initial program, the user defaults to the initial menu parameter.

The IBM AS/400 has been logically partitioned into development and production systems. Direct access to data files is restricted to the supervisor of applications development. Programmer access to the production system is limited to view only privileges. The data files can be updated through the DFU utility or specific system programs. Access to the DFU utilities is restricted to the supervisor of applications development.

A control function exists in which only one authorized user can access a data file at a given time to administer changes or perform data entry operations. This helps to ensure the most recent version of the data is being used.

Program files reside in a library in the production system. Update access to this library is restricted to the supervisor of applications development. The customer systems group leader and the data processing supervisor, from the customer systems group, also have update access to the production library through the security officer user profile which is the highest level account on the AS/400.

Emergency changes to the program code are made in an emergency library. Access to the emergency library is restricted to operators and programmers. The following day these changes are documented through normal change control procedures, and the changes are transferred to production. The emergency library is cleared out every day at noon. Changes made in the emergency library are reviewed by the data processing supervisor.

The AS/400 command to "power down the system" is restricted to the security officer user profile which is restricted to the customer systems group leader and the data processing supervisor.

During normal business hours, visitor access is restricted to the main entrance. The front desk entrance is monitored by security guard personnel. Other entrances to the building are secured by key card access. The IT area, where the computer room is located, is also controlled by key card access. Access to the computer room is restricted to municipal service laborers/custodial workers, electricians, security/access control officers, and IT staff. The Security/Access Control area administers the key card access system based on directives from the departmental supervisors.

The following items assist in controlling the computer room to protect it from adverse environmental conditions:

- Automatic climate control.
- FM 200 fire suppression system.
- Fire alarm.
- Fire extinguisher.

The computer equipment at the DOW is self-insured by the City of Cleveland.

Network access has been secured through the use of a fiber network and firewall. Remote access is configured through a network access control appliance and system level security that requires a unique user ID and password. The DOW utilizes a private network addressing scheme. The firewall, which passes only TCP/IP traffic and blocks all other traffic, allows a user to exchange the 10-dot address for a real IP address which is recognizable by the Internet thus allowing the user to access the Internet. The passwords for the firewall are enabled and controlled by the network staff. The network staff periodically port scan the network for weaknesses in the configuration of the firewall.

Documentation for the network is maintained by the Network Department. The documentation identifies all individuals with access to the Internet. Inbound traffic is limited with the use of conduits. The inbound traffic is restricted to buildings within the DOW network, such as pump stations.

Windows 2003: (Meter Reading)

Primary logical access is controlled through the application level security provided by the Meter Reading application.

Data from the Meter Reading application on the Windows 2003 server is exported and uploaded to the AS/400 nightly. The upload is controlled by the AS/400. The AS/400 initiates an FTP session with the Windows 2003 server during which the file is uploaded to the AS/400. The AS/400 terminates the session upon completion of the file transfer. Users of this system cannot access the AS/400 because the Windows 2003 server does not have emulation software loaded. Unique user IDs and passwords are required to gain access to the Meter Reading application.

The Windows 2003 server is located in the center of the Meter Reading Department. Several meter reading staff members work in the area, which minimizes the risk of unauthorized personnel attempting to gain access to the server.

Banctec System:

The Banctec System machine reads the account and balance information as the stubs and checks are scanned through the machine. It is located in an area secured by the key card system. Only data conversion operators run the machine and there are several employees working in the area who would be aware if someone other than a data conversion clerk attempted to operate this machine.

The AS/400 establishes an FTP session with the Banctec system and terminates the FTP session after the upload is complete. Users cannot initiate an AS/400 session from the Banctec machine.

IT Operations

An operations run book is maintained to document instructions for work performed by the computer operators. The job schedule is contained in the operations run book and includes the job name, job description, data preparation instructions, set up requirements, schedule information, description of the processing steps, and expected results. Daily production jobs are submitted by the auto scheduler (R-Tape) or by a job submission program developed to scan data files for activity and execute the necessary jobs based on the results of the activity scan. This scanning process helps to ensure data required for subsequent batch jobs is available. A system job log detailing job completion status is reviewed online during each shift.

Operators are trained and hold the necessary skills to perform their related job functions. Operators are assigned to oversee batch processing, initiate backup processing, and perform other operational duties. Each shift overlaps by one half hour in order for operators to discuss unresolved problems or operational errors. Each shift also prepares an incident report that records significant items that occur during a shift (shift turnover, daily cash processing, errors, deliveries, etc.) including the time of the occurrence and the actions taken. There are three shifts each day, Monday through Friday. Operators are supervised by the data processing supervisor.

The data processing supervisor reviews a system generated report which lists the reports printed during the previous day's third shift processing. The data processing supervisor compares this report to the batch job schedule to ensure all reports printed successfully. Reports are printed in the operations room. A header page is printed with each report indicating the recipient of the report. The Operations Department is responsible for report distribution.

Requests for modifications to the batch schedule require authorization by the appropriate supervisor. The customer systems group leader is notified of requests for schedule changes via memorandum or request form. Prior to schedule changes being implemented, programmers are required to update the operations run book for additions or modifications to batch programs.

The DOW has two Storage Area Networks (SAN). The main SAN is located in the DOW computer room and the backup SAN is located at a backup facility 11 miles from downtown. The main SAN is replicated to the backup SAN. The SANs are maintained and monitored by a third party vendor, EMC. The SAN replication monitoring services provided by EMC are error based. Monitoring is not performed nor is a report generated to confirm the backup SAN is in sync with the main SAN unless an error occurs. Should an error occur, EMC will contact the network analyst to notify DOW of the error and the fix performed by EMC. Environmental controls at the SAN include a backup power supply (UPS), FM 200 fire suppression system, and an air conditioning unit.

Production data resides on the SAN and is read by and written to by the AS/400. The DOW has two backup processes: (1) a redundant backup SAN and (2) backup tapes. Full backups of the AS/400 production data files are processed daily, after batch processing. In addition, a full backup of on-line or transaction data is performed daily, before batch processing. All daily tapes are written to a tape monthly and are retained for seven years. A full backup of data and AS/400 critical files including program files, configuration files, security files, operating systems, and folders is performed each week on Friday and stored off-site for one week. An AS/400 full system backup, including the SAN, is performed monthly. The monthly backup is stored off-site for one month and then returned to the computer room for the remainder of the three month retention period.

System logs are produced and distributed to information systems personnel on a daily basis. The logs indicate whether nightly backups completed successfully and lists any errors that occurred during the backup process. Information systems personnel are responsible for resolving these errors to help ensure backups are completed in a timely manner.

The R-Tape Listing/Inventory report is generated online to track the current location of the backup tapes. Information systems personnel review this report to help ensure the correct tapes are being rotated to the correct storage location.

The DOW is prepared to switch from the main SAN in the DOW computer room to the backup SAN at the off-site facility. The DOW maintains a hardware/software agreement with IBM which covers maintenance and replacement costs of equipment should a hardware failure occurs. The agreement details the machinery eligible for onsite repair/exchange services, 7 days a week, 24 hours a day.

Production or network problems are automatically logged on the AS/400 report called "QEZ Debug." This report is retained online for one week. Operators are required to manually document job status and significant ABENDS on an incident report. The documentation includes a description of the problem and the corrective action taken. Each shift reviews the previous incident report and documents unresolved problems before beginning processing.

Production problems are initially handled by the operator using the procedures within the operations run book. If this fails, the programmer on-call is contacted via a beeper for resolution of the problem. The data processing supervisor is notified if the programmer on-call cannot resolve the problem. Emergency changes to the control language or program code are administered in an emergency library. Access to the emergency library is restricted to operators and programmers. The following day these changes are documented through normal change control procedures. Programs in the emergency library are deleted on a daily basis.

The only changes made to the operating system are vendor upgrades and patches specified and provided by IBM. The data processing supervisor applies all patches and upgrades in coordination with IBM and follows the guidelines provided by the vendor. Testing of the upgrade or patch is completed in the test environment to confirm the operating system has been installed correctly. A full-system backup is performed before and after the upgrade is installed in the live environment. Documentation for the patches and upgrades is filed in case a system malfunction occurs. The DOW maintains a hardware/software agreement with IBM covering maintenance and upgrades to the operating system.

FINANCIAL APPLICATION CONTROLS

Billing and Payment System

Meter Reading and Billing

Individual meter readings are performed on a quarterly basis for each customer. Hand-held computers, called Road Runners, and laptop computers are used for meter reading. The Road Runners and laptops interface with a vendor purchased application, Datamatics, on a Windows 2003 file server. The Datamatics application interfaces with the in-house developed billing application that runs on the IBM AS/400.

There are three types of meter reads:

- Daily meter reads are performed for residential and commercial customers using the Road Runner devices.
- Inspection meter reads are performed by inspection meter readers for daily readings that do not pass tolerance tests for consumption. Meter data is entered into laptop computers.
- Collection meter reads are required for delinquent accounts. The data is entered into laptop computers by collection meter readers.

The Meter Reading Department prepares an annual master schedule of meter reads per route. The master schedule comprises 91-day read cycles for each route. Based on this master schedule, a three day route schedule is keyed into the system each day. The unit supervisor completes a job request form and submits it to the IT department to produce the meter "book." The following day, the unit supervisor reviews the transaction report from the IT Department to confirm the correct meter data was obtained. Meter route information from the billing application is downloaded from the AS/400 to the Datamatics system on the Windows 2003 Server.

Using the three day sequence schedule, the daily routes for each meter reader are downloaded from the Datamatics system into the individual Road Runners and laptops. The routes downloaded to the meter reading equipment cannot be altered by the meter readers. The meter readers can key in the reading information and make corrections if necessary, but they cannot add or delete accounts on the scheduled route. Each meter reader receives a daily meter route.

Daily Meter Reads

On a daily basis, meter readers key in the water usage for each meter into the Road Runner. A tolerance test occurs at the Road Runner level for a range of difference between the current and previous reads. Unless it is overridden by the meter reader, the entry will fail until it is within the acceptable range.

Road Runners are first reviewed by the meter readers to ensure all accounts were read. Field supervisors then check the Road Runners for blanks, the number of locks, and the number of pumps (manhole covers). Locks result from inaccessibility to the meter (i.e. an irate customer, a fenced in yard, a vicious dog). The meter reader supervisor also checks the Road Runners for blanks before the upload to Datamatics.

Skip codes are entered for each blank which results in the account being investigated and rescheduled for another meter reading. If an account is still blank after review by the above individuals, it will eventually show up on the Accounts Not Billed report. The account will subsequently be scheduled for another reading. At the end of each business day, data keyed into the Road Runners is uploaded to Datamatics.

After the upload, the Datamatics system generates the Routes Received from Road Runners report. This report is sorted by route number and lists the number of meters scheduled to be read, the number of meters actually read, and the number of meters skipped. This report is checked against the Batch Control & Error Transactions report generated from the billing application after data is uploaded to the AS/400.

IBM AS/400 - Tolerance Tests:

Tolerance tests are performed on the meter data after it is transferred to the AS/400. Tests are performed to check the reasonableness of the consumption amount. Tests are also performed to ensure that consumption occurred only on active accounts.

When an account fails the tolerance tests, a record is written to the Nightly Reports File. A meter ticket is produced from the Nightly Reports File. The meter tickets are reviewed the next day to determine whether the account should be resubmitted for billing or for another meter read. If a re-read is necessary, an investigation tolerance ticket is produced from the meter ticket information. Those accounts are tagged from the Nightly Reports File so they may be downloaded to Datamatics.

If the tolerance tests are passed, the meter reads are processed in the billing application.

IBM AS/400 - Validation Tests:

During the batch routine to update the billing application, two types of edit checks occur:

- Validity Checks - Checks for invalid data such as month out of the range of 01 through 12, day out of range of 01 through 31, non-numeric data in a numeric field, etc.
- Logic Checks - Checks for logic errors such as customer sequence not equal to transaction and master files, sub-meter consumption greater than main meter consumption, read date equal to or before the last read date, etc.

Validation failures are logged to the Nightly Reports File.

IBM AS/400 – Nightly Reports File:

The Nightly Reports File on the IBM AS/400 is used to record all data that will eventually be reported. Some of the more significant reports produced from the Nightly Reports File include:

Billing Department:

- *Water and Sewer Bills* – These are currently printed by an outside vendor (Sourcelink) from a billing extract file produced by DOW.
- *Daily Water-Sewer Billing Register (WSG07030)* - Lists all bills generated from the nightly processing. Information includes account number, service dates, bill amount, and arrears.
- *Master List of all Bills (WSG07104)* - Report is provided in two sort orders, once by sequence number, and once by account number.

Meter Reading Department:

- *Meter Tickets* - Used for manual review of exceptions. Meter tickets are disposed of on a daily basis after the account with the error has either been sent through for billing or sent out for another meter read.
- *Error Report (WSA02070)* - Sorted by batch number and account number and lists accounts which did not pass the validation tests.
- *Batch Control Report (WSA02020)* - Lists all transactions processed during the batch update from the previous evening. It includes all meter read transactions that were successfully uploaded to the billing application. The following information is included on this report: account numbers, meter read date, and amount of water consumption. Billing information is not included on this report.
- *Accounts not Billed within Cycle Code* - This report is only produced on Tuesdays and is a cumulative report of accounts that have not been billed. Accounts remain on this report until a read is taken. Three versions of this report are produced – Active Accounts Only (WSG07232), New Accounts Only (WSG07233), and Non-Active Accounts (WSG07234). This report is lengthy, and many of the accounts are not reviewed in a timely basis.

Inspection Meter Reads

Inspection meter reads are performed by inspection meter readers using laptop computers. Daily meter reads which do not pass the tolerance tests are dumped to a Nightly Reports File. The meters are tagged from the Nightly Reports File and are downloaded to the Datamatics application where they are then downloaded to the laptops. The Meter Reading Department reassigns about sixty of these meters to each inspection meter reader. The inspection meter readers will revisit the meters and will record the water usage information. The inspection meter reads are uploaded to the Datamatics application at the end of each business day. These accounts then follow the same process as the daily meter reads.

Inspection meter reads are also performed by customer request. Final inspection meter reads are performed whenever there is a change of ownership. Both of these readings are for informational purposes only and do not produce a bill.

Collection Meter Reads

Collection meter reads are required for delinquent accounts and are performed by collection meter readers using laptop computers. Meters to be read are scheduled through Datamatics.

The billing application on the AS/400 generates a 15-day notice to the customer indicating the meter will be turned off within 15 days due to failure to pay. After the 15 days, a three-day notice is generated and sent to the customer. When the meter reader goes to the site, they will turn the meter off if it is accessible. If not, they will leave another three-day notice indicating they will return in three days.

If a meter has been turned off for more than two weeks, it is scheduled for another meter reading in order to update the meter status (i.e., unoccupied residence).

Billing Procedures

Rate Authorization

Water Rates

Cleveland City Council approves water and fire line rates. Water rates for suburbs are prorated based on elevation. The three levels are low and 1st high, 2nd high, and 3rd high. The City of Cleveland has only one water rate. Beginning January 1, 2007, there is no minimum consumption charge for water.

Sewer Rates

The NEORS D rates are approved by the regional sewer board. Local rates are set and approved by local city councils. Charges for sewer are based on water consumption times the sewer rate. Customers serviced by NEORS D receive separate bills from the DOW for water and sewer. Customers serviced locally for sewer receive one bill containing both the water and sewer charges.

Fire Lines

Fire line rates are established by Cleveland City Council and are billed at a flat rate regardless of usage.

Customer Service Charge

Effective January 1, 2007, the DOW began assessing a \$7.00 quarterly customer service charge to all accounts to recover the costs of meter reading, billing, remittance and other customer service activities. Previously, the DOW attempted to recover these expenses by imposing a minimum consumption amount. This minimum consumption amount has been eliminated and replaced with the customer service charge.

Rate Confirmation

In 2008, Utilities Fiscal Control (UFC) implemented an annual confirmation procedure for all direct service municipal agencies for which billing procedures are performed. The objective of the rate confirmation is to verify the accuracy of rate data in the Division of Water's billing system. The confirmation occurs in the first quarter of each fiscal year.

The confirmation letters include all current rates being billed for each municipality and an exception list of accounts within the municipality that are currently not assessed a charge. In addition, each municipality is asked if the DOW should be billing for any rates other than those indicated on the confirmation. The municipality is requested to return the confirmation along with a copy of the ordinance authorizing the rates. UFC either hand delivers or sends the letter by certified mail to ensure each municipality receives the confirmation letters. If UFC does not receive a response within two weeks, a second letter is sent to the municipality.

Confirmation letters are returned to UFC and are filed in the controller's office. For incorrect rates, UFC prepares a control sheet (Water/Sewer Rate Change Procedure and Control Sheet). The control sheet along with a copy of the returned confirmation is forwarded to the DOW Billing Department. The billing department is responsible for updating the rate in the billing system as well as any other corrections indicated on the returned confirmation.

Rate Change Procedure

Rate ordinances are received and forwarded to the commissioner of Utilities Fiscal Control. The Utilities Fiscal Control manager prepares the control sheet (Water/Sewer Rate Change Procedures and Control Sheet), signs, and dates an acknowledgement statement.

The following information is included on the control sheet:

- Entity requesting the change.
- Ordinance number.
- Date of ordinance.
- Date received by the Commissioner of Utilities Fiscal Control.
- Effective date of the rate increase.
- Old rate.
- New rate.

The control sheet is attached to the rate ordinance. The control sheet and ordinance are forwarded to the billing department to update the rate in the system. The administrative manager and the assistant administrator of the billing department are the only individuals authorized to enter new billing rates for water and sewer and fire lines into the system. These individuals perform testing to ensure the rates were entered correctly and billed amounts are accurately calculated using the new rates. The administrative manager or the assistant administrator of the billing department then signs and dates an acknowledgement statement on the control sheet and forwards the control sheet and ordinance to the assistant commissioner of customer account services for final verification. The assistant commissioner signs and dates an acknowledgement statement on the control sheet and forwards the completed control sheet and ordinance back to Utilities Fiscal Control to be filed in the entity's file.

Billing Process

A Daily Sales Register (WSG07030) and a Master List of all Bills (WSG07104) are also produced with each billing run. A Billing Department clerk reviews the Daily Sales Register for appropriateness. Meter changes are reviewed carefully to determine whether an adjustment to the customer's bill is required. This normally occurs when the prior reading was an estimate because the external meter did not advance. When the new meter is installed, the reading is taken from the internal meter in the basement, and the bill is adjusted accordingly. The report is also reviewed for the appropriateness of billed amounts, correct dates, and unusually high homestead amounts. The Daily Sales Register is disposed of daily.

Adjustments to water and sewer bills are performed either by the Accounts Receivable Department or the Billing Department depending upon the nature of the adjustment. All non-monetary adjustments, such as adjustments to water consumption, are made in the Billing Department and an adjusted bill is mailed the next day. Monetary adjustments are initiated in the Billing Department and are sent to the Accounts Receivable Department for entry. A monetary adjustment might occur if, for instance, the account is located in Olmstead Township, but was billed as Olmstead Falls.

Master Meter and Emergency Stand-by Accounts

Master meter accounts are for communities that buy water from the City of Cleveland, but have their own distribution systems. Master meter communities include: Bedford, Chagrin Falls, Cleveland Heights, Lakewood, and Geauga County. Accounts also exist for emergency stand-by suburbs that purchase water from the city only in emergency situations. Those communities include: Berea, Lake County, Lorain County, North Ridgeville, Medina County, Summit County, Hudson Village, and Portage County.

Master meters are read every 15 days to ensure they are working correctly. Readings are recorded in books maintained by the meter reader. Master meter suburbs are billed monthly. Readings from the books are entered into a spreadsheet by the assistant administrator of the Billing Department. Bills are manually generated. Master meter communities bill their respective consumers. Emergency suburbs are billed for water only when used.

New Account Set-up

The Permits and Sales Department is responsible for issuing all permits and collecting fees for services provided by the Division of Water. An account is established within 24 hours of the sale of a meter. The customer service representative in Permits and Sales enters the permit information into the system. Accounts are not billed until they have been sequenced by the Meter Reading Department. A five-part form is used to record the permit information. The five parts are distributed as follows:

- Part 1 - Filed in the permit books maintained in the Permit and Sales Department.
- Part 2 - Retained by the customer service representative in Permits and Sales who entered the information into the system.
- Part 3 - Sent to General Accounting.
- Parts 4 and 5 - Sent to the Distribution Yard for scheduling meter installations.

The Report of New Accounts List (WSG08090) is delivered on a daily basis to the Permits and Sales Department. The permits (part 2) are compared to the Reports of New Accounts List to verify the accuracy of the information. The report is filed in the Permits and Sales Department. The report is also delivered to the Meter Reading Department on a daily basis for the purpose of sequencing the accounts. These accounts are not read until the account becomes active. It is possible for a developer to purchase permits for a development, but until the house is built and the meter is installed, the account is inactive. Meter readers are responsible for checking houses on their routes that may be new to ensure the account has been activated.

Security Administration - Application Level

CICS Transaction Level Security (Billing Application System)

Transaction level security restricts access to specific functions in the billing application. The assistant commissioner for Customer Account Services is responsible for establishing security at this level, and the project director in the Customer Accounts Services is responsible for maintaining the security.

A Security File Print report (WSU04020) is received monthly and is compared to a payroll report by the project director to confirm each account is valid. This report lists the employee number and functions accessible by the employee.

Datamatics Security (Meter Reading Application System)

Application level security for the Datamatics application has been established via groups. The groups established include meter readers, collections, and inspections. Each group has been assigned privileges based upon their job function.

The unit supervisor and the assistant administrator, both in meter reading, are responsible for maintaining security at the application level.

Payments

DOW customers can make utility payments through a number of different channels. Payments can be made in cash or by credit card at the utility building on Lakeside Avenue; however, less than 10 percent of total payments are made by this method. Customers can mail their payments to the DOW or pay at banks and other payment locations such as drugstores and check cashing stores. In addition, customers can arrange with DOW for

automatic debit of their bank accounts or they may use their computer or phone to authorize payment from their bank directly to the DOW. The DOW has also contracted with National City Bank for lock box services for its larger clients and master meter accounts. DOW uses UFC to handle the payment and accounting functions.

UFC Cashiers Department

Cashiers receive water and sewer payments from walk in customers at the 1201 Lakeside Building. The cashiers are the only individuals throughout the payment process who are authorized to receive cash. Cashiers are responsible for balancing their daily receipt totals individually. At the end of the business day, each cashier prepares a batch control sheet indicating the amount of checks and cash payments received during the day. The principal cashier reviews the batch control sheet for accuracy. The principal cashier double checks the total amount of cash and checks to be deposited. All of the cash and checks are placed in a locked bag and are taken by a security guard to the Department of Treasury in City Hall. At the Department of Treasury, the cash and checks are recounted, the deposit slip is prepared and the deposit is sent to the bank. The stubs are sent to the Cash Receipts Department for processing. The UFC uses a 9500 Banctec Remittance Processing System to process payments. This system reads the account and balance information as the stubs are scanned through the machine. The batches processed by the Banctec system are compared to the cashiers' control sheets.

Security cameras have been placed throughout the cashier area. The cameras capture all activity on tape for later review if necessary. In addition, the assistant administrator is able to view the activity in the cashier area cameras through a PC.

UFC Cash Receipts Department

Mail Receipts - The Cash Receipts Department processes water and sewer payments received by mail. Mail is first sorted into two categories, agency and postal delivery. Postal delivery mail is further sorted by envelope type. The agency mail is sorted into three categories: banks, payment locations, and pay-by-phone (Huntington Bank).

Mail is opened using an electronic mail opener. All mail classifications above are kept separate during this process. A Cash Receipts Department staff member extracts the contents of each envelope, checking for payment and stubs. Another staff member examines the receipts and compares the stub with the payment. This individual sorts the payments into five payment groups:

- Full payments
- Partial payments
- Multi payments
- Over \$250 payments
- Unscannable stub payments

Full payments are processed by the 9500 Banctec Remittance Processing System. Stubs and checks are scanned through the machine. The machine stops if a stub of \$250 or more is scanned and asks the operator to "accept" or "skip" the payment. Most payments of \$250 or more are not automatically run through the Banctec, but are hand keyed. The only large payments that are run through the Banctec Remittance Processing System are those that are received from agencies.

Multi payments and partial payments are also hand keyed. Whenever a payment does not equal the account balance, the payment must be keyed in twice. Once for the amount of the payment and then reverse keyed for the same amount to prevent inaccurate data entry. For example, if the payment amount is \$25.00, the first entry would be 2500 and the second (reverse) entry would be 0052.

The Cash Receipts Department prepares a transaction input sheet for unscannable stub payments. These sheets include the number of stubs and the total dollar amount of all stubs. The Cash Receipts Department data conversion operators then manually key in the payments.

Agency payments - Agency payments consist of payments from banks and payment locations that act as agents for the DOW and accept utility payments from customers. These agents, in turn, remit the payments to the UFC by issuing their own checks for the total daily receipts. Customer payment stubs are also sent to the UFC to support the total amounts. The stubs are run through the Banctec system scanning machine. Batch totals calculated by the Banctec system are compared against the checks received from the agents. Discrepancies are investigated and reviewed immediately.

All checks received by the Cash Receipts Department are sealed in a deposit bag. A security guard picks up the deposit bags and delivers them to the Department of Treasury in City Hall where a deposit slip is prepared and the Department of Treasury takes the deposit to the bank.

The Cash Receipts Department receives daily account statements from the Department of Treasury for EZ Pay, lockbox, and direct deposit transactions.

EZ Pay Method - Customers can make arrangements to pay water and sewer bills by allowing UFC to automatically deduct the quarterly payments from their bank accounts. On a weekly basis, UFC generates a listing of EZ pay customers with payments due for the following week. This register is downloaded to an electronic file and is sent to National City Bank, usually on Fridays (for the following week's payments). Based on this register, National City Bank will debit the accounts of the listed customers, and deposit the stated payments to DOW's account, for the days listed on the register. National City Bank notifies the Department of Treasury of the daily transactions made against the city's accounts. The Department of Treasury then sends a daily account statement to the Cash Receipts Department, listing all the bank transactions that occurred that day. The Cash Receipts Department compares this account statement against the weekly register, to ensure that all payments due via the EZ Pay method were deposited to DOW's account on the specified days.

The UFC sends payment stubs to EZ Pay consumers to inform them of the total amount due and the date when the payment will be deducted from their accounts. Consumers generally receive payment stubs about 10-15 days before the due date, to allow them to dispute the payment due amount, or to ensure that sufficient funds will be in their bank accounts by the withdrawal date. In the event the consumers do not have sufficient funds in their bank accounts, National City Bank will deposit the amount to the DOW and then issue a separate debit/deposit correction which will adjust the DOW's account accordingly.

Lockbox and Direct Deposit Methods - The UFC uses the lock box services of National City Bank for payment of large commercial accounts. In the direct deposit method, customers use their computer or telephone to pay their utility bill. For payments received via lockbox and direct deposit, UFC receives a daily report from the banks showing the control totals of the daily receipts and deposits made to DOW's bank account. UFC also receives the payment stubs for lock box payments, which are run through the Banctec system. The batch totals calculated by the Banctec system are balanced to the bank deposit totals. Smartel/Huntington Bank (Pay by Phone) does not send stubs, but sends a fax with all of the accounts and a copy of the deposit slip.

Balancing - The Cash Receipts Department reconciles all of the cashiers tapes, mail, agency, direct deposit and lockbox totals to the total deposit each day. The reconciliation detail is summarized on a daily "control sheet."

UFC Accounting Department

Warrant Processing - The Cash Receipts Department sends calculator tapes (for the total mail and agencies), direct deposit reports (for the lockbox and direct deposits), and cashier balancing reports (for cashier totals) to the Accounting Department. The Accounting Department prepares a warrant based on this information from the Cash Receipts Department. The warrant is a receiving document instructing the city to enter the amount of cash and checks received into the general ledger system. The warrant is picked up by the security guard when he/she picks up the deposit bags from the Cashiers and Cash Receipts Departments.

City of Cleveland Department of Treasury

Deposits - The Department of Treasury at City Hall receives the deposit bags with the cash and checks from the Cashiers Department and the deposit bags with checks only from the Cash Receipts Department. The Department of Treasury also receives the warrants and tally sheets. Tally sheets are calculator tapes of the cash and checks by individual cashier or batch. Cash is recounted and agreed to the amount recorded on the tally sheet for each cashier. The total cash is added to the total amount of checks and this amount is agreed to the warrant prepared by the Accounting Department. The deposit is taken to the bank by a member of the City Department of Treasury staff. Deposits are made on the date received.

UFC Accounts Receivable Department

Accounts Receivable - The assistant administrator of accounts receivable receives the daily control sheet prepared by the Cash Receipts Department and compares it to an online billing system report of receipts (WSD33). When the assistant administrator of accounts receivable is satisfied the information on the WSD33 report is correct, a 'go' command is issued to apply the payments to the customer accounts. A final WSD33, which includes totals for each batch and the grand total uploaded to the AS/400, is printed and compared to the control sheet received from the Cash Receipts Department.

The Accounts Receivable Department balances daily. The beginning accounts receivable balance less the total amount processed is reconciled to the new accounts receivable balance. Reports used in this process include report 2020 (individual accounts processed in the Billing System), report 2070 (transactions that did not pass validation checks) and report 7070 (shows the actual application of payment against the customer accounts). The same process is performed monthly using monthly reports of the same information.

Distribution

The UFC remits sewer payments to North East Ohio Regional Sewer District (NEORS) and other communities on a monthly basis. The Accounts Receivable Department prepares the Assessments and Local Charge Remittance Schedule on a monthly basis. The schedule is prepared on a spreadsheet, using various reports from the Billing System. The schedule details, per city, the number of accounts billed, total cash receipts, total bad checks, total refunds and transfers, total carryovers, total invoices, and the net remittance to be made for the month. The accounting supervisor of accounts receivable and the finance controller review the schedule for completeness and accuracy.

After the schedule is reviewed and approved by the accounting supervisor of accounts receivable, it is forwarded to the Accounting Department for preparation of the remittance voucher. The voucher is approved by the commissioner of fiscal control and is sent to the Department of Treasury, where the disbursement of funds to NEORS and municipalities will be made.

The total monthly remittance per city is net of billing fees charged by the DOW. The total monthly remittance to the NEORS is gross; the billing fees are invoiced separately.

A few days before sending the actual remittance, the UFC sends remittance letters to NEORS and municipalities to notify them of the monthly remittance amount and details of the monthly receipts.

USER CONTROL CONSIDERATIONS

The DOW Billing and Payment system was designed with the assumption that certain controls would be implemented by user organizations. This section describes additional controls that should be in operation at the user organizations to complement the controls at the DOW. User auditors should consider whether the following controls have been placed in operation at user organizations:

- User organizations should confirm the sewer payments per the statement sent by the DOW are equal to the amount distributed to their organization.
- User organizations should respond to rate confirmation requests sent to them by the DOW.

The user organization control consideration presented above does not represent a comprehensive set of all the controls that should be employed by user organizations. Other controls may be required at user organizations.

SECTION III - INFORMATION PROVIDED BY THE SERVICE AUDITOR

This section is intended to provide interested parties with information sufficient to obtain an understanding of those aspects of the DOW's internal control that may be relevant to user organization's internal control, and reduce the assessed level of control risk below the maximum for certain financial statement assertions.

The broad objectives of data processing controls should be achieved by a combination of the procedures that are employed in various segments of the transaction processing system for example procedures performed at the DOW and procedures performed at user organizations which utilize the DOW.

For each of the control objectives listed below, only those controls which contribute to the attainment of the related control objective are described and were tested.

GENERAL EDP CONTROLS PLACED IN OPERATION AND TESTS OF OPERATING EFFECTIVENESS

Overall Operation of the IT Function

Overall Operation of the IT Function - Control Objective: IT Personnel - IT personnel should have the appropriate knowledge and experience for the complexity of the IT environment.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
An organizational chart has been developed to communicate the roles and segregation of duties for the IT Department.	Inspected the organizational chart to confirm the organizational structure of the IT Department is defined.	No exceptions noted.
Job descriptions and a chart of "operational roles and responsibilities" communicate individual employees' responsibilities within the IT Department.	Inspected the job descriptions and chart of "operational roles and responsibilities" and compared them to the organizational chart for IT staff to confirm staff members have defined responsibilities in the job descriptions.	No exceptions noted.
The DOW uses the personnel policies and procedures manual of the city to guide employees in the performance of their duties. The manual addresses issues related to leave time, benefits, computer usage, salaries, holidays, etc.	Inspected the City of Cleveland Department of Public Utilities employee policy guidelines.	No exceptions noted.
Continuing education is provided to DOW IT employees	Inspected documentation of continuing education received by employees for evidence training was provided to employees in technical subjects related to their area of expertise.	Twenty-seven of the 63 IT staff members received training during 2008.
An IT Governance Committee, comprised of individuals from the IT staff and all other departments within the Department of Public Utilities, meet throughout the year to monitor information systems.	Inspected the minutes from the IT Governance Committee to confirm information system projects are monitored.	Control operating as described.
The DOW developed an IT Plan to address concerns and issues with emerging technology. The plan covers the period 2002 through 2006. The IT Governance Committee worked on a new plan throughout 2008 and a new plan is expected to be completed in early 2009.	Inspected the prior IT Plan and the November 6, 2008 IT Governance update presentation on the new IT Plan to confirm technology concerns are being addressed by DOW in their planning process.	The IT Governance Committee is in the process of developing a new IT Master Plan for 2009.

Overall Operation of the IT Function - Control Objective: IT Personnel - IT personnel should have the appropriate knowledge and experience for the complexity of the IT environment.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The DOW developed a business strategic plan for 2008-2012.	Inspected the strategic plan for 2008-2012 to confirm DOW addresses long-range strategies in their planning process.	No exceptions noted

Development and Implementation of New Applications and Systems

Development and Implementation of New Applications and Systems - Control Objective: Project Management – Project management should ensure appropriate control over the design and implementation of new applications or systems.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The DOW has selected a “core team” to oversee the project management and integration process. This team is comprised of DOW and NEORS staff. The team meets weekly to discuss the following project points: <ul style="list-style-type: none"> • Project progress. • Vendor evaluations. • Vendor references. • Product demonstrations. • Site visit planning. • Scheduling updates. • Training plans. • Data cleansing. • Business case review. • Fit/Gap session review. • Design session review. 	<p>Inspected a list of “core team” members.</p> <p>Inspected the CIS/CRM implementation project minutes and confirmed meetings were held weekly and addressed the project points outlined in the control procedure.</p>	No exceptions noted.

Development and Implementation of New Applications and Systems - Control Objective: Project Management – Project management should ensure appropriate control over the design and implementation of new applications or systems.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>The project manager monitors the integrator’s task progress and submits monthly reports to the DOW. These reports are prepared using a standard format and contain the following sections:</p> <ul style="list-style-type: none"> • Overall status/accomplishments. • Project activities/details. • Issues for resolution. • Scope changes. • Work plan changes. 	<p>Inspected the integrator’s progress reports to the project manager and the DOW and confirmed they include the project progress using the standard format.</p>	<p>No exceptions noted.</p>

Development and Implementation of New Applications and Systems - Control Objective: Project Management – Project management should ensure appropriate control over the design and implementation of new applications or systems.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Application attribute reviews called “fit/gap sessions” are conducted to help ensure the new CIS/CRM application meets DOW requirements and specifications. The objective is to identify gaps (differences) between the current process/application and the new application.</p> <p>These sessions started in November 2007 and were scheduled through January 2008 to address the following areas:</p> <ul style="list-style-type: none"> • Permits. • Meter Management. • Meter Reading. • Field Orders. • Billing. • Payments. • Adjustments. • Rates. • Credit and Collections. • Financial Transactions. • Auditing. • Reports. • Workflow Management. • Case Management. • Interfaces. • System Security. 	<p>Inspected the fit/gap schedule and the meeting notes from the meetings held through January 2008.</p>	<p>No exceptions noted.</p>

Development and Implementation of New Applications and Systems - Control Objective: Design/Selection of Applications and Hardware Systems – Applications and Hardware Systems should be appropriately designed/selected to achieve business and application control requirements (including access security).		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The DOW follows the City of Cleveland Division of Information Technology and Services Software Acquisition Procedure Guidelines.	Inspected the City of Cleveland Division of Information Technology and Services Software Acquisition Procedure Guidelines to confirm it is consistent with the acquisition procedures at DOW.	No exceptions noted.
<p>A scoring methodology was used to select the hosting and managed services vendor. The scoring methodology included the following:</p> <ul style="list-style-type: none"> • Proposal evaluation. • Product demonstration. • Features and functions. • References. • Cost. • Profile. • Methodologies. • Experience. <p>A contract for hosting and managed services was approved by DOW.</p>	<p>Inspected the selection and approval checklist to confirm the scoring methodology was used to evaluate vendors for the hosting and managed services contract.</p> <p>Inspected the agreement between IBM and the DOW.</p>	No exceptions noted.
Design sessions were held throughout 2008 for the DOW to gain an understanding of how certain features in the new application will affect DOW procedures.	Inspected notes from three design sessions (bankruptcy, bill extract, Ellipse GIS), the work plan, and the CIS/CRM implementation project minutes for evidence the meetings were held as scheduled.	No exceptions noted.

Development and Implementation of New Applications and Systems - Control Objective: Testing of Applications/Systems – Testing should ensure that the new application or hardware system delivered achieve the necessary business and application control requirements.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>An “Integration Test Plan” document was prepared by Bearing Point to provide a test plan and methodology for the Integration Test activities for the CC&B project at DOW.</p> <p>The following is outlined in the test document:</p> <ul style="list-style-type: none"> • Team member roles and responsibilities. • Timelines and dependencies. • Baseline testing, integration testing, planning and execution process. • Methods to identify, classify, track, and correct defects arising from testing. 	<p>Inspected the test plan prepared by Bearing Point.</p>	<p>No exceptions noted.</p>
<p>The DOW is in the process of testing features of the new application and maintains testing documentation online.</p>	<p>For one of the features tested, observed the online test documentation and related notes.</p>	<p>Control operating as described.</p>

Development and Implementation of New Applications and Systems - Control Objective: Conversion of Data – Data from the old application should be converted completely and accurately, without unauthorized changes.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>A “Conversion Strategy, Plan and Acceptance Criteria” document was prepared by Bearing Point to provide information about the conversion strategy for converting data from DOW’s legacy system to the new Oracle CC&B system.</p> <p>The conversion document includes the following:</p> <ul style="list-style-type: none"> • Conversion overview. • Roles and responsibilities. • Conversion strategy, approach and methodology. • Acceptance criteria. • Conversion tools, workplan, and timeline. • Open and closed issues. • Post conversion guidelines. 	<p>Inspected the conversion plan prepared by Bearing Point.</p>	<p>No exceptions noted.</p>

Development and Implementation of New Applications and Systems - Control Objective: Training and Documentation – Users and IT staff receive appropriate training when their responsibilities are impacted by application development and implementation. In addition, technical documentation should be provided to support ongoing operations, problem resolution and future application maintenance.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Initial product training was provided to the DOW core team, power users and the project manager to help ensure the project team is competent in performing their assigned duties on the project. A Core Team Orientation Guide provides a high-level overview of the CC&B system. The CC&B Functionality for Implementers Student Guide acquaints the core team with key features of the system.	Inspected the integration services RFP for training requirements. Inspected a listing of participants from the core team who had received training. Independently confirmed attendance with the customer systems group leader and the assistant commissioner of customer account services. Inspected the training manuals provided to the training participants. Inspected the on-line user manual in the new Oracle CC&B application.	No exceptions noted.

Changes to Existing Applications or Hardware Systems

Changes to Existing Applications or Hardware Systems - Control Objective: Change Requests - Requests for application program changes or system upgrades should be appropriately considered and processed.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Problem Description and Resolution forms are completed for all requests that result in the modification of application source code. The Problem Description and Resolution forms document the programmer assigned, problem description, and problem resolution.	From a library listing of source programs, identified all programs modified during the audit period. Selected 30 of the 136 programs modified during the audit period. Inspected the Problem Description and Resolution Form for the 30 programs selected and inspected the documentation for appropriate approvals.	No relevant exceptions noted.
A Programming Project Log is maintained to track all Problem Description and Resolution forms.	Inspected the Programming Project Log and traced the 30 programs selected in the test above to the log.	No exceptions noted.

Changes to Existing Applications or Hardware Systems - Control Objective: Change Requests - Requests for application program changes or system upgrades should be appropriately considered and processed.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Datamatics, vendor for the meter reading system, provides 24-hour support on both the hardware and software. The DOW maintains a support agreement with Datamatics for these services.	Inspected the vendor service agreement to confirm all changes are handled by the vendor.	No exceptions noted.
Operating system upgrades are handled by the vendor, IBM. There were no upgrades during 2008.	Inspected the maintenance agreement with IBM to confirm it is current and to identify any upgrades to the operating system during the audit period.	No exceptions noted.

Changes to Existing Applications or Hardware Systems - Control Objective: Testing of Program Changes or Hardware System Upgrades - Program changes and hardware system upgrades should be tested to ensure that they achieve the business' requirements and do not negatively impact existing processing.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Programmers are required to sign off on the Program Change Log to indicate testing has been completed. User sign-offs are obtained on the Program Change Log to indicate their acceptance of the program change.	Inspected the 30 Program Change Logs for programmers' sign off and to confirm user sign-offs were obtained.	No exceptions noted.

Changes to Existing Applications or Hardware Systems - Control Objective: Transfer into the Live Environment – The transfer of programs into the live environment should be appropriately controlled.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The DOW has developed a policy on the movement of programs into production. The policy establishes a separation of duties between individuals performing program changes and the individual responsible for moving programs into production.	Inspected the policy for content.	No exceptions noted.

Changes to Existing Applications or Hardware Systems - Control Objective: Transfer into the Live Environment – The transfer of programs into the live environment should be appropriately controlled.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
User sign-offs are obtained on the Program Change Log indicating approval of the program change.	Inspected the 30 Program Change Logs to confirm user sign-offs were obtained.	No relevant exceptions noted.
The AS/400 is logically partitioned into development and production systems. The programmer makes the change to the program and the customer systems group leader moves the program into production.	Observed the supervisor of applications development attempt to log into the production system using his individual user profile to confirm his individual ID would not allow access to the production environment. For the 30 programs selected, inspected the owner of the program to confirm it was the customer systems group leader who actually moved the programs into production.	No exceptions noted.
The production environment is monitored by the customer systems group leader. On a monthly basis, he reconciles the changes made in the production environment to the programming project log to confirm only authorized programs were moved into production.	Inspected the reconciliations performed by the customer systems group leader for evidence of his review.	The reconciliation for the changes made during the month of October was not available; however, the customer systems group leader re-performed the reconciliation during fieldwork with no exceptions.
All object programs are supported by a corresponding source program.	Compared the object listing to the source listing.	No exceptions noted.

Changes to Existing Applications or Hardware Systems - Control Objective: Documentation and Training - Technical documentation should be updated to reflect program changes and system upgrades. When changes to applications and system upgrades affect user procedures, documentation should be updated accordingly. Likewise, users and IT staff should receive appropriate training when their responsibilities are impacted by application changes or system upgrades.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Documentation for program changes is maintained in the header of each source program.	Selected 30 programs of 136 programs changed and inspected the change description located in the header of each program.	No relevant exceptions noted.

Changes to Existing Applications or Hardware Systems - Control Objective: Documentation and Training - Technical documentation should be updated to reflect program changes and system upgrades. When changes to applications and system upgrades affect user procedures, documentation should be updated accordingly. Likewise, users and IT staff should receive appropriate training when their responsibilities are impacted by application changes or system upgrades.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>The user manuals for the billing application are updated if the functionality of the application is altered due to a program change.</p> <p>The vendor for the meter reading application system provides manual updates when changes occur.</p>	<p>Inspected the current manual for the billing application and inquired with the supervisor of applications development to confirm the manual was up-to-date.</p> <p>Through inquiry with the assistant commissioner of the department of public utilities confirmed that application manuals are available to DOW staff and that they are updated by the vendor when necessary.</p>	No exceptions noted.
Operating system manuals for the current OS are available to IT staff for reference.	Inspected the system operator's guide to confirm manuals are available.	No exceptions noted.

IT Security

IT Security - Control Objective: Security Management - Management should ensure the implementation of access control policies, which are based on the level of risk arising from access to programs and data.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
A security policy has been developed for the DOW. Acknowledgment forms are used to document user acceptance of the security policy and are signed by the department supervisor indicating authorization of a user account.	Using security analysis tools, selected 30 user accounts from a population of 198 enabled user accounts. The authorization forms for those users were inspected for proper authorization signatures.	No exceptions noted.

IT Security - Control Objective: Security Management - Management should ensure the implementation of access control policies, which are based on the level of risk arising from access to programs and data.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Application level access is confirmed on an annual basis by the project director of customer account services. Each department head is requested to confirm each user's access to the billing application and the functions. The department head signs a confirmation form and provides documentation noting the access (inquiry or update) the user has to each function.	<p>Inspected the confirmation request letters sent in November 2008.</p> <p>The annual confirmation process was reviewed with the assistant commissioner and the project director of customer account services through independent inquiry.</p> <p>Inspected confirmation forms for the following departments to corroborate user departments are confirming individual access: Assistant Commissioner, Collection Unit, Distribution and Maintenance, Customer Service, Billing, Fiscal Control, IT, Data Entry, Meter Reading, Engineering, Training, Quality Assurance, Permits and Sales, and NEORSD.</p>	No exceptions noted.
The Security File Print report provided by the IT Department is reviewed monthly by the project director of customer account services to help ensure user access at the application level remains appropriate.	Inspected the "Security File Print" reports to corroborate user access is reviewed monthly.	No exceptions noted.

IT Security - Control Objective: Security Management - Management should ensure the implementation of access control policies, which are based on the level of risk arising from access to programs and data.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The customer systems group leader receives notification of terminations from the Personnel Department throughout the year and uses that information to remove accounts for users who no longer work for the DOW.	<p>A listing of all inactive employees for the audit period was obtained from the personnel department. Inactive employees include those who are deceased, have retired or have been terminated. Compared this listing to the list of enabled user profiles from the AS/400 to confirm these profiles were either disabled or deleted.</p> <p>Haphazardly selected 10 user accounts from a population of 68 inactive employees and inspected the termination notifications from the customer systems group leader to confirm he is being notified of inactive employees by personnel.</p>	No relevant exceptions noted.
<p>Security audit reports are produced daily for the following security violations:</p> <ul style="list-style-type: none"> • Authority failures. • Object creation operations. • Object deletion operations. • Object management operations. • Restore operations. • Changes to security controls. • Spooled file controls. • System management activities. 	<p>Inspected the audit level and audit control system values to confirm the type of events logged in the audit journal.</p> <p>Inspected a copy of the automatic job scheduler and job details to confirm the frequency of report generation.</p> <p>Discussed the review of security audit reports with the customer systems group leader.</p>	Although security events are being recorded, reports detailing these events are not being reviewed.

IT Security - Control Objective: System Level Access Controls - Access to the computer system, programs, and data should be appropriately restricted.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The IBM AS/400 system value requires the entry of user IDs and passwords for proper sign-on and restricts access to system resources.	Inspected the security system value to confirm the parameter has been set to require user IDs and passwords and to restrict the default access right of users.	No exceptions noted.
Password system values for minimum length, maximum length, and expiration interval have been enabled to deter unauthorized access.	Inspected the password system values to confirm the values have been set according to the policies established by the DOW. In addition, inspected the Analyze Default Password Report to confirm the default passwords have been changed.	No relevant exceptions noted.
Security parameters have been enabled to restrict access to inactive workstations by timing out inactive workstations and ending inactive jobs once the terminal time is activated.	Inspected the system values that control terminal time outs to confirm the action to be taken after a period of inactivity.	Control operating as described.
<p>Security parameters have been enabled to control and monitor sign-on attempts by:</p> <ul style="list-style-type: none"> • Limiting the number of sign on attempts. • Disabling the terminal and user IDs once the limit of sign on attempts has been reached. • Requiring validation of the user profile and password for remote sign-on requests. • Limiting the number of virtual device sessions. • Restricting security officer sign-on from any terminal. • Restricting multiple sign-on sessions. • Displaying last sign-on information to the user. 	<p>Inspected system value parameters related to sign-on attempts for reasonableness.</p> <p>Using security analysis tools, generated and inspected the following reports:</p> <p>Failed Logins: List of users with an invalid sign-on attempt counter greater than five. The invalid sign-on attempt counter is incremented each time a user attempts to sign-on with an invalid password (even if the user profile is disabled) and is only reset after a user successfully signs on.</p> <p>Disabled User Profiles: List of user profiles with a disabled status and/or the password parameter of *NONE = *YES.</p> <p>Expired Passwords: List of user profiles with expired passwords.</p>	No relevant exceptions noted.

IT Security - Control Objective: System Level Access Controls - Access to the computer system, programs, and data should be appropriately restricted.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Group profiles are not used to log onto the system and special authorities are assigned based upon an individual user's job functions. Therefore, individual user profiles are used to restrict access rights.	Using security analysis tools generated and inspected the following reports: Special Authorities: List of user profiles with powerful special authorities. Inspected the assignment of special authorities for reasonableness. Group Profiles: List of group profiles that can be used to log onto the system. Inspected the report to confirm the use of group profiles is limited.	No relevant exceptions noted..
General users are not assigned to powerful user classes.	Using security analysis tools generated and inspected a report of users assigned to powerful user classes. Compared users with these assignments to their position on the organization chart.	No exceptions noted.
Inactive user accounts are removed from the system.	Using security analysis tools, generated and inspected the following report: Inactive User Profiles: List of users who have not signed on in more than 90 days.	No relevant exceptions noted.
User account passwords must be changed on a periodic basis.	Using security analysis tools, generated and inspected the following reports: Password Does Not Expire: List of user profiles with no password expiration interval. User Password Expiration > System Value: List of user profiles with a password expiration interval not equal to 0 or -1.	Two accounts used by IT personnel have passwords that do not expire. No other relevant exceptions noted.

IT Security - Control Objective: System Level Access Controls - Access to the computer system, programs, and data should be appropriately restricted.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
General users are restricted from accessing the command line.	Using security analysis tools, generated and inspected a report of users who can access the command line and change the defined initial program, initial menu, current library or the attention-key handling values.	No exceptions noted.
AS/400 network attributes are used to control requests from remote systems as follows: The Job Action Network attribute has been set so that input streams are filed on the queue of network files for the receiving users. This prevents network jobs from running automatically. The Client Request Access network attribute has been set so that Client Access programs on the system verify normal object authorities for any object requested by a PC program. The Distributed Data Management access network attribute has been set so that remote requests are controlled by the object authority on the system.	Inspected the following network attributes: Job Action Network - determines how the system processes incoming requests to run jobs. Client Request Access - determines how the Client Access licensed program processes requests from attached personal computers to access objects. Distributed Data Management Access - determines how the system processes requests from other systems to access data using the distributed data management (DDM) or the distributed relational database function.	No exceptions noted.
Access from the Internet is controlled with the use of a firewall. Statements have been entered into the configuration to control the outgoing IP traffic and restrict traffic entering the network.	Inspected the network diagram to confirm the components of the network which control Internet access. Inspected the firewall configuration online to confirm IP traffic must flow through the firewall.	Controls operating as described.
The firewall configuration is password protected.	Observed the telecommunications technician gain access to the firewall.	No exceptions noted.

IT Security - Control Objective: System Level Access Controls - Access to the computer system, programs, and data should be appropriately restricted.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The internal network uses an addressing scheme unable to be used over the Internet.	Inspected the firewall configuration online to confirm statements indicate the existence of a private network. Inspected a ping sweep of the internal network.	No exceptions noted.
Network documentation supports the firewall security access rules.	Inspected the firewall configuration online. Inquired with the telecommunications technician regarding specific settings within the firewall configuration.	No exceptions noted.
Remote access to the system is controlled by user ID and password.	Inspected the network access control policy settings to confirm active directory is the source of user accounts. Inspected the active directory default domain password policy to confirm passwords are required. Physically observed the telecommunications technician attempt a remote access login using both an incorrect and correct password.	No exceptions noted.

IT Security - Control Objective: System Software and Utilities Access Controls - Use of master passwords, powerful utilities and system manager facilities should be appropriately controlled.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
PUBLIC access to IBM system utilities is absent.	Inspected the access lists to the powerful system utilities.	No exceptions noted.

IT Security - Control Objective: System Software and Utilities Access Controls - Use of master passwords, powerful utilities and system manager facilities should be appropriately controlled.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
IBM supplied user profiles are controlled and default passwords have been changed.	Using security analysis tools, generated and inspected a report of the IBM supplied user profiles and evaluated the following profile characteristics: <ul style="list-style-type: none"> • Date and time of last password change. • Whether the password is expired. • Whether individuals are prevented from signing on to the system using these accounts. 	No exceptions noted.
User profiles with access to special authorities have been appropriately restricted. Users assigned to powerful user classes are appropriate for their job responsibilities.	Using security analysis tools generated and inspected the following reports: Special Authorities: List of user profiles with powerful special authorities. User Classes: List of users assigned to powerful user classes.	No exceptions noted.
User access to critical AS/400 system commands is restricted based upon job duties.	Inspected the access lists for the key system commands to confirm they have been restricted from public use.	No exceptions noted.
PUBLIC access to critical IBM system libraries and other objects is absent.	Inspected the access list to critical IBM libraries.	No exceptions noted.
Only essential programs have adopt authority. Adopted authority adds the authority of a program owner to the authority of the user running the program. Programs owned by powerful user profiles or having the *ALLOBJ (all object) authority should not be configured to adopt authority.	Inspected a list of programs with adopt authority for the IBM user profiles and other profiles with All Object authority.	No exceptions noted.

IT Security - Control Objective: System Software and Utilities Access Controls - Use of master passwords, powerful utilities and system manager facilities should be appropriately controlled.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
PUBLIC access to critical libraries is restricted based upon job duties.	Inspected the access list to the production program and data file libraries.	One account, used by programmers, has update access to the production library. As a compensating control, the customer systems group leader monitors this library monthly to confirm only authorized changes were made to programs. No relevant exceptions noted.
Access to IBM system authorization lists is restricted based upon job duties.	Inspected the IBM system authorization lists and inquired with the customer systems group leader about the appropriateness of the lists.	No exceptions noted.

IT Security - Control Objective: Physical Security - Computer facilities and data should have appropriate physical access restrictions and be properly protected from environmental dangers.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>AS/400 Server: Physical access to the computer room and its contents is restricted to authorized personnel.</p> <p>During normal business hours (8AM-5PM), security personnel monitor the entrances to the DOW building. Other entrances are restricted to DOW personnel. Computer operators are located either within the computer room or in a room adjacent to the computer room for a 24-hour period.</p> <p>Access to the IT area, is controlled by a key card system. Access to the computer room is restricted to authorized personnel.</p>	<p>Inspected the location of the AS/400 master console and observed physical access controls.</p> <p>Observed security personnel at the entrances to the DOW building.</p> <p>Inspected a listing of employees with key card access to the computer room.</p>	No exceptions noted.

IT Security - Control Objective: Physical Security - Computer facilities and data should have appropriate physical access restrictions and be properly protected from environmental dangers.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>AS/400 Server: Environmental controls are in place to protect against or detect fire, water, humidity or electrical surge damage.</p> <p>Environmental controls within the computer room include the following:</p> <ul style="list-style-type: none"> • Three dedicated air conditioning units. • FM 200 waterless fire protection system. • Raised flooring. • Fire alarm. • Fire extinguishers. • Backup power supply. 	Inspected the location of the AS/400 master console and observed environmental controls in place.	No exceptions noted.
<p>Windows 2003 Server: Physical access to the computer room and its contents is restricted to authorized personnel.</p>	Inspected the location of the Windows 2003 server and observed the physical access controls in place.	No exceptions noted.

IT Operations

IT Operations - Control Objective: System Administration and Maintenance - Appropriate procedures should be established to ensure the system is properly maintained and monitored.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>An operations run book is located in the computer room. It includes specific job information including data preparation, setup requirements, processing steps, expected results, and schedule information.</p> <p>An AS/400 System Operator's Guide is also maintained for use by the operators.</p>	Inspected the operations run book for job run descriptions and other scheduled operations. Also inspected the AS/400 System Operator's Guide for content.	No exceptions noted.

IT Operations - Control Objective: System Administration and Maintenance - Appropriate procedures should be established to ensure the system is properly maintained and monitored.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The data processing supervisor monitors the status of batch processing by comparing the report "distribution of forms/reports" and the daily and weekly distribution summary with the output queue.	Inspected the 11/15/08 and 11/16/08 reports for evidence of review.	No exceptions noted.
Routine operational and maintenance jobs are initiated through a batch scheduler program or are called by the "nucleus" job. This job initiates the regular data file updates and an additional schedule of batch jobs which are flagged daily to run during the nightly processing schedule. These jobs include the backup jobs and other necessary data file update activity.	Inspected the schedule of regularly run batch jobs. Also inspected the "nucleus" batch job that is run from the batch schedule.	No exceptions noted.
Operators are required to manually document job status and significant ABENDs on an incident report.	Inspected the incident reports for the month of October 2008 to confirm they were prepared daily for each of the three shifts and included information regarding significant occurrences and actions taken.	No exceptions noted.
The DOW has a maintenance agreement with IBM for support of the AS/400 hardware and related system software.	Inspected the IBM maintenance agreement and related payment information to confirm the agreement is current.	No exceptions noted.

IT Operations - Control Objective: Backup - Up-to-date backups of programs and data should be available in emergencies.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Documented procedures are available to operators for the performance of backups.	Inspected the IBM basic backup and recovery guide located in the DOW computer room.	No exceptions noted.

IT Operations - Control Objective: Backup - Up-to-date backups of programs and data should be available in emergencies.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Daily, weekly, and monthly backup tapes are rotated off-site according to a pre-determined rotation schedule. Backups are stored in an environmentally controlled, secured facility.	Inspected the off-site facility on 1/16/2009 and confirmed the appropriate tapes were rotated to the off-site location by tracing the tape numbers to the 1/16/2009 R-Tape Vault Movement report.	The off-site tape facility is located directly across the street from the computer room. The remote and mirrored replicating SAN serves as a compensating control.
Backup tapes are tracked using a tape management system.	Inspected an R-Tape volume inquiry listing for tapes created on 12/26/2008. Verified the tapes listed were on-site on 12/29/2008.	No exceptions noted.
The local storage area network (SAN) is replicated and mirrored to a backup SAN maintained by the DOW at a backup facility. The backup SAN is secured by a key card and the following environmental controls are in place: <ul style="list-style-type: none"> • Backup power supply (USP). • FM 200 waterless fire protection system. • Air conditioning unit. 	Inspected the service agreement and payment documentation for the SAN hardware and replication software to confirm support is available and replication is monitored. Confirmed with the customer systems group leader, data processing supervisor, and assistant manager of application development and technology support (infrastructure) that a SAN is installed and operating at the backup facility. Toured the facility where the backup SAN is located on 1/16/09 and observed the environmental controls in place.	No exceptions noted.

FINANCIAL APPLICATION CONTROLS PLACED IN OPERATION AND TESTS OF OPERATING EFFECTIVENESS

Billing and Payment System

Billing and Payment System - Control Objective: Authorization - Recorded transactions represent actual charges for services provided to customers and relate to the governmental entity and are approved. Receipts represent valid payments by customers for services received. Non-cash credits to accounts receivable represent valid adjustments and are approved.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Meter Reading and Billing: Rates for water, sewer, and fire lines are authorized by Cleveland City Council, NEORSD or local municipalities. The assistant administrator of the billing department enters new billing rates for water, sewer, and fire lines into the system.	Confirmed all rates (water, fire line, and sewer) in the billing application were supported by appropriate authorization documentation.	The Bedford Heights commercial rate with negotiated discount was not supported by written authorization.
Meter Reading and Billing: When UFC receives an ordinance for a rate change, a control sheet is prepared and attached to the ordinance. The control sheet is signed by the utilities fiscal manager, billing manager, and assistant commissioner of customer account services acknowledging completion, approval, and filing of the rate change ordinance.	Inspected all rate authorization documentation to confirm a completed control sheet was attached to the ordinance on file in Utilities Fiscal Control.	No relevant exceptions noted.

Billing and Payment System - Control Objective: Authorization - Recorded transactions represent actual charges for services provided to customers and relate to the governmental entity and are approved. Receipts represent valid payments by customers for services received. Non-cash credits to accounts receivable represent valid adjustments and are approved.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Meter Reading and Billing: Utilities Fiscal Control confirms rates annually, through a positive confirmation process, with direct service municipalities for whom billing procedures are performed. Municipalities are asked to confirm rates as well as accounts that are not currently assessed charges.</p> <p>The confirmation letters are sent via certified mail. A follow-up confirmation is sent two weeks after the first confirmation to any municipality who has not responded.</p> <p>A spreadsheet is maintained by UFC to document the date the confirmation was sent, the date the certified mail receipt was received, and any changes noted by the municipality on their confirmation response.</p>	<p>The following procedures were performed to confirm UFC's rate confirmation procedure includes tracking, follow-up, and correction of errors:</p> <ul style="list-style-type: none"> • Inspected the tracking spreadsheet for detail and completion. • Compared the communities listed on the tracking spreadsheet to an independent list of member communities to confirm all member communities were included in the confirmation process. • Inspected the returned certified mail cards for existence. • Inspected the returned confirmations and discussed any discrepancies with the UFC Controller. 	<p>The following member communities did not respond to the confirmation request.</p> <ul style="list-style-type: none"> • Highland Hills (a water and NEORSD only community). • Mayfield Village (a water and NEORSD only community). • Brunswick Hills (a water only community). <p>No other exceptions noted.</p>
<p>Meter Reading and Billing: New account set up requires the entry of connection and receipt numbers for each new account from the original permit.</p>	<p>Judgementally selected 30 dates from a population of 253 business days during the audit period and inspected the Report of New Accounts List (WSG08090). Traced one account from each list to the supporting documentation.</p> <p>Randomly selected 60 permits from a population of 1044 issued during the audit period and traced each permit to the "Report of New Accounts."</p>	<p>No relevant exceptions noted.</p>

Billing and Payment System - Control Objective: Completeness of Input - Authorized transactions, including sales, cash receipts and adjustments to accounts receivable are input and accepted for processing.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Meter Reading and Billing: To ensure all accounts are uploaded to the billing application, the total number of meters per the "Routes Received from Road Runner" report from the Datamatics application is compared to the "Batch Control & Error Transactions" report (WSA02020) from the IBM AS/400.	<p>Performed a walk-through of the upload process on 11/20/08. Inspected the "Routes Received from Road Runner" report and the "Batch Control & Error Transactions" report for 11/20/08.</p> <p>Selected six routes and confirmed the total number of meters agreed in the two reports mentioned above. Independently inquired with the assistant administrator and unit supervisor of the meter reading department regarding balancing procedures.</p>	No exceptions noted.
Payments: Cashiers complete a cashier control sheet for the amount of walk in payments collected. The principal cashier checks the control sheet and double checks the deposit. The cashier control sheet is submitted to the Cash Receipts Department where all of the stubs received by the cashiers are entered into the BancTec System. The tapes from the BancTec System are balanced to the cashiers' control sheets.	Re-performed the preparation of the cash control sheets for 6/30/08. Selected a haphazard sample of 60 business days throughout the audit period and confirmed cashier control sheets were prepared by the Cashiers Department for each of the days selected.	No exceptions noted.
Payments: The Cash Receipts Department reconciles all of the totals from the cashiers' tapes, mail, agency, direct deposit and lockbox to the total deposit each day.	Re-performed the Cash Receipts reconciliation for 6/30/08. Selected a haphazard sample of 60 business days throughout the audit period and confirmed reconciliations were performed by the Cash Receipts Department for each of the days selected.	No exceptions noted.
Payments: The Accounts Receivable Department reconciles the beginning Accounts Receivable balance to the ending Accounts Receivable (A/R) balance each day.	Re-performed the A/R reconciliation for 6/30/08. Selected a haphazard sample of 60 business days throughout the audit period and confirmed reconciliations were performed by the Accounts Receivable Department for each of the days selected.	No exceptions noted.

Billing and Payment System - Control Objective: Accuracy of Input - Charges for services transactions, including sales, cash receipts and adjustments to accounts receivable are accurately recorded as to amounts, quantities/consumption, dates and customers, and are recorded in the proper period.		Control Objective Has NOT Been Met
Control Procedures:	Test Descriptions:	Test Results:
Meter Reading and Billing: Accounts scheduled for meter reads are updated to the billing application on a nightly basis. Accounts, which are read but not billed, are reviewed the following day and are either rescheduled for another reading or manual bills are produced.	Judgmentally selected 10 residential, 10 commercial, and 5 inspection accounts which were sequenced for billing on 11/20/08. Followed those 25 accounts through the billing cycle as follows: <ul style="list-style-type: none"> • Observed the upload from the Road Runners and the Laptops to the Datamatics application. • Inspected the "Batch Control & Error Transactions" report (WSA02020) the following day to confirm the account readings were uploaded to the billing application. • Observed the accounts on-line to confirm the accounts were billed properly. • Inspected the error report (WSA02070) the following day to detect the inclusion of any selected accounts and inquired with the unit supervisor about the status of any accounts identified. Re-calculated the water and sewer charges for the above accounts to confirm accuracy.	Five of the 25 meter reads observed appeared on the "Batch Control & Error Transactions" report. Four of those accounts were billed an estimated amount pending further investigation or the replacement of a meter. The remaining account on the report failed a tolerance check for a final bill. The prior month estimated read was greater than the actual read. The account was sent to billing for an adjustment and final billing. No other exceptions were noted.

<p>Billing and Payment System - Control Objective: Accuracy of Input - Charges for services transactions, including sales, cash receipts and adjustments to accounts receivable are accurately recorded as to amounts, quantities/consumption, dates and customers, and are recorded in the proper period.</p>		<p>Control Objective Has NOT Been Met</p>
<p><i>Control Procedures:</i></p>	<p><i>Test Descriptions:</i></p>	<p><i>Test Results:</i></p>
<p>Meter Reading and Billing: The “Accounts not Billed” report is a cumulative report of all accounts which have not been billed in 105 days. This report is run in three different sort orders: Active Accounts (WSG07232), New Accounts (WSG07233), and Inactive Accounts (WSG07234). It is reviewed on a weekly basis by the assistant administrator of the Meter Reading Department for active and new accounts. Active and new accounts found are subsequently sequenced for a reading in the next cycle.</p>	<p>Inspected the “Accounts not Billed” report for 12/15/08, and independently inquired with the assistant administrator and the unit supervisor of the Meter Reading Department regarding the procedure for reviewing these reports.</p> <p>Inspected a report of out of order meters at 12/31/2008.</p> <p>For the weeks of July 14 –18, 2008 and December 15 – 19, 2008, inspected reports of estimated bills and compared the number of estimated bills to reports of the total bills for each of the 10 days selected.</p>	<p>The “Accounts not Billed” report is lengthy and accounts may receive estimated bills before they can be reviewed.</p> <p>There were 35,718 accounts listed on the report of out of order meters. Meters are out of order for approximately 9% of the total accounts.</p> <p>For the week of July 14-18, the percent of daily estimated accounts ranged from 8 to 22 percent of total accounts (8%, 22%, 13%, 9%, 9%). Of the total number of accounts billed for the week, 7% were based on estimated consumption. 62% of the estimated accounts had been estimated for 4 or more previous quarters, indicating that the customer received bills based on estimated consumption for one year or longer.</p> <p>For the week of December 15 - 19, the percent of daily estimated accounts ranged from 6 to 20 percent of total accounts (20%, 19%, 19%, 9%, 6%). Of the total number of accounts billed for the week, 9% were based on estimated consumption. 59% of the estimated accounts had been estimated for 4 or more previous quarters.</p>
<p>Meter Reading and Billing: Road Runners are reviewed for blanks, which are meters not read, by the meter reading supervisor before upload to the Datamatics application. Skip codes are entered for each blank which results in the account being investigated and rescheduled for another meter reading.</p>	<p>Observed the meter reading supervisor checking for blanks on the Road Runners. Independently inquired with the assistant administrator, unit supervisor, and meter reading supervisor about procedures for meters which are not read.</p>	<p>No exceptions noted.</p>

Billing and Payment System - Control Objective: Accuracy of Input - Charges for services transactions, including sales, cash receipts and adjustments to accounts receivable are accurately recorded as to amounts, quantities/consumption, dates and customers, and are recorded in the proper period.		Control Objective Has NOT Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Meter Reading and Billing: A "Daily Water-Sewer Billing Register" report (WSG07030) is reviewed daily for appropriateness of billed amounts, correct dates, unusually high homestead amounts and certain meter changes that may require adjustment.	Inspected a copy of the register and inquired with the assistant administrator of the Billing Department about procedures for review.	No exceptions noted.
Meter Reading and Billing: Rates for water, sewer, and fire lines are authorized by Cleveland City Council, NEORS or local municipalities. The assistant administrator of the billing department enters new billing rates for water, sewer, and fire lines into the system.	Confirmed all rates (water, fire line, and sewer) in the billing application were supported by appropriate authorization documentation.	The Bedford Heights commercial rate with negotiated discount was not supported by written authorization.
<p>Meter Reading and Billing: Utilities Fiscal Control confirms rates annually, through a positive confirmation process, with direct service municipalities for whom billing procedures are performed. Municipalities are asked to confirm rates as well as accounts that are not currently assessed charges.</p> <p>The confirmation letters are sent via certified mail. A follow-up confirmation is sent two weeks after the first confirmation to any municipality who has not responded.</p> <p>A spreadsheet is maintained by UFC to document the date the confirmation was sent, the date the certified mail receipt was received, and any changes noted by the municipality on their confirmation response.</p>	<p>The following procedures were performed to confirm UFC's rate confirmation procedure includes tracking, follow-up, and correction of errors:</p> <ul style="list-style-type: none"> • Inspected the tracking spreadsheet for detail and completion. • Compared the communities listed on the tracking spreadsheet to the list of member communities in the back of the SAS 70 report to confirm all member communities were included in the confirmation process. • Inspected the returned certified mail cards for existence. • Inspected the returned confirmations and discussed any discrepancies with the UFC Controller. 	<p>The following member communities did not respond to the confirmation request.</p> <ul style="list-style-type: none"> • Highland Hills (a water and NEORS only community). • Mayfield Village (a water and NEORS only community). • Brunswick Hills (a water only community). <p>No other exceptions noted.</p>

Billing and Payment System - Control Objective: Accuracy of Input - Charges for services transactions, including sales, cash receipts and adjustments to accounts receivable are accurately recorded as to amounts, quantities/consumption, dates and customers, and are recorded in the proper period.		Control Objective Has NOT Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Meter Reading and Billing: Validity checks are performed during the nightly batch update process. Exceptions are reported on the "Batch Control & Error Transactions" report (WSA02070).</p> <p>Validity and logic checks are a part of the nightly batch update process.</p> <p>Validity checks include verifying the validity of month and day entries. Logic checks include checking to ensure the customer sequence number appears on both the transaction and master files, sub-meter consumption is not greater than the main meter consumption, and the current read date is after the prior read date.</p>	<p>Inspected program logic for selected edits.</p> <p>Independently inquired of the unit supervisor of the Meter Reading Department and the assistant administrator of the Billing Department about procedures for reviewing the error report.</p> <p>Performed a walk-through of the upload process and inspected the error reports for 11/21/08.</p>	No exceptions noted.
<p>Payments: Full payments are electronically read and posted by the Banctec Machine by electronically reading the payment stub.</p>	<p>Observed a senior data conversion operator run a batch of full payment stubs through the Banctec machine on 11/26/08. For the first 60 payments in the batch, confirmed the amounts listed on the Banctec tape agreed to the amount due on the payment stub.</p>	No exceptions noted.
<p>Payments: Partial payments must be keyed and then reverse keyed into the Banctec System to ensure accurate input. The amount listed on the stub is crossed out and the amount of the payment is written on the stub. Amounts received are entered from the actual check, not from the bill stub.</p>	<p>Observed a data conversion operator enter a partial payment batch on 11/26/08.</p>	No exceptions noted.

Billing and Payment System - Control Objective: Accuracy of Input - Charges for services transactions, including sales, cash receipts and adjustments to accounts receivable are accurately recorded as to amounts, quantities/consumption, dates and customers, and are recorded in the proper period.		Control Objective Has NOT Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Payments: The Bancotec machine performs the following edit checks:</p> <ul style="list-style-type: none"> • Batch type must be a valid menu option. • Form number must be numeric. • Account number 10 digits, numeric, may not contain <u>all</u> zeros. • Account number check digit, numeric. Check digit on positions 2 - 11. One digit required for validation as check for documents of type 1 (water/sewer). • Amount due 9 digits, numeric, may not contain all zeros. • Payment code must equal 0, 1, 4, 5, 7, 8, or 9. • Customer sequence number must be numeric. <p>The cash processing program (Billing and Payment system on the AS/400) performs the following edit checks:</p> <ul style="list-style-type: none"> • The account number must be valid. • All numeric fields must be numeric (pay code, pay type, customer sequence) • Total batch detail must equal batch header. • Total of all batch headers must equal total input for the day. 	<p>Inspected the operations manual for the Bancotec System. Inspected the program code for the cash processing program.</p>	<p>No exceptions noted.</p>

Billing and Payment System - Control Objective: Cutoff of Transactions – What assures that billing and payment transactions are recorded in the proper period?		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Payments: Cashiers complete a cashier control sheet for the amount of walk in payments collected. The principal cashier checks the control sheet and double checks the deposit. The cashier control sheet is submitted to the Cash Receipts Department where all of the stubs received by the cashiers are entered into the Banctec System. The tapes from the Banctec System are balanced to the cashiers' control sheets.	Re-performed the preparation of the cash control sheets for 6/30/08. Selected a haphazard sample of 60 business days throughout the audit period and confirmed cashier control sheets were prepared by the Cashiers Department for each of the days selected.	No exceptions noted.
Payments: The Cash Receipts Department reconciles all of the totals from the cashiers' tapes, mail, agency, direct deposit and lockbox to the total deposit each day.	Re-performed the Cash Receipts reconciliation for 6/30/08. Selected a haphazard sample of 60 business days throughout the audit period and confirmed reconciliations were performed by the Cash Receipts Department for each of the days selected.	No exceptions noted.
Payments: The Accounts Receivable Department reconciles the beginning Accounts Receivable balance to the ending Accounts Receivable (A/R) balance each day.	Re-performed the A/R reconciliation for 6/30/08. Selected a haphazard sample of 60 business days throughout the audit period and confirmed reconciliations were performed by the Accounts Receivable Department for each of the days selected.	No exceptions noted.

Billing and Payment System - Control Objective: Transaction Occurrence – What assures that billing and payment transactions actually occurred and are not fictitious? What prevents duplicate transactions from occurring?		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Meter Reading and Billing: Validity checks are performed during the nightly batch update process. Exceptions are reported on “Batch Control & Error Transactions” report (WSA02070).</p> <p>Validity and logic checks are a part of the nightly batch update process.</p> <p>Validity checks include verifying the validity of month and day entries. Logic checks include checking to ensure the customer sequence number appears on both the transaction and master files, sub-meter consumption is not greater than the main meter consumption, and the current read date is after the prior read date.</p>	<p>Inspected program logic for selected edits.</p> <p>Independently inquired of the unit supervisor of the Meter Reading Department and the assistant administrator of the Billing Department about procedures for reviewing the error report.</p> <p>Performed a walk-through of the upload process and inspected the error reports for 11/20/08.</p>	<p>No exceptions noted.</p>

Billing and Payment System - Control Objective: Transaction Occurrence – What assures that billing and payment transactions actually occurred and are not fictitious? What prevents duplicate transactions from occurring?		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Payments: The Banctec machine performs the following edit checks:</p> <ul style="list-style-type: none"> • Batch type must be a valid menu option. • Form number must be numeric. • Account number 10 digits, numeric, may not contain <u>all</u> zeros. • Account number check digit, numeric. Check digit on positions 2 - 11. One digit required for validation as check for documents of type 1 (water/sewer). • Amount due 9 digits, numeric, may not contain all zeros. • Payment code must equal 0, 1, 4, 5, 7, 8, or 9. • Customer sequence number must be numeric. <p>The cash processing program (Billing and Payment system on the AS/400) performs the following edit checks:</p> <ul style="list-style-type: none"> • The account number must be valid. • All numeric fields must be numeric (pay code, pay type, customer sequence) • Total batch detail must equal batch header. • Total of all batch headers must equal total input for the day. 	<p>Inspected the operations manual for the Banctec System. Inspected the program code for the cash processing program.</p>	<p>No exceptions noted.</p>

Billing and Payment System - Control Objective: Integrity of Standing Data -Changes to standing data are authorized and accurately input.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Meter Reading and Billing: Only authorized users can initiate rate changes, new account set-up, and name/address changes.</p>	<p>Inspected a listing of CICS transactions and obtained the user access report for the following transactions:</p> <ul style="list-style-type: none"> • WS65 Charge Maintenance • WS94 Add/Update New Accounts • WS95 Create New Accounts <p>Traced all update access to request forms for authorization and agreement.</p> <p>Inquired with the assistant commissioner of customer account services, manager of the billing department, and the assistant administrator of the billing department to confirm the appropriateness of access to those transactions. Inquired with the assistant administrator of permits and sales to confirm the appropriateness of access specifically for the permits and sales personnel with access to the WS94 and WS95 transactions.</p>	<p>No exceptions noted.</p>

Billing and Payment System - Control Objective: Completeness and Accuracy of Updating - Charges for services transactions and cash receipts input are accurately updated to the revenue, accounts receivable and cash receipts databases.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Meter Reading and Billing: The amount due for master meter accounts is calculated on a spreadsheet by the assistant administrator of the Billing Department. Master meter accounts are billed on a monthly basis.</p>	<p>Obtained the master meter billing spreadsheets for the month of March 2008 and recalculated all charges for accuracy.</p>	<p>No exceptions noted.</p>

Billing and Payment System - Control Objective: Completeness and Accuracy of Updating - Charges for services transactions and cash receipts input are accurately updated to the revenue, accounts receivable and cash receipts databases.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Payments: Before issuing the "GO" command to update the accounts receivable file with daily payments, the assistant administrator, Accounts Receivable Department in Utilities Fiscal Control, agrees the amount of payments from the Cash Receipts Department to the amount included in the input file from IT.	On 11/24/08, observed the assistant administrator, Accounts Receivable Department in Utilities Fiscal Control, confirm the input file online by comparing the reconciliation from the Cash Receipts Department to the amount verbally reported by the IT Department. The daily log file was then reviewed to confirm the "GO" command was executed.	No exceptions noted.
Payments: After issuing the "GO" command the Accounts Receivable Department receives several reports from the IT Department. The Accounts Receivable Department uses these reports along with a cash report received from the Cash Receipts Department to reconcile the beginning A/R balance to the ending A/R balance.	Re-performed the A/R reconciliation for 6/30/08. Selected a haphazard sample of 60 business days throughout the audit period and confirmed that reconciliations were performed by the A/R Department for each of those days. Also, confirmed the cash amount from the above cash receipts reconciliations was included in the A/R reconciliations for each of the 60 days.	No exceptions noted.

Billing and Payment System - Control Objective: Completeness and Accuracy of Accumulated Data - The integrity of individual accounts receivable in the subsidiary ledger and the accounts receivable and cash accounts in the "general ledger," after charges for services transactions have been accumulated in them, is preserved.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Payments: Monthly reconciliations are prepared by the A/R Department. The beginning of the month A/R balance is reconciled to the month-end A/R balance, using monthly reports generated by the IT Department.	Inspected the monthly reconciliations to confirm reconciliations were performed for each month of the audit period. Re-performed the monthly reconciliation for June 2008. Confirmed the month-end A/R balance listed on the reconciliation agreed to the day end A/R balance.	No relevant exceptions noted.

Billing and Payment System - Control Objective: Restricted Access to Assets and Records - Only authorized personnel have access to accounts receivable and cash receipt records (including standing data) and cash receipts.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
<p>Meter Reading and Billing: Transaction level security has been implemented at the application level to restrict access to the billing application.</p>	<p>Inspected a listing of CICS transactions and obtained the user access report for the following transactions:</p> <ul style="list-style-type: none"> • WS42 Adjustment Entry. • WS43 Adjust Consumption (Credit). • WS44 Adjust Consumption (Debit). • WS60 Charge Index Maintenance. • WS65 Charge Code (Rates) Maintenance. • WS68 Sprinkling Rate Maintenance. • WS80 CMBR Maintenance. • WS94 Add / Update New Accounts. • WS95 Create New Accounts. • WS97 Security File Update. <p>Traced all update access for the above transactions to request forms for authorization and agreement with the actual access granted.</p> <p>Inquired with the assistant commissioner of customer accounts, the manager of billing, and the assistant administrator of the billing department to confirm the appropriateness of access. Inquired with the assistant administrator of permits and sales to confirm the appropriateness of access specifically to the permits and sales personnel with access to the WS94 and WS95 transactions.</p>	<p>No exceptions noted.</p>
<p>Meter Reading and Billing: Application level access has been implemented to restrict access to the Datamatics application.</p>	<p>With the assistance of the unit supervisor of the Meter Reading Department, observed online, individual access to the Datamatics application.</p>	<p>No exceptions noted.</p>

Billing and Payment System - Control Objective: Restricted Access to Assets and Records - Only authorized personnel have access to accounts receivable and cash receipt records (including standing data) and cash receipts.		Control Objective Has Been Met
Control Procedures:	Test Descriptions:	Test Results:
<p>Payments: Application level access is controlled through the Banctec System. Users are required to enter an operator ID and a password.</p> <p>On the AS/400, access to the cash processing functions is restricted to certain users using CICS application security.</p>	<p>Observed the data conversion operator enter an operator ID and password to operate the Banctec System.</p> <p>Inspected a CICS listing of individuals with update access to the following cash payment transactions:</p> <ul style="list-style-type: none"> • WS33 Cash Control Subsystem. • WSEZ E-Z Pay Exception Maintenance. <p>Traced all update access for the transactions to request forms for authorization and agreement with the actual access granted.</p> <p>For the WSEZ function, inquired with the assistant commissioner of customer account services, the manager of billing, and the assistant administrator of the billing department to confirm the appropriateness of access to the transaction.</p> <p>For the WS33 function, inquired with the utilities controller and assistant administrator of accounts receivable in Utilities Fiscal Control to confirm the appropriateness of access to the transaction.</p>	<p>No relevant exceptions noted.</p>

Billing and Payment System - Control Objective: Restricted Access to Assets and Records - Only authorized personnel have access to accounts receivable and cash receipt records (including standing data) and cash receipts.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Payments: Cash is protected before being deposited.	Independently inquired about the depositing procedures with the assistant administrator of the Cash Receipts and Processing Department and the manager of cashiers and assistant administrator in the Accounts Receivable Department. Observed the preparation of the deposit and the transfer of deposit to the security guard on 11/26/08, at the processing center and cashiers' area. Observed the existence of safes in the processing center and cashiers' area.	No exceptions noted.
Payments: Physical access to the cashiers' area is restricted to authorized personnel and access to the Banctec area is restricted to authorized personnel using a card key system.	Inspected a list of individuals with access to the cashier and Banctec areas. Independently confirmed the appropriateness of access to these areas with the following management personnel in Utilities Fiscal Control: <ul style="list-style-type: none"> • Commissioner of fiscal control. • General manager of administrative services. • Utilities controller. • Manager of cashiers and assistant administrator of accounts receivable. • Assistant administrator of cash receipts and processing. 	No exceptions noted.

Distribution

Distribution - Control Objective: Authorization - Recorded payments (distributions) represent approved payments (Sewer payments) and adjustments to accounts receivable are input and accepted for processing.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
Letters are sent out by the commissioner of fiscal control authorizing the distribution of sewer and local charges.	Inspected copies of the letters for the entire audit period to confirm completion. Traced the amounts included on the 04/09/08 letters to the amounts listed on the March remittance schedule to confirm agreement.	No relevant exceptions noted.
Vouchers are prepared, approved and sent to the City of Cleveland for remittance to the individual municipalities listed on the remittance schedule.	Obtained a listing of all remittances for sewer and local charges during the audit period from the chief auditor of utilities. Inspected copies of the voucher payment forms prepared by the chief clerk for the entire audit period, to confirm completion. Traced the amounts on the 04/09/08 forms to the March remittance schedule to confirm agreement. Selected 35 remittance payments from a population of 339 remittances made during the audit period and inspected the voucher payment forms maintained by the city to confirm approval.	No exceptions noted.

Distribution - Control Objective: Completeness of Input - All authorized payments (distributions) are input for processing.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The Accounts Receivable Department receives computer generated reports for all of the cash received for sewer and local charges. These cash reports are used to generate the remittance schedule. The total cash on the remittance schedule must equal the total cash received for sewer and local charges.	Re-performed the March 2008 remittance procedures used to generate all of the schedules involved in the preparation of the final remittance. Scanned the file of schedules to confirm they were prepared for each month of the audit period.	No exceptions noted.

Distribution - Control Objective: Accuracy of Input - Authorized payments (distributions) are accurately recorded as to amounts, dates, and are recorded in the proper period.		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The Accounts Receivable Department receives computer generated reports for all of the cash received for sewer and local charges. These cash reports are used to generate the remittance schedule. The total cash on the remittance schedule must equal the total cash received for sewer and local charges.	Re-performed the March 2008 remittance procedures used to generate all of the schedules involved in the preparation of the final remittance. Scanned the file of schedules to confirm they were prepared for each month of the audit period.	No exceptions noted.
The remittance schedule is prepared monthly. The Accounts Receivable Department begins preparing the report on the 1 st of the month and it must be completed by the 4 th of the month. Letters are sent by the commissioner of fiscal control to each client who should receive a payment authorizing the distribution of sewer and local charges. The letters indicate the amount of the remittance.	Inspected copies of the letters for the entire audit period to confirm completion. Traced the amounts included on the 04/09/08 letters to the amounts listed on the August remittance schedule to confirm agreement.	No relevant exceptions noted.
Vouchers are prepared, approved and sent to the City of Cleveland for remittance to the individual municipalities listed on the remittance schedule.	Obtained a listing of all remittances for sewer and local charges during the audit period from the chief auditor of utilities. Inspected copies of the voucher payment forms prepared by the chief clerk for the entire audit period, to confirm completion. Traced the amounts on the 04/09/08 forms to the March remittance schedule to confirm agreement. Selected 35 remittance payments from a population of 339 remittances made during the audit period and inspected the voucher payment forms maintained by the city to confirm approval.	No exceptions noted.

Distribution - Control Objective: Transaction Occurrence – What assures that distribution transactions actually occurred and are not fictitious? What prevents duplicate transactions from occurring?		Control Objective Has Been Met
<i>Control Procedures:</i>	<i>Test Descriptions:</i>	<i>Test Results:</i>
The Accounts Receivable Department receives computer generated reports for all of the cash received for sewer and local charges. These cash reports are used to generate the remittance schedule. The total cash on the remittance schedule must equal the total cash received for sewer and local charges.	Re-performed the March 2008 remittance procedures used to generate all of the schedules involved in the preparation of the final remittance. Scanned the file of schedules to confirm they were prepared for each month of the audit period.	No exceptions noted.
The remittance schedule is prepared monthly. The Accounts Receivable Department begins preparing the report on the 1 st of the month and it must be completed by the 4 th of the month. Letters are sent by the commissioner of fiscal control to each client who should receive a payment authorizing the distribution of sewer and local charges. The letters indicate the amount of the remittance.	Inspected copies of the letters for the entire audit period to confirm completion. Traced the amounts included on the 04/09/08 letters to the amounts listed on the March remittance schedule to confirm agreement.	No relevant exceptions noted.

SECTION IV - OTHER INFORMATION PROVIDED BY THE SERVICE ORGANIZATION

HARDWARE DATA

Central Processors and Peripheral Equipment

<u>Manufacturer / Model Number</u>	<u>Random Access Memory</u>	<u>Disk Storage</u>
IBM AS/400 Model 9406-820	1 GB	171 GB
Banctec 9500	126 MB	1 GB

MISCELLANEOUS EQUIPMENT

<u>Equipment Type / Manufacturer and Model</u>	<u>Units in Total</u>
Disk Unit	20
Tape Unit	5
Storage Controller	4
Workstation Controller	15
Printer Device	3
Combined Function IOP	1
Optical Storage Unit	1
Token Ring Port	1
Ethernet Port	1
LAN Adapter	2
Comm Adapter	3
V.24 Port	5
Meter Reading Equipment – Laptops	51
Meter Reading Equipment – Hand-Held	50

SOFTWARE

<u>Type</u>	<u>Name / Manufacturer</u>	<u>Version Number</u>
Operating System	IBM OS/400	5.2
Security Software	CICS for AS/400	5.0
Report Writer	Query for AS/400	5.2
Programming Language	ILE COBOL for AS/400	5.2
Application Development Tool Set	IBM	5.2
Windows 2003	Microsoft	4.0
Application Software	Datamatics	4.0

USER SITE DATA

<u>Communities Served</u>	<u>County</u>	<u>Communities Served</u>	<u>County</u>
Cleveland	Cuyahoga		
	<u>Direct Service Suburbs</u>		
Bay Village	Cuyahoga	Glenwillow	Cuyahoga
Beachwood	Cuyahoga	Highland Heights	Cuyahoga
Bedford Heights	Cuyahoga	Highland Hills	Cuyahoga
Bentleyville	Cuyahoga	Hinkley Twp.	Medina
Berea	Cuyahoga	Hudson	Summit
Boston Heights	Summit	Hunting Valley	Cuyahoga
Bratenahl	Cuyahoga	Independence	Cuyahoga
Brecksville	Cuyahoga	Linndale	Cuyahoga
Bedford	Cuyahoga	Liverpool Twp	Medina
Broadview Heights	Cuyahoga	Lyndhurst	Cuyahoga
Brooklyn Village	Cuyahoga	Macedonia	Summit
Brooklyn Heights	Cuyahoga	Maple Heights	Cuyahoga
Brookpark	Cuyahoga	Mayfield Village	Cuyahoga
Brunswick	Medina	Mayfield Heights	Cuyahoga
Brunswick Hills Twp.	Medina	Middleburg Heights	Cuyahoga
Chesterland	Geauga	Moreland Hills	Cuyahoga
Cuyahoga Heights	Cuyahoga	Newburg Heights	Cuyahoga
East Cleveland	Cuyahoga	Northfield	Summit
Euclid	Cuyahoga	North Olmstead	Cuyahoga
Fairview Park	Cuyahoga	North Randall	Cuyahoga
Garfield Heights	Cuyahoga	Rocky River	Cuyahoga
Gates Mills	Cuyahoga	Seven Hills	Cuyahoga
North Royalton	Cuyahoga	Shaker Heights	Cuyahoga
North Hills Water District	Summit	Solon	Cuyahoga

USER SITE DATA

<u>Communities Served</u>	<u>County</u>	<u>Communities Served</u>	<u>County</u>
Oakwood	Cuyahoga	South Euclid	Cuyahoga
Olmsted Falls	Cuyahoga	Strongsville	Cuyahoga
Olmsted Twp.	Cuyahoga	Twinsburg	Summit
Orange Village	Cuyahoga	Twinsburg Twp.	Summit
Parkview	Cuyahoga	University Heights	Cuyahoga
Parma	Cuyahoga	Valley View	Cuyahoga
Parma Heights	Cuyahoga	Walton Hills	Cuyahoga
Pepper Pike	Cuyahoga	Warrensville Heights	Cuyahoga
Reminderville	Portage	West View	Cuyahoga
Richfield Twp.	Summit	Westlake	Cuyahoga
Richmond Heights	Cuyahoga	Woodmere	Cuyahoga
Riveredge Township	Cuyahoga		
<u>Master Meter Suburbs</u>			
Bedford	Cuyahoga	Lakewood	Cuyahoga
Chagrin Falls	Cuyahoga	Geauga County	Geauga
Cleveland Heights	Cuyahoga		
<u>Emergency Standby Communities</u>			
Berea	Cuyahoga	Medina County	Medina
Lake County	Lake	Portage County	Portage
Lorain County	Lorain	Hudson Village	Summit
North Ridgeville	Lorain	Summit County	Summit



Mary Taylor, CPA
Auditor of State

**CITY OF CLEVELAND – DIVISION OF WATER
SAS - 70**

CUYAHOGA COUNTY

CLERK'S CERTIFICATION

This is a true and correct copy of the report which is required to be filed in the Office of the Auditor of State pursuant to Section 117.26, Revised Code, and which is filed in Columbus, Ohio.

Susan Babbitt

CLERK OF THE BUREAU

**CERTIFIED
AUGUST 6, 2009**