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Docket Control
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

RE: Compliance Filings as Required by Decision No. 68112
Docket No's. E-01345A-03-0775 and E-01345A-04-0657

Pursuant to Paragraphs 32(a), 32(c), 32(e), and 33(a), of the Proposed Settlement Agreement and Decision in Docket No. E-01345A-04-0657, Arizona Public Service is submitting the following documents:

- Attachment 1 – Backup Meter Reading Staffing Procedures
- Attachment 2 – Meter Reading Performance Measures
- Attachment 3 – AMS Plan Biannual ACC Report
- Attachment 4 – Bill Estimation and Tariff Training

If you have any questions on the enclosed information, please call me at 602-250-3933.

Sincerely,

David J. Rumolo
Manager, Regulation and Pricing

Attachments

CC: Compliance Section

Attachment 1
Backup Meter-Reading Staffing Procedures For Small / Remote Shops

Pursuant to Paragraph 32(a) of the Commission-approved Demand Estimation Settlement, APS has identified 11 meter-reading shops that are either small or remote and developed and implemented a procedure to ensure that staffing resources are sufficient to address emergency short-term needs and that adequate meter-reading back-up provisions are in place. Each of these shops has three or fewer meter readers.

Both primary and secondary back-up procedures include staffing by either a utility worker trained to read meters or meter readers from a nearby office to assist in the event the primary meter reader is unable to perform his/her duties. Should situations arise when no meter readers are available or unable to complete a route, they would get assistance from the primary and secondary back-up offices, with meter readers from Phoenix filling the role of last resort. When possible (vacation, lengthy illness, weather problems, etc.), arrangements are made in advance with the back-up offices. Although the back-up meter reader will seldom be familiar with the coverage area, the handheld equipment contains sufficient information and particulars to assist in locating and reading each meter. These backup procedures will help to reduce the potential for "skipped" meter readings due to staffing resource issues in the future.

Emergency Back-Up Procedure

Small Meter Read Shop	
Office	Meter Readers
Globe	3
Douglas	2
Parker	2
Wickenburg	2
Payson	3
Winslow	1
Holbrook	1
Snowflake	1
Showlow	1
Tuba City	1
Williams	1

Primary Back-up	
Office	Meter Readers
Casa Grande	9
Utility worker trained as Meter Reader back-up	1
Yuma	10
Metro	87
Verde	6
Payson	3
Payson	3
Payson	3
Payson	3
Flagstaff	8
Flagstaff	8

Secondary Back-up	
Office	Meter Readers
Metro	87
Casa Grande	9
Metro	87
Prescott	9
Flagstaff	8
Flagstaff	8
Flagstaff	8
Flagstaff	8
Flagstaff	8
Payson	3
Prescott	9

Example: If the meter reader in Winslow is unable to perform his duties, the primary back-up would be a meter reader from Payson. If none are available, the secondary back-up would be for one of the Flagstaff meter readers to fill in.

Attachment 2
Meter Reading Performance Measures

Pursuant to Paragraph 32(c) of the Commission-approved Demand Estimation Settlement, APS is commenting on the performance measures that are in place to help monitor our compliance with the Commission requirement to read meters each month (no less than 25 days after the last meter read and no more than 35 days after the last meter reading).

A procedure has been in place in each meter-reading shop that allows each day's meter route schedules to be adjusted in order to ensure that unread meters approaching the 35-day maximum can be given special attention. This is accomplished by the utilization of a 25-35 day query, the results of which identifies the number of days associated with each route's meters from last month's read date to the next scheduled read date. This 25-35 day query is utilized by each shop, daily, to monitor all routes scheduled for reading. This 'next day' view enables the shops to read any routes today that may be in jeopardy of being over 35 days tomorrow, and it also enables the shop to hold a route for reading if the number of days since last read date is less than 25. This query is a tool that is an integral piece of daily meter reading and provides the means by which routes are scheduled to be read.

In December of 2004, the Company put into effect a proactive performance measure to monitor the extent to which APS is complying with the Commission requirement to read meters each month. This involved the creation of a new quality control position whose responsibilities include a daily review of the above-mentioned 25-35 day query results. This quality control person identifies accounts that have the potential of having their meters read outside the desired timeframe and contacts the particular meter read shops to ensure that they are aware of the situation, thus avoiding a possible violation of the Commission directive. This added process provides an independent review to ensure meter read routes are structured and planned within ACC guidelines.

The quality control position has been able to identify situations where meter read schedules could have caused reads to occur outside of the 25-35 day requirement, and worked with the appropriate personnel to correct the situation. APS is continuing, however, to refine the quality control process to further reduce the potential for reads to occur outside of the meter reading requirements.

It should also be noted that meeting the 25-35 day requirement does not affect the number of no-access meter reads, as the Settlement alludes. The Company is committed to reading all meters within the 25-35 day timeframe.

Attachment 3
Arizona Public Service
AMS Plan Biannual ACC Report
March 2006

Introduction

Pursuant to Paragraph 32(e) of the Commission-approved Demand Estimation Settlement, Arizona Public Service (APS) is required to provide the Commission with biannual reports related to the status of APS' remote meter reading pilot and implementation plans for the next six years. This report provides a description of the meter reading technology being implemented, APS' plan for implementation, the number and type of customers involved in the pilot program, the costs associated with implementation, and the operational efficiencies associated with implementation.

Overview

Remote meter reading, also known as Automated Meter Reading (AMR), emerged from the need for utilities to reduce or eliminate the escalating costs and safety exposures of performing the manual meter reading function. Early AMR systems consisted of simple metering/communications enhancements that automated the monthly gathering of kWh information. Through the years the industry has added additional functionality to these meters and is now more commonly referred to as Advanced Metering Systems (AMS). In addition to providing simple kWh-only meter reads some AMS now support Time-of-Use (TOU) and demand rate schedules. Many new features have also been added to perform functions such as remote rate programming, outage and restoration notification, tamper detection and notification, and providing much more granular energy usage data that can be used to enhance a number of utility and customer functions.

History

APS has been researching AMR/AMS solutions for many years. Until recently, most systems were designed to support basic energy-only rates. They did not provide (TOU) functionality with a demand component. These systems simply provided a more efficient process for obtaining monthly meter reads and although they could reduce meter reading costs they lacked the sophistication to transform a utility's metering needs.

APS has the highest percentage of installed Time-of-Use meters in the United States making it imperative to identify a solution that addresses TOU. The inability of AMR solutions to adequately support TOU and demand rates represented the largest hurdle for APS to overcome in its adoption of modern metering technology. In 2003, APS identified two companies that provided an AMS solution supporting TOU rate structures. The products identified were the Elster EnergyAxis System and the PowerOneData AMS9000 system.

During 2004, an AMS single phase meter pilot was initiated in metro Phoenix, consisting of 470 Elster meters and 462 PowerOneData meters. Both systems provided the basic functionality and met ANSI metering standards. Each system provided reads that were able to be used for customer billing as well as to eliminate certain field orders. The two systems each used unlicensed 900 MHz Radio Frequency (RF) as a conduit to provide data from client meters to sparsely placed collector meters which communicate with APS through either cellular or hard phone lines.

APS reviewed the differentiating factors between the two systems before making a selection. The PowerOneData solution provided additional functionality not found in the Elster system. This added functionality is believed to provide long term benefits to APS. For example, the RF communications design used by the PowerOneData system allows each meter to notify APS when the meter encounters a power outage or power restoration. Conversely, the Elster system could only provide power restoration information. This real time information will allow APS to more quickly identify outage situations and restore power to affected customers. PowerOneData also supports a highly user configurable meter display and meter rate schedule not available with the Elster system.

The PowerOneData single-phase meter can be programmed to supply reads for any APS rate with the appropriate accompanying display requirements. This enables rate changes in the meter to be performed remotely from a central office reducing trips to the field as customers change rates and significantly reduces the cost to implement new rates in the future. Other benefits of the PowerOneData system are its ability to update meter firmware remotely as well as its capability to provide user configurable Load Profile data.

PowerOneData Solution

The PowerOneData (P1D) system is built on the Itron Centron metrology platform and is a standard single phase solid state meter with additional communication and functionality. APS has purchased the Itron Centron meter for TOU customers since 2001. The P1D system is comprised of hub and client meters that communicate with each other through RF. Hub and client meters are essentially identical with the primary exception of a General Packet Radio Service (GPRS) cellular modem added to the hub meters. The hub meters communicate to APS using the standard GPRS communication network and provide a gateway for each client meter in its cluster to communicate with the APS host system.

Communications:

In evaluating AMS options, one APS objective was to identify a system that did not require the installation and maintenance of a communications network. Some AMS solutions require equipment to be installed in the field in order to communicate with the meters. Each P1D meter on the other hand is self-configuring when it is installed in the field and self-healing if there is a communications interruption. The meters essentially create their own communications network.

When a client meter is installed into a meter socket, it immediately goes into a "hub search" mode. It identifies each hub meter that is within communication range and joins the cluster of the optimal hub based on RF signal strength and the number of clients in each cluster. Nightly, each hub meter performs a roll-call by sending a message to the clients in its cluster. If a client meter fails to receive the message by a designated time, it returns to hub search mode and joins another cluster. This search mode allows the communications network to be self-healing should a hub meter become unable to communicate. This communications environment allows APS to receive all the benefits of the AMS system without incurring the up front or ongoing maintenance costs of a dedicated communication network.

Security:
Each meter is programmed with the IP address of the utility host system and all data traveling through the communications network is encrypted. The meter contacts the APS host system nightly to provide reads and receive any commands that need to be processed by the meter, (e.g.. demand reset, rate reprogramming, etc). Should APS require an immediate function such as obtaining a current meter read, a message is sent to the meter indicating a pending request. The meter then contacts the host system at APS to receive the request. Meters do not provide information unless the meter itself has initiated the communication. This communication method restricts unauthorized users from receiving information or performing functions since the communications are always initiated by the meter and exclusively with the APS host system.

Functionality and Processing:
Each night when the meter contacts the APS host system it sends hourly reads from the previous day and receives any pending commands. Approximately thirty-five days of data are stored within the meter itself. Should a meter be unable to provide its data to the APS host system during the normal nightly processing, the meter will send all unsent data once communication is restored.

In addition to the regular nightly meter reads, the P1D meter performs additional functions. The meter provides outage and restoration notification in real-time. The meters can accept commands from APS to perform functions such as configuring the meter to facilitate a customer rate change, resetting the demand, and retrieving real-time meter reads. If the meter is inverted in the meter socket the meter will send an inverted meter notification to APS but will continue to accumulate energy usage in the forward direction. This will reduce the amount of revenue lost by APS due to energy theft.

Project Status

After a side by side evaluation of the two pilot products for more than twelve months APS selected P1D for the implementation of the Phase II Pilot.

An AMS project team is currently working on the integration of the PowerOneData AMS9000 system with the current APS computer applications. Installation of the interfaces are expected in the summer of 2006. This will automate the meter reading and

order processing functions. The ability for APS to collect load profile data will also be enhanced since each P1D meter is capable of providing data currently only available from Interval Data Recoding meters. Outage notification is planned to be incorporated later in the year.

Deployment Plan

Beginning in the second quarter of 2006, APS plans to deploy 60,000 P1D meters. The initial deployment will be targeted at multi-unit residential housing such as apartment complexes and trailer parks based on the high occupant turn-over rates. Currently, each time a unit changes tenants, APS sends field service personnel to the location to read the meter in order to generate a final bill for the customer. The ability to collect remote meter reads will eliminate the requirement for a field visit.

In the third quarter of 2006, APS plans to begin installing P1D meters in new growth areas within metro Phoenix that have GPRS cellular coverage. This will significantly reduce the AMS implementation cost since there is no incremental field visit needed to install the meter in the sense that APS must send a field service person to install the new meter regardless of the type of meter being installed. Therefore, the only additional cost burden to the project for setting meters in growth areas is the incremental cost between an AMS meter over a traditional TOU meter.

Another viable deployment being considered for the P1D meters is very remote sites. Remote locations are often difficult to reach and take significantly more time to read each month. In June, 2005 APS deployed three P1D meters at a remote location on top of Newman Peak. These meters have been successfully providing data since they were set.

Costs

This project consists of four main cost components; P1D meters, monthly GPRS communications, meter installation, and cost to interface the P1D system with current APS applications.

Meter Costs:

In 2005 APS signed a contract with PowerOneData to purchase 160,000 meters through 2007. The pricing on these meters is divided into three phases with a declining price structure as APS purchases additional meters.

P1D meters are initially expected to be set at a ratio of approximately 35:1 clients to hubs. This allows APS to build a redundant communications network allowing all client meters to communicate nightly in the event their hub encounters a communications failure. Using this ratio the average cost per P1D meter for this contract is identified to be less than $100 per meter.

Communication Costs:
APS signed a contract with KORE Wireless in 2005. The contract covers the transfer of data through the GPRS communications network. Ongoing monthly communication costs are expected to be approximately $0.13 per meter. This compares with the current monthly cost per meter read of approximately $0.90 using the current meter reading workforce.

Meter Installation Costs:
APS has formed a team of five field service workers to start the deployment of P1D meters in April. The cost of this team is approximately $475,000 per year including payroll loads and benefits. Based on the initial deployment strategy of implementing to multi-unit locations the cost per meter set should be significantly reduced.

Integration Costs:
An additional one time cost to integrate the P1D system into the current APS computer systems is estimated at $1,400,000. This work consisting of design, modification, testing, and installation of current APS computer systems in order to interface with the P1D system is expected to be completed in the summer of 2006.

Operational Efficiencies

AMS systems may provide many opportunities to improve operational efficiency as well as additional services for customers. APS has plans to evaluate these additional opportunities in the future. The fact that P1D meters can be read and programmed remotely to facilitate a customer rate change provides an immediate operating efficiency as well as significantly reducing the cost of implementing any new rate structures in the future.

During 2005, 767 fewer field trips were required in the AMS pilot area. These orders include transfer of service, meter exchanges for rate changes, and read verifies. The table below shows the number of field visits that were eliminated in 2005 for the meters in the AMS meters in the pilot.

YYYY/MM	Transfer of Service	Rate Change & Verify	Total
2005/01	66	2	68
2005/02	63	1	64
2005/03	86	2	88
2005/04	58	4	62
2005/05	62	1	63
2005/06	62	1	63
2005/07	90	1	91
2005/08	65	1	66
2005/09	55	3	58
2005/10	59		59
2005/11	38	1	39
2005/12	50	1	51
Total	754	18	772

Fewer trips to the field result in less mileage traveled, reduced fuel consumption, fewer emissions and possibly a reduction in vehicular accidents.

The deployment in new growth areas during the Phase II Pilot will also eliminate the need to hire additional meter readers for these areas.

During the Phase II Pilot, APS will continue to evaluate these efficiencies as well as others that may come from areas such as a reduction in revenue lost due to energy theft, outage notification, and the possibility of fewer OSHA recordable accidents in those areas where the meters are being read remotely.

Summary

In conclusion, APS has completed the Phase I pilot and is proceeding with one of the two vendors based upon the findings in that pilot. Beginning in the second quarter of 2006 deployment of the Phase II pilot will begin. The initial efforts will be concentrated on multifamily residential settings and later upon new growth areas that have the appropriate communications coverage. The next report will be submitted in September 2006.

Attachment 4
Bill Estimation and Tariff Training

Pursuant to Paragraph 33(a) of the Commission-approved Demand Estimation Settlement, all Billing Services and meter reading personnel were trained to understand that customers value an accurate bill. Billing Services training was conducted during first quarter, 2005 and meter reading training was accomplished during first quarter, 2006. In addition, this type of training has been incorporated into the plan for any new hires. APS has not only completed the training of all of the Billing Services representatives but in its effort to continually reinforce these concepts has also incorporated these same principles into the ongoing performance review of each of the Billing Services representatives.

The Billing Service Representatives are trained to recognize that the underestimation of kW and kWh may result in problems for customers included the following:

- An under-read or a low estimated billing can result in a larger than normal "catch up" bill the following month.
- Under-billings and follow up catch up billings are confusing to customers who cannot determine the reason for high usage after a low usage month
- Under-billings can create a financial hardship for customers (especially those on fixed incomes) on the larger-than-normal catch-up bill. This can lead to additional complications such as:
  1) not contacting the Company for payment arrangements,
  2) the possibility of a resulting credit collection situation, and
  3) the possibility of an increase to the Customer's security deposit.
- The implications from under-billings can discourage energy conservation.
- The Customer's Equalizer payment may get miscalculated and out of alignment.
- Under-billings and subsequent catch up billing are not consistent with the excellent customer service goals of the Company.

Further, once Schedule 8 is approved by the Commission, there are plans to develop additional computer-based training that will educate our staff on the approved estimation service schedule.

In addition to training on bill estimation issues, the Regulation and Pricing Department will continue to provide training on all tariff issues and the importance of complying with the all tariff provisions, including rate schedules. For example, the Regulation and Pricing Department conducts training when new rates are proposed or implemented or significant changes are anticipated such as unbundled pricing of services. In conjunction with training associated with Schedule 8, enhanced training on all service schedules and tariff provisions will be conducted. This training will be provided to existing employees and new hires and will include materials describing the mandatory nature of tariff provisions and the need to apply tariff provisions on a consistent basis.