

DONOVAN E. WALKER
DEPUTY ATTORNEY GENERAL
IDAHO PUBLIC UTILITIES COMMISSION
PO BOX 83720
BOISE, IDAHO 83720-0074
(208) 334-0357
IDAHO BAR NO. 5921

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IDAHO PUBLIC UTILITIES COMMISSION

Street Address for Express Mail:
472 W. WASHINGTON
BOISE, ID 83702-5983

Attorney for the Commission Staff

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE REVIEW OF)
IDAHO POWER COMPANY'S PHASE ONE) **CASE NO. IPC-E-06-1**
AMR IMPLEMENTATION STATUS REPORT.)
)
) **COMMENTS OF THE**
) **COMMISSION STAFF**
)

The Staff of the Idaho Public Utilities Commission, by and through its Attorney of record, Donovan E. Walker, Deputy Attorney General, in response to Order No. 29959, the Notice of Filing and Notice of Modified Procedure issued on January 26, 2006, respectfully submits the following comments.

BACKGROUND

On December 30, 2005, Idaho Power Company (Company, Idaho Power) filed its Phase One AMR Implementation Status Report (Report), as required by Order No. 29362, Case No. IPC-E-02-12. The Commission directed Idaho Power to collaboratively develop and submit a Phase One Advanced Meter Reading (AMR) Implementation Plan to replace current residential meters with advanced meters in selected service areas by December 2003. *Id.* The Company was also directed to complete Phase One AMR installation by December 31, 2004, and file an

AMR Phase One implementation status report by the end of 2005. *Id.* This filing is meant to comply with the directives of Order No. 29362.

STAFF REVIEW

Overview

Staff has reviewed the AMR Report filed by Idaho Power on December 30, 2005 that documents Phase One AMR Implementation in the Emmett and McCall area. The Report details the project costs and benefits, assessment of the technologies used, customer feedback, and recommendations for future AMR deployment. It is apparent that there were many difficulties encountered during the first phase of implementation. These difficulties centered on the complex technical infrastructure required by the Company and the inability for a single AMR system vendor to fulfill the Company's needs. This resulted in a small percentage of customers not being converted to AMR meters, problems with billings for time-of-use customers, and a possible setback in further AMR implementation. The Company has set forth an aggressive one-year resolution period in which it will work with its vendors to address the technical problems from Phase One. Also, this will allow the technology to mature further and provide Idaho Power representatives the opportunity to reassess their needs with new information. Following the one-year period, the Company proposes to resume the competitive bidding process for vendors and conduct a thorough financial benefit/cost analysis of AMR.

AMR Infrastructure

The AMR infrastructure installed during Phase One consisted of three separate systems necessary to facilitate and evaluate the Company's objectives: 1) the meter data collection system, which consists of the meter itself and the Two-Way Automated Communication System (TWACS) used to relay consumption data; 2) the Meter Data Management System (MDMS) needed for validating, editing, and estimating (VEE) the accumulated meter data along with aggregating billing data for time-variant pricing participants; and 3) the Nexus Energy Software used for data presentment available for AMR customers to view via the internet. The Company had to coordinate between multiple firms to achieve its AMR goals, as no single vendor could provide the necessary functionality on its own, requiring a level of coordination that may have hindered the success of Phase One.

TWACS AMR System

The Company contracted DCSI to provide the TWACS hardware, software and training, and Terasen Utility Services to oversee the installation of the AMR meters supplied by Itron, which included the TWACS meter modules installed at the factory prior to shipment. Terasen completed the installation of 23,474 meters by October 29, 2004: 10,742 in the Emmett area and 12,732 in the McCall area. Each meter has its own ID to enable the Company to communicate with it on demand. The Company indicated that it had to invoke a contractual penalty against Terasen for falling behind schedule on the installation of 6,500 meters.

Within the service area, 643 customers were not converted to AMR meters: primary service accounts (7), dairies (13), customers with Company load research meters (33), Tamarack substation customers (70), and single-phase substation customers (520) were excluded due to cost and technology restrictions. The majority of those who did not have an AMR meter installed continue to have their meter read manually. AMR meters did not work for 9 service points with irrigation pumps that utilize variable speed drives, due to overheating issues. To date, DCSI has not resolved this issue. Also, the Company has indicated that 573 AMR meters from DCSI had to be replaced for various reasons. These replacements had negligible impact on the Company's costs of installation since most problems were either covered under warranty or by the customer (21 meters were replaced due to faulty meter base connections, which is the responsibility of the customer). In addition to the AMR module, Emmett customers who participated in the A/C Cool Credit Program had a stand-alone load control transponder (LCT) device installed to cycle the air conditioning unit on and off through the TWACS system.

From the service point, the TWACS system sends customer data to and from the substation communication equipment (SCE), a communications hub where the data is stored for retrieval. The SCE also permits the Company to send information to the service point for such reasons as to cycle the customer's air conditioning equipment, if participating in the A/C Cool Credit Program. Communication between the meters and the SCE occurs via the Company's power lines. TWACS technology does not currently work with single-phase substations; the Company and DCSI are currently working to rectify that issue. The SCE is the communication link between the meters, the substation, and the TWACS Net server (TNS)- the highest level of the TWACS network which manages network communications, originates meter reading and load control applications, and collects the meter data for the TWACS database. The TNS is located at Idaho Power's Data Center in Boise. Communication links between the SCE and the

TNS can be accomplished by a number of methods, with varying levels of benefits and costs relating to the geography and density of customers. The Company experimented with 3 types of cost-effective communication links: a dial-up telephone line, "frame relay"- an intermediary telecommunication service between local networks and wide area networks, and, in the case of the McCall substation, direct linkage to the Idaho Power network. The Company has indicated that frame relay technology out-performed dial-up due to better reliability and data retrieval performance.

With the system in place, the Company collects hourly, daily, and monthly consumption data from the meter through an automated system. Hourly data is critical to facilitate time-of-use pricing programs. Data are stored in 8-hour blocks and must be retrieved within a 16-hour timeframe before old data is written over. With such a limited timeframe and a large volume of data to be retrieved, there is potential for lost hourly data, if a problem arises that cannot be resolved quickly. The Company reports a success rate for capturing hourly meter reads of 98%, with problems occurring after operating hours. The Company plans to implement a new extended memory module currently in development by DCSI within the Phase One AMR region once available to counteract this problem. It may be prudent for the Company to acquire additional resources or expand its server capacity to more reliably retrieve customer data within the necessary timeframe.

Daily meter readings are stored for 24 hours and overwritten the following day at midnight. Daily reads are used to handle billing questions and service order completion. Daily reads also help the Company estimate any missing hourly data. While the Company reports a nearly 100% success rate in capturing daily reads, the extended memory module provides added insurance for data collection as more customers are converted to AMR meters.

Monthly meter readings capture peak demand for the service point and that information is provided to the customer. Monthly reads occur on the customer's billing day, in which the peak demand is reset to zero. No failures to capture monthly meter reads were reported by the Company. In addition, the Company can initiate an on-demand reading for troubleshooting and maintenance. Due to bandwidth limitations with the communications link and the necessity of manual intervention, on-demand readings are not executed on a routine basis.

The TWACS system worked well with the LCT used to cycle air conditioning units for participants in the AC Cool Credit Program. There were errors made in the installation process

that contributed to false indications that the equipment was working properly. These were human errors that were identified in the data evaluation process, and subsequently rectified.

Meter Data Management System (MDMS)

At the Company's Data Center, the collected meter data is stored on a server and managed through MDMS software developed by Itron. The MDMS software is intended to perform a number of verification, estimation, and editing (VEE) procedures for billing and data presentment purposes. MDMS is integral to providing time-of-use billing, and filling the gaps in uncollected interval data.

The MDMS component of the AMR infrastructure has been the biggest disappointment in Phase One Implementation. The Company sought to implement an MDMS system that had not yet been developed. The Company contracted with Itron to implement an existing system that it felt could be modified to suit its needs. Modifications did not lead to the system passing the Company's VEE acceptance criteria. Specifically, missing hourly data for time-of-use customers was to be filled in through estimation algorithms using the individual's load history (as opposed to using the customer class consumption to estimate missing data, which the MDMS system was designed to do). Itron and the Company were unable to successfully modify the system to accomplish this, thus forcing the Company to manually extract, review, and enter the meter data into the billing system.

The problems that the Company has encountered over the MDMS system are the limiting factor for expanding time-variant pricing programs. The Company and Itron are currently testing an upgraded version of the MDMS software with more functionality; evaluations of the new version are forthcoming. Staff believes that the continuation of the Company's Time-Of-Day and Energy Watch Pilot Programs, as requested by the Company in Case No. IPC-E-06-05, should not be impacted by the technical problems the Company has come across given the limited scope of these Pilot Programs. Furthermore, continuation of the Pilot Programs affords the Company with an opportunity to "field test" any developments made in the MDMS system. Should the Commission agree to the Company's request to take a year to evaluate the results of Phase One, Staff recommends that the Company provide the Commission with an assessment of the suitability of the MDMS system before deciding whether to proceed with Phase Two AMR Implementation.

Nexus Energy Software

The Nexus Energy Software is the data presentment software that provides customers with energy usage data via links on the Company's website. The software also provides analytical tools to help manage energy consumption, view account information, and, importantly, estimate potential savings associated with the time-variant pricing programs. Nexus communicates with the MDMS system to provide customer level data in graphical formats. Nexus accurately displays information to customers whose demand does not exceed 300 kW, though the Company has indicated that the threshold is more in the neighborhood of 500 kW (only .38% of industrial customers have a higher demand, and therefore were unable to use this resource). Due to the large volume of data being transferred, customer information takes a long time to load, which may cause frustration on the customer's part, and a hesitation to utilize this resource.

In fact, very few customers actually viewed their usage data, much less utilized the software in deciding whether to participate in the time-variant pricing programs. Idaho Power targeted 5,000 customers for the time-variant programs, with a total of 35 customers accessing their historical usage via Nexus software. Only 24 of the 170 participants in the pricing programs accessed their historical energy usage before signing up. It is unclear what is driving the low interest in employing the Nexus Energy Software; it may be a function of the implementation area's household demographics, insufficient promotion by the Company, limitations of the software, etc. A survey contracted by the Company indicated that customers in Emmett were generally aware of the new AMR meter but unaware of the ability to view daily and hourly energy usage. (Most customers, 87% of those surveyed, prefer to receive usage analysis with their bills.) Staff would like to see a concerted effort made by the Company to improve the utilization rate of the Nexus Energy Software.

Benefits and Costs

The Company identifies \$303,000 in quantifiable annual benefits from reduced meter reading and a projected cost of \$6,859,424, or \$292 per installed meter, for Phase One Implementation. The Report acknowledges that there are additional "soft" benefits, namely those associated with improved billing accuracy, that have not been quantified. Furthermore, the Staff believes that there are additional benefits to AMR that will manifest as more customers

become aware of the technology and are able to participate in the Time-of-Use pricing programs facilitated by AMR.

The majority of the costs (85%) were incurred through the deployment of the TWACS AMR system. This includes the addition of a full-time employee equivalent needed to maintain the system under normal conditions. This addition is more than offset by the reduction of four meter specialists in the McCall and Emmett areas (totaling the \$303,000 savings previously documented). The MDMS system costs have not been finalized as of the Report's writing. This is due to the ongoing work with Itron to structure a VEE system to meet the Company's criteria. It is projected that the MDMS system will cost the Company \$770,000 for Phase One Implementation, including labor. The Nexus Energy Software is also an ongoing cost (\$234,280), with a final business version with enhanced features to be installed in 2006.

The Company reports that annual fees paid to the vendors total \$91,080 for Phase One. This number will increase, maybe substantially, as more customers are added to AMR. Itron and Nexus have contracts in which annual fees can appreciate yearly. The fees are based only on the current size of the Phase One Implementation Project, which reduces the ability to determine future costs that may accrue as more of the Company's service territory becomes saturated with AMR meters. Longer-term contracts may have been beneficial in lowering the per-meter costs of AMR. The Company should provide the Staff and Commission with more information on its plans and arrangements for future AMR deployment when providing an updated report on its Phase One problem resolution status.

The Staff would like to see more effort put forth by the Company to identify the benefits to AMR. Beyond the reduced meter-reading workforce, no other "hard" benefits were recognized. "Soft" benefits that are deemed unquantifiable at this time include improved customer service, increased billing accuracy, voltage/outage monitoring, and improved distribution planning. Some of these soft benefits will manifest into hard benefits once AMR is deployed on a larger scale (e.g. reduction in billing staff).

Next Steps

Staff continues to believe there are benefits to AMR deployment and the pricing programs AMR facilitates, but does recognize there are issues to be resolved before the Company can successfully launch the technology on a larger scale. Staff therefore supports a one-year period to address the problems from Phase One with some caveats. Staff recommends

that the Company provide a report to the Commission no later than May 1, 2007 detailing the efforts made toward problem resolution and its next steps for further AMR deployment. The report should specifically address the MDMS software, solutions to the single-phase substation issue, assessment of which ancillary services can and cannot be supported by its AMR system, and other issues outlined in its Report. What the Company and Commission decide to do next depends on the findings of the new report. The current proposal is to conduct a new competitive bidding process in 2007 based on the Company's assessments of its needs. From there, the Company will conduct an in-depth financial analysis with the continued assistance of MW Consulting to evaluate the business case for further AMR deployment. This would put continuation of AMR deployment at no earlier than 2008.

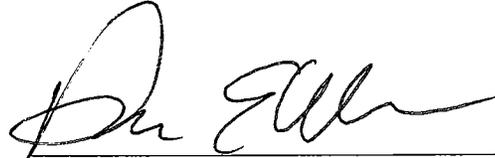
Staff would like to see AMR deployment follow logical steps based on the Company's findings, e.g. testing communications equipment in more densely populated areas as well as rural areas that are similar to the Phase One implementation area. The Company has indicated that it will remain flexible as to how and where it would continue installing AMR meters. Staff believes that certain limitations found in Phase One may not manifest in alternative service areas, such as the lack of single-phase substations and VSD motors in more urban settings. Also, implementing AMR in a more densely populated environment may allow the Company to take advantage of economies of scale. There are further opportunities for cost reduction and technological improvement given the current environment. As a specific example, DCSI has entered into a contract with PG&E in California to install an AMR infrastructure to serve nearly five million service points. A one-year period will allow the Company and Staff time to assess whether this has a beneficial impact in AMR advancement.

STAFF RECOMMENDATION

Staff recommends that the Commission accept the Company's Phase One AMR Implementation Status Report as filed on December 30, 2005. Based on the information provided in the Report and further communication between the Staff and the Company, Staff also recommends that the Commission grant a one-year period in which the Company can work to resolve its technical issues and assess further AMR deployment. This will provide an opportunity to test and evaluate the software upgrades to the MDMS system, conduct more extensive analysis of potential benefits and costs, gain more experience with Time-of-Use pricing, and address the many other issues noted in the Company's Report. Staff requests that

the Company work closely with Staff and file a new report detailing the advances that have been made in resolving problems from Phase One, and provide its assessment of how it will proceed with AMR deployment. The new report should be filed no later than May 1, 2007, so the Commission can offer its input regarding continuation of AMR deployment.

Respectfully submitted this 25th day of April 2006.



Donovan E. Walker
Deputy Attorney General

Technical Staff: Bryan Lanspery
Dave Schunke
Lynn Anderson

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT I HAVE THIS 25TH DAY OF APRIL 2006, SERVED THE FOREGOING **COMMENTS OF THE COMMISSION STAFF**, IN CASE NO. IPC-E-06-01, BY MAILING A COPY THEREOF, POSTAGE PREPAID, TO THE FOLLOWING:

BARTON L KLINE
MONICA MOEN
IDAHO POWER COMPANY
PO BOX 70
BOISE ID 83707-0070

JOHN R GALE
VICE PRESIDENT/ REGULATORY
AFFAIRS
IDAHO POWER COMPANY
PO BOX 70
BOISE ID 83707-0070



SECRETARY