Idaho Power Case facts:
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I have been with Idaho Power for more than 30 years and have spent most of my career in system protection and metering. I was the project manager for our automated metering deployment and am responsible for meter operations at Idaho Power today.

We actually deployed our first meter automation pilot in 1998. At that time were interested in automating remote locations to lower our operational cost and eliminate winter no reads.

After the western energy market issues in 2000 and 2001, our efforts turned to collecting hourly data to support energy conservation and dynamic time variant rates. We conducted a larger pilot effort in 2004 (25,000 meters from Emmett to Riggins) still focusing on cost effectiveness.

In 2008 based on the pilot findings we were ordered by the IPUC to deploy automated meter technology throughout our service territory.

After an RFP process where we looked at all current meter automation technology deployed (2008) we presented a business case to the IPUC to deploy the TWACS system. This was much different than the process for many utilities today and we found that based on our service territory and customer density radio communications did not meet our cost requirements for a positive ROI. **Our project produced a positive business case at $152 per endpoint**; the system would pay for itself in reduced O&M. Many utilities are installing systems today with costs of $500 **(BC Hydro smart meter costs more than $500**) to $750 per end point, their systems become a long term expense.

We deployed the TWACS system companywide in three years 2009 - 2011. We currently have 510,000 meters deployed on the TWACS system.

We have found that the TWACS system provided all of the desired functionality at a much lower cost than other technologies. We are providing hourly energy data for all end points, TOU rates based on hourly energy use, customer data viewing and analysis of energy data on-line, demand response at scale (35,000 endpoints), outage management enhancement, system voltage monitoring and automated connect disconnect for select locations.

The TWACS technology is meter agnostic, so we were able to choose industry proven meters with proven field performance history from leading manufacturers like GE and Landis & Gyr, and combine them with the TWACS modules. Some smart meter technologies relied on new unproven in the field meters and in many cases unproven internal service disconnects.

Idaho Power did not initially deploy internal service disconnects. However, we are currently in the process of deploying a select number of internal disconnect meters. Again we feel we have chosen a superior product that has been in service without issue for many years.

Our meters are performing as we predicted based on the GE and L&G history we are seeing after infant mortality covered by warranty about a .5% annual failure rate. The failure are by enlarge non-communication and display segments missing, failures are not catastrophic or destructive.

I'm aware of several utilities conducting mass change outs of smart meters. With 3 to 5 years of in service performance we have not experienced anything to indicate future performance issues.

Our wide area network is for the most part fiber optic. We installed broad band communications to 140 of our distribution substations, the WAN for smart metering and in many cases SCADA. From the substation we deployed meters and other devices that communicate over the power line. The system is the TWACS system from Aclara. The TWACS system communicates during the zero crossing of the AC sine wave. **Since the system communicates through the electric distribution system it reaches all of our endpoints, it is not encumbered by distance or terrain. It is a good fit for low customer density and rouged terrain.**

http://www.aclaratech.com/ACLARAPLS/Pages/TWACSAdvantages.aspx

We deal directly with Aclara who has agreements with the meter manufacturers. We buy the meters and the modules, and Aclara has GE or Landis install the modules in their factory. A little different but it works. We feel it gives us the best of both worlds, we get the meters we want and the communications technology we want even though are not from one source.

Wired Communications

Smart meters being deployed in Idaho Power's service territory do not transmit radio frequencies. Our smart meters do not use any wireless communication media or generate any high-frequency signals. Our

system uses only wired infrastructure to communicate to and from our smart meters utilizing the low-frequency 60 hertz (Hz) power line signal as the carrier for our communications.

This may be of interest because some smart meter deployments in California have raised concerns that radio transmission, wireless transmission or high-frequency transmission may pose health risks. The technology we're deploying is fundamentally different from the technologies in question in California.

Smart Meters Are Secure

Our smart meters do not communicate over public airways or the Internet. We employ cyber-security standards of encryption and isolation to ensure the integrity of the system. And we take effective precautions to protect our communication system physically. In our system, smart meter communications happen over the power line between each individual smart meter and a secure Idaho Power distribution substation. Communication utilizes proprietary, secure equipment.

There is no meter-to-meter communication. It is physically impossible for smart meters to communicate with anything other than the substation. Typically, the meters communicate with the substation four times daily to collect usage information.

Idaho Power customer data received from smart meters is secure and confidential. It is used only for Idaho Power business purposes. We do not sell customer information, and smart meters have no photo or video capabilities. Idaho Power is not installing or using remote service-disconnect capability with our smart meter system at this time.