IDAHO POWER®
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November 21, 2013

VIA ELECTRONIC FILING AND U.S. MAIL

Attention: Filing Center
Public Utility Commission of Oregon
3930 Fairview Industrial Drive SE
P.O. Box 1088
Salem, Oregon 97308-1088

Re: Docket UM 1675
In the Matter of Idaho Power Company, 2013 Annual Smart Grid Report – Idaho Power Company's Reply Comments

Dear Filing Center:

Enclosed for filing in Docket UM 1675 are an original and three (3) copies of Idaho Power Company's Reply Comments. The Reply Comments have been served on the parties to this proceeding as indicated in the Certificate of Service.

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Christa Bearry

Enclosures

1221 W. Idaho St. (83702)
P.O. Box 70
Boise, ID 83707

BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

UM 1675

In the Matter of IDAHO POWER COMPANY, 2013 Annual Smart Grid Report.	**IDAHO POWER COMPANY'S REPLY COMMENTS**

I. INTRODUCTION

Idaho Power Company ("Idaho Power" or "Company") respectfully submits these Reply Comments to the Public Utility Commission of Oregon ("Commission"). These Reply Comments respond to the Comments submitted by the Commission Staff ("Staff") and the Citizens' Utility Board of Oregon ("CUB").

II. DISCUSSION

A. Advanced Metering Infrastructure ("AMI").

Idaho Power's AMI system uses substation-based technology to provide the communication path to the endpoint meters through the Company's distribution system. The AMI system provides two-way communications to 99 percent of Idaho Power's metered retail service customers. The remaining 1 percent of metered retail service customers did not meet Idaho Power's business case requirements at the time the implementation plan was initiated,[1] to wit: an overall positive return on investment and a breakeven point for investment compared to savings in approximately seven years.

Staff's Comments expressed a desire to know if the Company plans to roll out AMI to customers who currently do not have AMI meters.[2] Idaho Power did not deploy AMI to 13 distribution substations serving approximately 1,600 customers in Oregon that were

[1] Idaho Power's 2013 Smart Grid Report, p. 13.

[2] Staff Comments, p. 2.

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located in very rural, sparsely populated areas. Because the station equipment cost is approximately $150,000 per distribution bus section, it was not cost-effective to install this equipment in stations serving less than 300 customers.

During 2012, Idaho Power tracked the cost of manual meter readings and customer movement reading in the non-AMI areas to reevaluate the cost benefit of applying the Two-Way Automatic Communication System (TWACS®) technology to automate the processes in those areas.[3] Based on the evaluation results, it continues not to be cost-effective to deploy AMI on distribution substations serving a very small number of customers; therefore, the Company has no plan for deploying AMI to customers served by non-AMI substations at this time.

Although many of the AMI benefits listed on page 13 of Idaho Power's 2013 Smart Grid Report have not been quantified or would be difficult to quantify with any precision, the Company estimates it achieves ongoing cost savings for monthly AMI meter reading, customer movement reads, and service confirmation reads that benefit customers by approximately $7.5 million annually.

B. <u>Conservation Voltage Reduction ("CVR")</u>.

In its Comments, Staff noted that it "has questions regarding the implementation timeline of the Conservation Voltage Reduction in general" and "would like to see the CVR analysis and implementation extend to all other substations . . . ."[4] Idaho Power is presently working to accurately identify the benefits and risks of expanding the CVR program to other facilities where the implementation costs are greater.

By way of background, Idaho Power participated in the Northwest Energy Efficiency Alliance ("NEEA") Distribution Efficiency Initiative ("DEI") project in 2007. Idaho Power's

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[3] Idaho Power's 2013 Smart Grid Report, Appendix D-5, p. 13.

[4] Staff Comments, p. 2.

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participation involved implementing CVR at a single substation in the Boise area. The study involved a "one day on – one day off" CVR control and measurement method. In other words, the CVR controls were used every other day so that their impact could be compared to the days where the CVR controls were off. The Company was then able to use the data from the "one day on – one day off" method to estimate a range of CVR factors for the Boise substation.

Since 2007, Idaho Power has expanded the CVR program to other substations with minimal capital expense. To date, low cost CVR implementation has involved changes to substation transformer load tap changer controller settings without end-of-line voltage monitoring. However, additional CVR implementation will require significant distribution feeder upgrades that will not be undertaken until a thorough cost-effectiveness analysis has been conducted using validated CVR factors. The CVR factors calculated in the NEEA DEI project, discussed above, were specific to the one urban substation that was involved and cannot serve as the basis for evaluation of a more expansive CVR program. Moreover, the DEI project was limited and did not account for weather influences and load characteristics representative of the entire Idaho Power system. The cost-effectiveness for any substation across the Company's service area should be based on valid CVR factors that incorporate local weather and load characteristics.

In the process of assessing available potential cost-effective CVR resources, the Company has encountered several unanticipated obstacles that delayed the process. For example, due to technological limitations, the Company was unable to measure the actual peak reduction or energy savings of the current CRV implementation. In addition, the Company has been unable to monitor actual customer voltages along the feeder. Therefore, customer voltages remain unknown during peak load or abnormal system

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configurations. During abnormal system conditions, switching the loads between CVR and non-CVR feeders adds complexity to the reliable operation of the distribution system.

In an effort to further validate CVR benefits, the Company is currently utilizing new technologies and methods of measurement that are now available to assess the energy savings and reduced peak demand. For example, by January 2014, the Company expects to have weather normalized hourly load data from 2011 and 2012. In addition, daily voltage readings for a limited number of meters are now available through the Company's AMI. The Company is also now able to better characterize load and measure actual energy and power reductions with CVR through substation meter functionality. Finally, the Company is evaluating new distributed Volt/VAr equipment that can improve a feeder voltage profile and provide a more effective implementation of CVR. The Volt/VAr Management System ("VVMS"), as described on page 25 of the Company's 2013 Smart Grid Report, can minimize the change in voltage across the distance of a feeder—thus increasing the likelihood of implementing CVR on some feeders. Additionally, VVMS has the ability to improve voltage monitoring over the entirety of the feeder, perhaps allowing a method for analyzing the effects of CVR on feeders in the future.

With the understanding that the new technologies and methods can mitigate the obstacles described above, Idaho Power intends to assess potential cost-effective CVR resources as follows:

- Validate the benefit, reduced peak demand and energy savings, of the existing CVR program before expanding it beyond the initial area;
- Analyze two existing CVR substations load characteristics, quantify CVR effects on the load, and calculate their CVR factors;
- Determine CVR factors for each geographic region of the service area;
- Pilot new Volt/VAr technologies that improve feeder voltage profiles;
- Proceed with a Volt/VAr optimization research project; and

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- Complete the existing CVR analysis by 2016 in preparation for extending the CVR measures to other Idaho Power facilities.

To identify a valid CVR factor that can be used across Idaho Power's service area, the gathering of the data will take at least 12 months to study the variation of the load during the year. The Company will consider strategies that employ more frequent cycling of CVR "on" and "off" over a broader range of load types. The analysis will provide a range of CVR factors that are applicable to different feeders in Idaho Power's service area. The CVR factors will then be used to determine the cost-effectiveness of implementing the program on the substation distribution transformers.

Idaho Power anticipates it will determine the scope and methodology of the analysis by the end of 2013. After the design and pre-construction planning is completed by mid-2014, any necessary equipment will then be purchased, configured, and installed by the end of the year 2014. Idaho Power will gather data for the full year of 2015 and, when complete, formulate analyses and conclusions in 2016.

C. Time Variant Pricing ("TVP").

Idaho Power continues to evaluate pricing strategies which send the appropriate pricing signals to customers as well as provide customers with options to help them manage their electric bills. Staff commented that it would be beneficial for Idaho Power to provide in the report additional information related to the time-variant pricing offerings "such as a timeline with key dates and milestones for expanding TVP offerings to all customers . . . ."[5]

Idaho Power is currently conducting an analysis of the time-of-day ("TOD") pilot program[6] to study participant behavior modifications and evaluate potential revenue impacts. The results of this analysis are expected at the end of 2014. The next steps for

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[5] *Id.*

[6] Idaho Power's 2013 Smart Grid Report, pp. 14 and 25.

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the TOD pricing plan will be determined after the completion of the study. Idaho Power continues to evaluate the potential value of offering a critical peak pricing rate plan, as well as offering a seasonal pricing structure for Oregon residential customers.

D. Customer Relationship Management ("CRM") and Outage Management Systems ("OMS").

In addition to TVP, Staff commented that it would be beneficial for Idaho Power to provide in the report additional information "such as a timeline with key dates and milestones for . . . implementation of the Customer Relationship Management ('CRM') system, for replacing the current Outage Management System ('OMS'), and for integration of the OMS and AMI."[7]

As described on pages 21-22 of the 2013 Smart Grid Report, the CRM system will pull data from a variety of centralized data sources (hourly and monthly meter usage data, customer information, demographics, program data, etc.) with the ability to query/report both on a formal and *ad hoc* basis. This system will allow Idaho Power to manage and track energy efficiency and customer relations with the ultimate goal of increasing the effectiveness of the Company's energy efficiency efforts while promoting use of its Account Manager tool. Idaho Power presently plans to implement the CRM system in 2015. Leading up to that date, the Company will follow its prescribed process of prioritizing information technology requests during 2014. During the fourth quarter of 2014, the Company's CRM project sponsors will refresh and assess the CRM requirements, including acquired knowledge and experience of working within the new Customer Relationship and Billing system that became operational on September 1, 2013. Based on its prioritization and updated evaluation of requirements, the Company will then assess its next steps for implementation.

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[7] Staff Comments, p. 2.

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Since 2010 when Idaho Power initiated the OMS replacement project, significant technology advancements in the area of distribution automation and network management systems have occurred and the project was suspended in 2012. Idaho Power's plan is to begin a new project in 2014 evaluating technology advancements and developing a roadmap toward a more comprehensive distribution network management system, which will include an OMS component. Idaho Power estimates a two-year effort to select, develop, and implement an integrated replacement of its existing OMS beginning late in 2014 and ending in 2016.

In the interim, Idaho Power has developed and implemented integration between the existing AMI system and the existing OMS. This integration allows Idaho Power to use the pinging capability of the AMI system with the identification of service points involved in a potential outage as identified in the OMS. Currently, this is a partially manual process; however, an automated integration is a desired outcome at completion of the new OMS replacement project. This is aligned with Idaho Power's original vision as described in Appendix D-5, page 13, of its 2013 Smart Grid Report.

E. <u>Appendix B – Status of Smart Grid Initiatives</u>.

Regarding Appendix B, Status of Smart Grid Initiatives, Staff encouraged Idaho Power to provide additional information "about specific expected start and completion dates for all initiatives qualified as ongoing, under development, under evaluation, planned or in pilot status" to provide "a better understanding about the magnitude of the smart grid initiatives already accomplished compared to those to be completed."[8] In response to Staff's feedback, Idaho Power has added two columns to its revised Appendix B, which can be found as Attachment 1 to these Reply Comments. Revised Appendix B reflects Idaho Power's current estimates of expected start and completion dates where available.

[8] Staff Comments, p. 2.

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F. Smart Grid Investments in Integrated Resource Planning.

Although Idaho Power did not include a specific section on smart grid in its 2013 Integrated Resource Plan ("IRP"), smart grid related activities such as CVR and the impact on demand response programs are accounted for in the IRP. Currently, smart grid benefits are not of a scale that would impact resource planning; however, Idaho Power intends to discuss its smart grid initiatives with the 2015 IRP Advisory Council to gather stakeholder feedback. In addition, Idaho Power plans to include a summary of the discussion of smart grid with the IRP Advisory Council in its 2015 IRP.

III. CONCLUSION

The Company appreciates the opportunity to file these Reply Comments and respond to concerns and issues raised by Staff and CUB. The Company requests that the Commission accept its 2013 Smart Grid Report as having met the requirements of Order No. 12-158 established in UM 1460.

Respectfully submitted this 21st day of November 2013.

Lisa D. Nordstrom

LISA D. NORDSTROM
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CERTIFICATE OF SERVICE

UM 1675

I hereby certify that on November 21, 2013, I served a true and correct copy of IDAHO POWER COMPANY'S REPLY COMMENTS upon the following named parties by e-mail, as all parties have waived paper service.

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BEFORE THE PUBLIC UTILITY COMMISSION
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IDAHO POWER COMPANY

Attachment 1 to Reply Comments

Revised Appendix B – Status of Smart Grid Initiatives

November 21, 2013

STATUS OF SMART GRID INITIATIVES

II. STATUS OF CURRENT SMART-GRID INVESTMENTS	STATUS	START DATE	COMPLETION DATE
A. Transmission Network and Operations Enhancements			
Transmission Situational Awareness Project	Complete/In Use		
Available Transmission Capacity Calculation Tool	In Use/Under Development	2011	2014
Dynamic Line Rating Pilot	Pilot/Under Development	2010	2014
B. Substation and Distribution Network and Operations Enhancements			
Transmission Transformer Geomagnetic Disturbance Monitoring	In Use/Under Development	2012	2014
Conservation Voltage Reduction	In Use/Under Development	2006	2016
C. Customer Information and Demand-Side Management Enhancements			
Advanced Metering Infrastructure	Complete/In Use		
Customer Information System Replacement	Complete/In Use		
Time Variant Pricing	Pilot	2012	2014
Energy Use Advising Tool	Complete/In Use		
Direct Load Control			
A/C Cool Credit	Ongoing	See Ongoing note below	
Irrigation Load Control	Ongoing	See Ongoing note below	
Irrigation Peak Rewards	Ongoing	See Ongoing note below	
D. Distributed Resource and Renewable Resource Enhancements			
Renewable Resources: Renewable Integration Tool (RIT)	Complete/In Use		
Current Distributed Resources on Idaho Power System	Ongoing	See Ongoing note below	
E. General Business Enhancements			
Advanced Metering Infrastructure Communications	Complete/In Use		
Enterprise Data Warehouse	Under Development	Already Started	TBD

III. FUTURE SMART-GRID INVESTMENTS	STATUS	START DATE	COMPLETION DATE
A. Transmission Network and Operations Enhancements			
Transmission Situational Awareness Oscillation Monitoring Pilot	Pilot/Under Development	2012	2015
Transmission Situational Awareness Voltage Stability Monitoring Pilot	Pilot/Under Development	2012	2015
B. Substation and Distribution Network and Operations Enhancements			
Substation Fiber-Based Protection and Control Pilot	Pilot/Under Development	2013	2015
C. Customer Information and Demand-Side Management Enhancements			
Customer Relationship Management	Planned	Tentative Q2-2015	Q4-2015
D. Distributed Resource and Renewable Resource Enhancements			
Renewable Integration Tool (RIT): potential future projects	Under Evaluation	TBD	TBD
E. General Business Enhancements			
Implementation of Automated Connect/Disconnect through the AMI System	Planned	1/1/2014	3/1/2015
Implement Additional AMI Outage Scoping and Restoration Confirmation Functionality	Under Evaluation	Q3-2014	Q2-2016
Ability of the AMI System to Control Line Devices	Under Evaluation	TBD	TBD
Replace the Existing Outage Management System	Planned	Q3-2014	Q2-2016
Upgrade the Mobile Workforce Management System	Planned	2015	2015
IV. SMART-GRID OPPORTUNITIES AND CONSTRAINTS			
A. Transmission Network and Operations Enhancements			
Hourly Customer Usage Data	Ongoing	See Ongoing note below	
Future Time Variant Pricing	Under Evaluation	TBD	TBD
Home Area Network	Under Evaluation	TBD	TBD
B. Evaluations and Assessments of Smart-Grid Technologies			
PV and Feeder Peak Demand Alignment Pilot	Pilot/Under Development	2012	2014
Volt/VAr Management Technology Evaluation	Under Evaluation	2013	2014

C. General Customer Outreach and Education	STATUS	START DATE	COMPLETION DATE
Events	Ongoing	See Ongoing note below	
Communications	Ongoing	See Ongoing note below	
Electric Vehicles	Ongoing	See Ongoing note below	

Key:

- **Complete/In Use** – a project that was completed and is now being used
- **Ongoing** – did not necessarily start as a project but rather as a general effort or program and is now being used or offered to customers on an ongoing basis. Under this designation projects have already started and have no completion date because they are ongoing.
- **Under Development** – for projects that are not complete at this time
- **Pilot** – a limited scope installation to prove the technology application in the Idaho Power system
- **Planned** – initiative that is included in five-year plan and budget
- **Under Evaluation** – the technology or concept is being evaluated and is not at the planned or pilot stage yet
- **TBD** – to be determined