

ORIGINAL

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STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF INDIANAPOLIS )  
POWER & LIGHT COMPANY REQUESTING )  
THE INDIANA UTILITY REGULATORY )  
COMMISSION TO APPROVE AN )  
ALTERNATIVE REGULATORY PLAN )  
PURSUANT TO IND. CODE § 8-1-2.5-1, *ET SEQ.*, )  
FOR THE OFFERING OF ENERGY )  
EFFICIENCY CONSERVATION, DEMAND )  
RESPONSE AND DEMAND-SIDE )  
MANAGEMENT PROGRAMS AND )  
ASSOCIATED RATE TREATMENT )  
INCLUDING INCENTIVES IN ACCORDANCE )  
WITH IND. CODE §§ 8-1-2.5-1 *ET SEQ.* AND 8-1- )  
2-42(a); AUTHORITY TO DEFER PROGRAM )  
COSTS ASSOCIATED WITH ITS ENERGY )  
EFFICIENCY PORTFOLIO PROGRAMS; )  
AUTHORITY TO IMPLEMENT NEW AND )  
ENHANCED ENERGY PROGRAMS AND )  
APPROVAL OF MODIFICATION OF THE )  
FUEL ADJUSTMENT CLAUSE EARNINGS )  
AND EXPENSE TESTS. )

CAUSE NO. 43623

PHASE II ORDER

APPROVED: FEB 1 0 2010

BY THE COMMISSION:

David E. Ziegner, Commissioner  
Loraine L. Seyfried, Administrative Law Judge

On December 29, 2008, Indianapolis Power & Light Company (“Petitioner,” “IPL,” or “Company”) filed its Verified Petition with the Indiana Utility Regulatory Commission (“Commission”) for approval of an alternative regulatory plan for the offering of energy efficiency conservation, demand response and demand-side management (“DSM”) programs and associated rate treatment; authority to defer program costs associated with its energy efficiency portfolio programs; authority to implement new and enhanced energy programs; and approval of modification of its fuel adjustment clause (“FAC”) earnings and expense tests.

IPL proposed a DSM plan to be considered in two phases. In Phase I of this proceeding, IPL requested approval of a portfolio of cost effective DSM and load control programs, with appropriate cost recovery and ratemaking treatment. IPL requested approval of performance incentives designed to support achieving program participation and savings, and requested that such incentives, if obtained, be excluded from the FAC earnings and expense tests in order to preserve the intention of creating and retaining an incentive opportunity. IPL also requested authorization to defer for future recovery any costs that it incurs to implement its proposed DSM plan prior to the time that the Commission issues an order providing recovery of such prudently

incurred costs. Additionally in Phase I, IPL sought to defer, for recovery following their completion through Standard Contract Rider No. 22, the costs of a proof of concept (“POC”) to test Home Area Network (“HAN”) systems and a Time-of-use (“TOU”) pricing study. The foregoing are herein referred to as the “Phase I DSM Program.”

A public hearing was held in Phase I of this proceeding on June 25, 2009. During the Phase I evidentiary hearing, IPL witnesses confirmed that Phase II would be initiated by IPL’s planned filing and that a full procedural schedule would be established to afford all interested parties a chance to conduct full discovery, prefile testimony and participate in an evidentiary hearing on IPL’s Advanced Metering Infrastructure (“AMI”) deployment plans and related cost recovery and other issues. IPL expressly acknowledged that all interested persons reserve their rights to object to and oppose any relief IPL requests in Phase II of this proceeding. With the procedural commitments IPL’s witnesses made at the evidentiary hearing, the OUCC withdrew its earlier objection to addressing Phase II issues in a separate phase of this proceeding, rather than requiring a new docket to be opened. On July 20, 2009, Petitioner, the OUCC and Industrial Group filed a Submission of Agreed Procedural Schedule and Request for Prehearing Conference for Phase II of this proceeding, which was granted by Docket Entry dated July 22, 2009.

On August 4, 2009, the Commission conducted a Prehearing Conference and Preliminary Hearing in Phase II of this Cause. Petitioner, the OUCC and the Industrial Group appeared and participated at the Prehearing Conference. On August 5, 2009, the Commission issued its Prehearing Conference Order establishing the schedule and other procedural requirements for Phase II of this Cause. In its Prehearing Conference Order, the Commission stated its intent that its Prehearing Conference Order satisfies the Funding Opportunity Announcement application requirement “for correspondence from the relevant regulatory agency indicating when the approval process will begin and outlining the likely timeline.”

IPL’s Phase II DSM program includes deployment of an AMI system, including replacement of the meters for all demand rate Commercial & Industrial (“C&I”) customers and up to 22,000 Residential and Small C&I customers. IPL is also proposing to deploy HANs for as many as 22,000 Residential and Small C&I customers. IPL’s proposal also includes a request to install systems necessary to process the increased level of data and to facilitate a more timely flow of information between IPL and its customers, as well as Customer Energy Management (“CEM”) tools for all customers. The CEM tools will allow all IPL customers with Automated Meter Reading (“AMR”), even those without a HAN, to gain access to energy consumption information on a one-day delay via the internet. The foregoing are herein referred to as the “Phase II DSM Program.”

In accordance with the procedural schedule set forth in the Phase II Prehearing Conference Order, Petitioner filed its direct testimony and exhibits constituting its case-in-chief on August 5, 2009. On October 16, 2009, the Indiana Office of Utility Consumer Counselor (“OUCC”) and the IPL Industrial Group (“Industrial Group”) filed their direct testimony and exhibits constituting their respective cases-in-chief. On November 6, 2009, Petitioner filed its rebuttal testimony and exhibits. Pursuant to public notice duly given and published, a public hearing was held in Phase II of this proceeding on November 20, 2009. At the hearing IPL, the OUCC, and Industrial Group appeared by counsel and the parties offered their respective prefiled

testimony and exhibits which were admitted into evidence without objection. No other party or member of the general public appeared.

Based upon the applicable law and the evidence of record, the Commission now finds:

1. **Notice and Jurisdiction.** Proper notice of the hearing in this Cause was given as required by law. IPL is a “public utility” within the meaning of Ind. Code § 8-1-2-1 of the Public Service Commission Act, as amended, and is subject to the jurisdiction of the Commission. The Commission has jurisdiction over Petitioner and the subject matter of this Cause in the manner and to the extent provided by the laws of the State of Indiana.

2. **Petitioner’s Organization and Business.** Petitioner is an operating public utility, incorporated under the laws of the State of Indiana, with its principal office and place of business in the City of Indianapolis, Indiana. Petitioner is subject to regulation by the Commission in the manner and to the extent provided by the laws of the State of Indiana. IPL renders retail electric utility service to approximately 470,000 retail customers located principally in and near the City of Indianapolis, Indiana, and in portions of the following Indiana counties: Boone, Hamilton, Hancock, Hendricks, Johnson, Marion, Morgan, Owen, Putnam and Shelby Counties. IPL owns, operates, manages and controls electric generating, transmission and distribution plant, property and equipment and related facilities, which are used and useful for the convenience of the public in the production, transmission, delivery and furnishing of electric energy, heat, light and power. As defined in Ind. Code § 8-1-2.5-2, IPL is an Energy Utility and its electric service constitutes Retail Energy Service as defined in Ind. Code § 8-1-2.5-3. By its Verified Petition, IPL elects to become subject to the provisions of Ind. Code §§ 8-1-2.5-5 and 8-1-2.5-6 for purposes of offering energy efficiency conservation, demand response and DSM programs.

3. **Petitioner’s Case-in-Chief Testimony.**

A. **Ken Flora.** Ken Flora, Director, Regulatory Affairs of IPL, stated that IPL’s “vision” for Advanced DSM is to provide customers with more timely energy consumption information and to automatically control devices in the home to improve demand response and energy efficiency capabilities. He stated that at the forefront of this vision is the optimization of existing assets, where possible, and the deployment of new technology, including an AMI communication system. He stated the AMI system will create a foundation the Company can build upon in the future to provide demand response, time-based pricing, improve outage information and facilitate the integration of distributed generation. He stated that an advanced communication system will also provide operational benefits through the use of distribution automation (“DA”) equipment.

Mr. Flora stated the Advanced DSM technology proposed in the Phase II DSM Program will enable new products, services and markets, some of which are only conceptual at this point. He stated to accomplish these objectives, IPL is proposing to deploy an AMI system including replacement of the meters for all demand rate C&I customers and up to 22,000 Residential and Small C&I customers. He stated the Company is also proposing to deploy HANs for as many as 22,000 Residential and Small C&I customers. Mr. Flora noted that IPL proposed in Phase I of this proceeding to test HANs for a limited number of Residential customers using its existing

AMR system and that if the test is approved, and assuming it is successful, the AMR system will be used to support a significant portion of the 22,000 HANs. He stated that other HANs, especially those at customer premises without broadband connections, would be supported by the newly deployed AMI system. Mr. Flora stated the Company's proposal also includes a request to install systems necessary to process the increased level of data and to facilitate a more timely flow of information between IPL and its customers, as well as CEM tools for all customers. He stated that CEM tools will allow all IPL customers with AMR, even those without a HAN, to gain access to energy consumption information on a one-day delay via the internet.

Mr. Flora stated that in Phase I of this proceeding, IPL proposed to defer the cost of a TOU study and implementation costs. He stated that if approved as part of its Phase I request, IPL will conduct a TOU study and begin to implement the billing system changes necessary to accommodate TOU rates. He stated that upon completion of the TOU study, IPL will seek approval from the Commission for TOU pricing tariff(s), ideally, to be in place prior to the summer of 2010.

Mr. Flora stated an additional objective is to mitigate the rate impact to customers while at the same time take a significant step forward to deploy and realize near term benefits from this technology. He stated that IPL's proposed plan will mitigate the rate impact to its customers through (1) the phase-in of AMI; (2) the amortization of costs over a five-year period; and (3) potentially through the use of Stimulus Funding.

Mr. Flora described IPL's efforts to obtain funding from the Department of Energy ("DOE") Smart Grid Investment Grant ("SGIG") created by the American Recovery and Reinvestment Act ("ARRA") ("Stimulus Funding"). He stated that IPL recognized the opportunity to apply for Stimulus Funding following the enactment of the ARRA earlier this year and reevaluated its plan for Advanced DSM. He stated that IPL due diligence teams developed an Advanced DSM proposal that meets the objectives addressed above and that is consistent with the DOE's requirements for funding awards. He stated the Company plans to file for a SGIG from the DOE on or before the first filing deadline of August 6, 2009. Mr. Flora noted that while subsequent SGIG application rounds are planned by the DOE, there is no guarantee that funding will be available beyond the first round and that if awarded, these funds would significantly reduce the cost of IPL's proposed Advanced DSM plan and mitigate the rate impact to its customers.

Mr. Flora described IPL's request to obtain Stimulus Funding. He stated the guidelines for the DOE SGIG matching grant program include a differentiation between small and large projects. He stated that recipients of small project grants may receive between \$300,000 and \$20 million based upon up to a 50% match for project expenditures, while recipients of large project grants may receive funding ranging from \$20 million up to \$200 million. Mr. Flora stated that IPL intends to file its SGIG application described as its "Smart Energy Project" under the small project classification, to include both the Advanced DSM program components described above, as well as a DA component. He stated IPL will be seeking up to \$20 million with funding priority placed on the Advanced DSM components (estimated to include funding of \$13 million when applied to 50% of the Advanced DSM expenditures) with the remaining funding applied to the DA component of the Smart Energy Project. Mr. Flora stated the DA equipment is not

directly related to DSM, and therefore, is not included in this DSM proceeding, although IPL's customers will realize near-term benefits from its installation if Stimulus Funding is received.

Mr. Flora stated IPL was one of the first utilities in the Country to deploy an AMR system for virtually all of its energy-only metered customers. He stated that this AMR system allows IPL to continue to automatically read meters and potentially to provide real-time information to these energy-only customers through the use of HAN technology. He stated IPL's proposed test of HAN technology with its AMR system will utilize a broadband connection to provide the necessary communication link between IPL and its customers. Mr. Flora pointed out that in its 2008 Regulatory Flexibility Report to the Indiana General Assembly, the Commission included a series of discussions about broadband communications and their potential application for providing information to customers. Mr. Flora stated that IPL is seeking approval of its Phase II DSM Program to optimize existing assets through broadband connections.

Mr. Flora stated there are additional benefits to IPL's customers that would result from an AMI system, such as an accelerated deployment of energy efficiency and demand response programs through the superior Evaluation, Measurement and Verification ("EM&V") capabilities of AMI. Mr. Flora cited to a June 2008 Electric Power Research Institute article titled, "The Green Grid: Energy Savings and Carbon Emissions Reductions Enabled by a Smart Grid" to support his statement.

Mr. Flora stated there will be other operational benefits that will result from an upgrade to AMI, including improved integration with outage management systems and asset optimization. He stated that the replacement of a significant number of standard energy-only meters with two-way meters that have the capability of providing 15 minute interval data will improve IPL's load research information. Mr. Flora noted that currently, IPL relies on limited samples taken from load profile meters installed on Residential and Small C&I customer services.

Mr. Flora described IPL's proposal for cost recovery for its Phase II DSM Program. He stated that IPL is proposing a five year recovery of the Advanced DSM program costs, including a return on the unamortized expenditures and lost revenues/margins. He stated that lost revenues resulting from decreased kilowatt-hour ("kWh") consumption and kilowatt ("kW") demand from program measure adoption will continue for a 10-year period following installation. He stated the proposed cost recovery mechanism for Advanced DSM would remain in effect until all costs are properly recovered from customers.

Mr. Flora explained IPL's rationale for seeking recovery of lost revenues for its Phase II DSM Program. He stated that lost revenues should be recoverable for any cost-effective DSM. He stated that DSM programs can take many different forms, but still have similar positive consequences, including reduced need to build generation, reduced emissions, and less reliance on fossil fuels. Mr. Flora stated that by their nature, however, DSM programs encourage customers to decrease their usage and lowered usage leads to lower utility revenue and impacts a utility's ability to cover its fixed costs. He stated that recovery of lost revenues addresses this concern and it should not be overlooked, even if the DSM measures rely on advanced technologies like AMI. Mr. Flora stated that IPL is not seeking recovery of any costs, including

lost margins, associated with the DA equipment, nor is IPL seeking any performance incentives for its Phase II DSM Program.

Mr. Flora opined that Commission approval of IPL's Phase II DSM Program would serve the public interest. He pointed out that IPL's Phase II DSM Program is consistent with the Commission's definition for DSM at 170 IAC 4-8-1. He stated that IPL's Phase II DSM Program promotes the efficient use of energy by better aligning the Company's interests with those of its customers and is also responsive to technological and operating challenges faced by IPL resulting from initiatives to decrease carbon emissions from generating units. Mr. Flora stated that DSM provides an alternative to supply-side resources at a time of rising construction and generating costs. He stated that the meters will also accommodate net-metering for distributed generation including the growing interest from customers who want to install alternative technologies like wind and solar systems but still receive electric service from IPL for the energy their systems cannot provide.

Mr. Flora stated that there are other environmental rules or legislation being considered that supports the implementation of DSM. He stated the Environmental Protection Agency ("EPA") is currently under a court mandate to issue new rules that will require additional reductions for nitrogen oxide ("NOx") and sulfur dioxide ("SO<sub>2</sub>"). He stated that in addition to NOx and SO<sub>2</sub>, EPA is also under a court mandate to reissue rules requiring the reduction of mercury emissions. Mr. Flora also stated that EPA recently promulgated new requirements for cooling water intake structures requiring existing systems to meet "the best technology available" to minimize aquatic impacts and that these regulations will likely require expensive retrofits in the next five years for existing coal-fired facilities. Mr. Flora stated that all of these new environmental restrictions will increase the cost of electricity generated from coal and make cost effective DSM alternatives even more attractive.

Mr. Flora stated that he is familiar with the State's articulated policies on energy efficiency and alternative pricing mechanisms. He stated that the State of Indiana through the Indiana Office of Energy & Defense Development established the Hoosier Home Grown Energy Strategic Plan that encourages energy efficiency measures ("Strategic Plan"). The Strategic Plan supports alternative pricing regulatory mechanisms that encourage utilities to promote efficiency and conservation by their customers without the utilities, themselves, incurring negative financial results. He stated that IPL's Phase II DSM Program, specifically the provision of more timely energy and demand consumption information, will facilitate the offering of time-based rates.

Mr. Flora stated that IPL is, has been and will continue to be, an active participant in both phases of the Commission's DSM investigation in Cause No. 42693, which includes the issue of Smart Grid technologies and advanced rate design. Mr. Flora stated that IPL's Phase II DSM Program includes both Smart Grid technology and advanced rate design through its proposal to move to AMI and study time-based pricing for a future request to offer time-based rates. Mr. Flora also noted that he sponsored the joint testimony of several Indiana utilities (Utilities' Jt. Ex. 1 at 32) in Cause No. 43580, the Commission's investigation into Smart Grid technology, which provided that, "large investments in advanced technologies are necessary in order for Indiana electric customers to benefit from a Smart Grid system. Such investments cannot be made until utilities are assured of their ability to earn a return on and to recover their investments

in a timely manner, including any remaining investment in facilities rendered obsolete as a result of the utility's Smart Grid investments.”

Mr. Flora stated that he is also familiar with the Energy Independence and Security Act of 2007 (“EISA”). He stated that this Act amended the Public Utility Regulatory Policies Act of 1978 (“PURPA”) (as amended by Section 1252 of the Energy Policy Act of 2005), adding two new PURPA standards addressing inclusion of energy efficiency options in utilities’ Integrated Resource Planning (“IRP”) and rate design modifications to promote energy efficiency investments. Section 532 of the EISA requires utilities, as part of their IRP process, to adopt policies making cost-effective energy efficiency a priority resource. On rate design issues, the EISA states that rates should align utility incentives with the delivery of cost-effective energy efficiency and promote energy efficiency investments.

Mr. Flora stated that IPL took EISA into account when developing its Phase II DSM Program. He stated that IPL is proposing an AMI system that will enable near real time communication for all of IPL’s demand rate customers and for up to 22,000 Residential and Small C&I customers. In addition, the proposed CEM tools will provide data usage information on a one-day delay basis for all AMR customers via the internet.

Mr. Flora described recent actions regarding energy legislation. He stated that on June 28, 2009, the House of Representatives passed the American Clean Energy and Security Act. He stated that the bill contains three key provisions: (1) requires electric utilities to meet 20% of their electricity demand through renewable energy sources and energy efficiency by 2020, of which one-fourth can be met with electricity savings from energy efficiency; (2) mandates new energy-efficiency standards for buildings, appliances and industry; and (3) requires reductions in carbon emissions from major U.S. sources by 17% by 2020 and over 80% by 2050 compared to 2005 levels. He stated the U.S. Senate is expected to consider its own version of climate change legislation later in the year.

Mr. Flora stated that he considers IPL’s Phase II DSM Program a prudent step to help address proposed energy legislation. He stated that federal energy bills have been debated in both the House and Senate and it is clear that these issues are gaining momentum with policy makers. He stated that if IPL’s proposed DSM programs in both Phase I and II of this Cause are approved by this Commission, IPL estimates that an approximate 0.7% reduction in annual kWh sales will result by the end of 2012. He stated that this significant step forward will position IPL for future actions that build upon the Company’s commitment to deploy and expand cost-effective DSM.

Mr. Flora discussed the financial impact of offering DSM programs. He stated that the Company’s ability to attract capital largely depends on its financial performance. He stated that in recognition of the inherent impact DSM has on the Company’s financial performance, which could be viewed negatively by the financial community, IPL’s Phase II DSM Program is accompanied by rate design that provides the necessary financial support for IPL’s on-going commitment to DSM. He stated the recovery of lost revenues and the timely recovery of costs including a return, positions IPL to better compete for capital. Mr. Flora stated that absent such regulatory treatment, IPL would be faced with a DSM effort that may harm future financial performance.

In conclusion, Mr. Flora stated that IPL's proposed Phase II DSM Program builds upon the leadership position already established by IPL through advanced technology deployment. It leverages existing AMR assets and introduces new technology with the installation of an AMI system to provide timely energy consumption information and automatically control devices in the home to improve demand response and energy efficiency capabilities. He stated that providing customers with new tools and more timely energy consumption information will allow them to make informed energy decisions to better manage their monthly electric bills. He concluded that the AMI system will also create a foundation that IPL can build upon in the future to expand demand response programs, provide time-based pricing, integrate distributed generation and improve outage restoration, all to better serve its customers.

B. Joan M. Soller. Joan M. Soller, Senior Regulatory Analyst of IPL, provided a high-level description of the proposed Advanced DSM solution. She stated that the Advanced DSM solution includes multiple systems and vendors to collect, transmit, translate, bill, store and present meter data. Ms. Soller addressed the technology, costs, interoperability and cyber security considerations for system design and deployment information.

Ms. Soller described the technology in the proposed Advanced DSM plan. She stated that an AMI backbone, the cornerstone technology, will utilize an unlicensed 900 Megahertz ("MHz") radio system which is linked to IPL's telecommunication system at access points to access an internet protocol ("IP") based wide area network "cloud" to the AMI server. She stated specific advanced meters equipped with communication modules will be installed at customer locations to collect and transmit the data; the AMI data will be integrated to a data repository known as a Meter Data Management ("MDM") system; and the MDM system will integrate several key software systems including the Customer Accounting System ("CAS") for billing, energy usage data presentation software and the Outage Management System ("OMS").

Ms. Soller stated IPL plans to enhance DSM Customer Services and Systems as part of this Advanced DSM plan. She stated the installation of an MDM system will allow IPL to store daily readings from the existing AMR system and integrate the data to CEM web-based tools for the approximate 460,000 energy-only metered customers on a one-day delay. She noted that IPL currently offers demand metered C&I customers access to billing data on a one-month delay through an ancillary MV90 data presentation software tool which is branded as "PowerView".<sup>1</sup> She stated IPL plans to offer enhanced CEM tools which minimize the data latency, or the time delay between when energy is consumed and information is presented to customers about that consumption, and allow C&I customers with more than one facility to aggregate their usage information.

Ms. Soller stated the final part of the Advanced DSM solution includes the phased deployment of energy-only AMI meters and HAN equipment to provide 15-minute interval energy usage data and enable time varying pricing. She noted that in Phase I of this proceeding, IPL proposed a limited HAN test to determine the feasibility of using AMR meters coupled with customer broadband service to complete a feedback loop to internet based data transmission to a customer web-portal and IPL. She stated that if the test is approved and successful, HAN

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<sup>1</sup> Approximately 175 C&I customers utilize this service which Witness Bentley discussed in Phase I of this proceeding.

equipment may be supported by either AMR (if customers have broadband service) or AMI (if customers do not have broadband service and are located in specific geographic areas where AMI is deployed).

Ms. Soller described the components included in the Advanced DSM project costs. She stated that estimated costs totaling \$25.9 million are grouped by AMI, MDM and Customer Services and Systems categories. She stated the costs to install communication infrastructure including data relays, access points, backhaul telecommunication system interconnection, meters, software implementation and project management comprise the AMI portion of the project; MDM installation and integration costs comprise the second portion of the project, while the Customer Services and Systems include HAN and CEM related costs. Ms. Soller provided the confidential cost information in her workpapers. Ms. Soller explained how the AMI costs for the backbone and demand meters compared to those included in Phase I of the proceeding. She stated that the estimated costs based on the preliminary design for these two components alone are slightly higher (less than 3%) than the high-level estimates provided in the Phase I proceeding.

Ms. Soller described how the systems will interoperate. She explained that meter data that is collected from AMI meters and transmitted through the collection network will be delivered to IPL for integration into the MDM system. The MDM system will process the information for billing and send it to the CAS system and the MDM will link to data presentation software and other operational systems within IPL.

Ms. Soller stated that IPL believes interoperability and strong cyber security practices are essential to project success. IPL employs specific cyber-security business practices and procedures and is working closely with vendors to assure that current and proposed Smart Grid standards and procedures are employed. She stated that IPL has a dedicated staff including a Certified Information Systems Security Professional to ensure that cyber security is maintained at each stage of system deployment. IPL Enterprise Information Services (“EIS”) tests and updates its security plan to mitigate any foreseen threats to key infrastructure components. She stated that IPL monitors and protects its network on a 24/7 basis with intrusion prevention systems to identify any malicious activity targeting or originating from corporate assets, including outside attempts to gain access to the system. Alarms are received based on the “threat” and the corresponding instructions from the notification protocol. She noted that IPL generates quarterly reports and maintains the ability to run ad hoc reports at any time.

Ms. Soller stated that IPL’s externally facing network and servers are monitored continually and any base-line changes produce a high priority alert notification to EIS Operations and EIS Security, as per the notification protocol. Solid change control practices as well as non-repudiation and data validation are part of the daily routine. She stated that IPL’s existing Energy Control System complies with North American Electric Reliability Corporation standards for cyber security. She stated that proposed implementations affect equipment and circuits below the voltage and capacity thresholds of the Critical Infrastructure Protection requirements. Ms. Soller stated that IPL will continue to comply with future requirements. She stated that the Electric Power Research Institute’s recently published “Report to National Institute of Standards and Technology (“NIST”) on the Smart Grid Interoperability Standards Roadmap” includes a comprehensive listing of standards potentially applicable to Smart Grid devices and systems.

The key factors determining how well a system supports, adopts and implements emerging smart grid standards include secure upgradability, flexibility and scalability.

Ms. Soller stated that upgradability ensures that any enhancements to the security (and other functional) capabilities are deployable to every end-point in the field without risk of sabotage; flexibility refers to the ease of implementing the changes in design and controls (applies to both hardware and software even though hardware is typically far less flexible than software); and finally, scalability refers to the ability to modify existing and planned end-points within a reasonable time and cost. She stated that while many of the Smart Grid standards are in various stages of development, IPL recognizes their importance and sought input during the vendor evaluation/due diligence process. Ms. Soller explained the cyber security evaluation criteria included verification that a potential vendor has a Business Continuation Policy and system replication in place in the event of a major disaster at the host site and recommendations for IPL; that reasonable Change Management processes are in place; and that IPL can audit their systems at anytime during business hours at the host-site.

Ms. Soller stated that IPL also sought vendors who could commit to physical equipment security and utilize open protocols and standards to support interoperable system components wherever possible. She stated that vendor participation in the ongoing NIST Smart Grid standards process was seen as a plus and that the selected vendors included these commitments in letters of support that would be filed with the IPL Smart Energy Project DOE grant application. Ms. Soller stated that while some customization is required to interface to legacy systems, the selected vendors utilize standards-based security features of application servers versus proprietary methods to quickly adapt through configuration to new requirements as they unfold and become adopted standards.

Ms. Soller stated the AMI vendor has assured IPL that it provides ample networking bandwidth (>100 kbps) and has been designed from the ground up for efficient, secure Over The Air (“OTA”) firmware upgradeability. As a result, entire multi-million endpoint systems can be upgraded remotely in a matter of hours without interrupting normal operations, and hardware-based security for firmware authentication ensures that only utility-provided firmware may be downloaded and activated. She stated the AMI radio technology is designed in a manner that the network can be seamlessly evolved into higher data rates, through upgrades to and additions of access points, if and when higher network capacity requirements arise in the future. She noted that the AMI vendor also assured IPL that upgrades will only be accomplished with its approval.

Ms. Soller stated there are other elements of the Advanced DSM project that support the proposed NIST standards and system interoperability. She stated that meters from more than one vendor may be used with the selected AMI system. Also, the HAN equipment will be based on ZigBee technology. She explained that ZigBee is a set of specifications built around the Institute of Electrical and Electronics Engineers 802.15.4 wireless standard. Products that meet the ZigBee certification standard are inclined to work together, even if more than one manufacturer is involved in producing the products. She stated that ZigBee enabled products will enable interoperability among various low-power devices in homes and businesses.

Ms. Soller stated that procedures are built into the project design and deployment schedule to assure IPL that the AMI and MDM systems will be deployed in a secure manner.

She stated that overall system design with security best practices incorporated from an architectural standpoint will facilitate security from the beginning of the project. Implementation of security best practices at each system junction point ensures authenticity and reliability of data transport. She stated that infrastructure installed at IPL sites will be tested before being deployed. She stated that IPL is fully aware of all infrastructure functionality and that no functionality will be installed of which IPL is not aware.

Ms. Soller described the project deployment plans. She stated that IPL staff will coordinate specific project components of AMI, MDM, HAN and CEM. In addition, IPL plans to issue a Request for Proposal (“RFP”) for external project management support. She stated the budgetary project management costs included in current cost estimates are based upon vendor responses to a Request for Information (“RFI”) and include tracking project progress for submission to the expected DOE Smart Grid Clearinghouse. Ms. Soller provided a proposed Project Schedule with specific tasks and expected durations.

Ms. Soller stated that IPL has selected Silver Spring Networks (“SSN”) to provide AMI communication system support and host IPL meter data for a period of five years following deployment subject to the successful negotiation of a final agreement. She stated that IPL’s AMI vendor due diligence process included the formation of a cross-functional team who drafted AMI evaluation criteria. The group conducted technical research and reviewed information from several potential vendors before narrowing the selection down to two vendors with whom the team conducted interviews. Ms. Soller identified the evaluation criteria.

Ms. Soller next described the AMI communication system. She stated SSN completed a preliminary communication design to include the demand meters as well as two sample geographic areas of up to 11,000 energy-only meters to develop budgetary information for IPL. She stated IPL sought responses to an RFI from three public communication system vendors to arrive at budgetary pricing for backhaul telecommunication support to link the AMI network to the Internet which is included in the estimated costs. She stated a formal RFP is expected to be issued later in the year. She stated the communication system is scalable so IPL may add Radio Frequency equipment to communicate with distribution devices in the future.

Ms. Soller stated that IPL had not yet selected a meter vendor. She stated it was her understanding that while advanced meters from many manufacturers accomplish similar measurement, collection and storage functions, interfaces between meters and AMI vendors are unique. She stated it is IPL’s hope that interfaces become more standardized as national Smart Grid standards are adopted. She stated that given these circumstances, IPL gathered budgetary cost information from multiple meter vendors as part of the due diligence process and believes it is practical to wait to issue an RFP for meters until after the AMI vendor contract is finalized, which is anticipated to be in September 2009. Ms. Soller stated that in order for the AMI system to work, IPL will purchase Network Interface Card modules from SSN to be shipped to meter manufacturer(s) for installation in meters during the manufacturing process.

Ms. Soller stated that based upon research and technical discussions with meter vendors, she understands that Real Energy Consumption Measurement, Reactive Energy Consumption Measurement, Apparent Energy Consumption Measurement, Voltage Measurement (Min, Average, Max), Outage Count and Duration, Load Profile Recording, Time of Use Recording,

and Remote Connection functions may be accomplished by advanced meters. She noted that IPL is not seeking authority to utilize the remote connect/disconnect capability at this time but may do so in the future.

Ms. Soller explained how the net-metering capability of advanced meters complement IPL's existing distributed generation and the Renewable Feed-In Tariff that was proposed in Phase I of this proceeding. She stated that over fifty IPL customers have deployed distributed generation. Ms. Soller stated that in order to meter the energy usage and production at these locations, multiple meters or specially ordered bi-directional meters are often installed. She stated the proposed AMI meters have capabilities to net-meter in the future. When coupled with CEM tools, such as those proposed in this phase of the proceeding, Ms. Soller stated that these meters will allow customers and IPL to see their net energy profile in near real-time. In addition, these meters may be deployed in locations where customers participate in future renewable energy tariffs such as the Renewable Feed-in Tariff proposed in Phase I of this proceeding.

Ms. Soller stated that Ecologic Analytics is the selected vendor to provide the MDM project component and integration subject to the successful negotiation of a final agreement. She stated the core functionality essential for the MDM system to work includes interfacing with the AMI system to receive meter data, then completing data verification, editing and estimating routines, and integrating to the CAS billing system and other existing key IPL systems such as its OMS. In addition, the MDM system will serve as a data repository for all meter data which will be linked to web-based data presentation software.

Ms. Soller described IPL's MDM vendor evaluation process, including the identification of criteria and results. She stated the MDM due diligence process was similar to the AMI review process whereby staff from many areas of the Company including Metering, Information Technology ("IT"), Customer Service, Strategic Accounts, Power Delivery and Corporate Affairs worked together to identify and weight evaluation criteria.

Ms. Soller stated that IPL has investigated many software products that represent ways to implement data presentment to empower customers to make more educated energy decisions. She stated that two separate tools will be needed to accommodate energy-only and demand metered customers' varying needs. The estimated costs for CEM include potential software licensing, implementation and integration expenses based upon review of RFI responses, technical demonstrations and consultation with IPL IT staff. She stated that RFPs will be initiated to secure vendors prior to negotiating contracts for these tools and that IPL plans to investigate the ability of products and vendors to combine CEM and HAN web-portal functionality to enhance the customer experience and minimize costs.

Ms. Soller described the proposed HAN installations. She stated that budgetary pricing for each HAN installation to include a ZigBee enabled programmable communicating thermostat ("PCT"), in-home display ("IHD") and web-portal access to usage information is included in cost estimates. She stated that half of the installations include costs for an AMR gateway device and customer broadband, while the remaining half is expected to use AMI meters. She stated that IPL will review the results of the HAN testing to determine the most effective combination of tools based on customer responses. In addition, approximately 2,000 repeater units are included in the project budget to accommodate multi-family and small commercial customers.

She stated that while similar in-home equipment has been installed commercially, the opportunity for a utility to manage demand response air conditioning loads through the equipment is fairly new. Ms. Soller stated that IPL anticipates achieving customer benefits in the form of energy and demand savings through the coalescence of broadband and electric utility infrastructure to enable demand response.

Ms. Soller described how IPL will determine where to install the geographically concentrated energy-only AMI meters with HAN equipment. She stated that IPL will select the geographic area(s) to represent typical energy-only customers as practical. Demographic data from the 2008 DSM Market Potential Study and marketing overview data collected from the CoolCents Air Conditioning Load Management (“ACLM”) program in 2008 will be referenced as well as consultation with SSN.

Ms. Soller stated that since there is a possibility to use existing AMR equipment for HAN and TOU pricing offerings, IPL plans to issue a formal RFP following the initial limited testing of the AMR HAN equipment that was proposed in Phase I of this proceeding. This may occur during the first quarter of 2010. She stated that while AMI and AMR share some functionality, AMI technology does not require the customer to have a broadband connection and exhibits additional operational benefits.

Ms. Soller stated that IPL plans to allow customers who already own HAN systems to participate in TOU rates and demand response tariff provisions. She stated that IPL is open to this consideration if technical specifications and operation are compatible and that IPL intends to deploy equipment that supports the most current ZigBee protocol, which is included as a preferred home network standard in the list of Smart Grid standards under consideration by NIST.

Ms. Soller stated that IPL believes third-party evaluation is key to assessing the success of the HAN program. She stated this process will likely include review of customer usage data, energy and demand savings, direct customer feedback and related statistical analysis, and will likely be similar to that proposed in the HAN POC with modifications based upon testing results. She stated that specific statistical analysis will be completed based on existing load research meters as a control group.

Ms. Soller briefly described the DOE SGIG Stimulus Funding application guidelines. She stated the final guidelines for the DOE SGIG matching grant program include a differentiation between small and large projects. Awardees of small project grants may receive grants between \$300,000 and \$20 million based upon up to a 50% match for project expenditures; while awardees of large project grants may receive grants above \$20 million and up to \$200 million. She stated that projects may fit into (1) Equipment Manufacturing; (2) Customer Systems; (3) Advanced Metering Infrastructure; (4) Electric Distribution Systems; (5) Electric Transmission Systems; and (6) Integrated and/or Crosscutting Systems.

Ms. Soller stated that DOE requires applicants to provide a feasible project schedule that provides for completion within three years and includes risk mitigation plans. She stated that since DOE is particularly interested in regulatory requirements and projected deployment timelines, IPL plans to attach a proposed procedural schedule with its application. She noted the

first round of applications to be filed by August 6, 2009, will be considered by DOE and that while subsequent application rounds are planned, DOE does not guarantee that funding will be available; therefore, IPL plans to file its application by the first deadline.

Ms. Soller described the category specifications and allocation method proposed if IPL's Smart Energy Project is selected to receive DOE funding. She stated that since IPL's Smart Energy Project focuses on the Customer Systems, AMI and Electric Distribution Systems, the application will be filed under the Integrated and/or Crosscutting Systems SGIG category. The project budget includes approximately \$25.9 million for Advanced DSM and \$22.9 million for DA programs. She stated that IPL is seeking up to \$20 million in the small project grant classification with funding priority placed on the Advanced DSM components (estimated to including funding of \$13 million when applied to 50% of the Advanced DSM expenditures) and the remaining funding applied to the DA components of the Smart Energy Project.

Ms. Soller provided a high-level summary of the proposed budgets and potential DOE funding for the Advanced DSM and DA equipment upgrades. She explained that Advanced DSM and portions of the DA project are linked by some common AMI communication equipment. She stated that the DA plans will build upon IPL's existing one-way and two-way automated system and form a robust foundation for additional deployment of "Smart Grid" components to be described in IPL's 2009 IRP. Ms. Soller stated that at this time, IPL is not seeking authority to recover costs for any DA projects included in the Stimulus Funding.

Ms. Soller explained that DA will enhance outage restoration by allowing sections of circuits to be isolated if there is a fault on the system, which allows fewer customers to experience a service interruption. In addition, self-healing may occur to back-feed sections of circuits. Circuits may also be operated more efficiently with interactive information received from devices with two-way communication equipment.

Ms. Soller stated that if IPL is not awarded Stimulus Funding, in order to mitigate customer rate impact, IPL proposes to modify the Advanced DSM plan by extending the project schedule to span a 36-month period instead of the proposed 24-month period. If this occurs, the energy-only meter and HAN installations will be delayed to start in September 2011, instead of January 2011, with data analysis to follow. She stated that given the longer project duration, IPL expects to be able to manage project components with fewer external project management resources.

C. Lester H. Allen. Lester H. Allen, Team Leader, Marketing and Program Management of IPL stated that all IPL customers that have AMR energy-only meters, and access to Internet service, will be eligible to participate in the Smart Energy Project. He stated that these customers are Residential customers who are served under Rate RS and Small C&I customers served under Rate SS. He stated that AMI enabled customers in specific geographic areas will also be prospects to participate.

Mr. Allen stated that customers who are currently participants in the existing ACLM program will be allowed to participate in the Smart Energy Project. However, while customers whose air conditioners are already fitted with a direct load control switch that allows IPL to

manage the operation of their air conditioning units will not be actively recruited, these customers will be allowed to migrate to the Smart Energy Project upon request.

Mr. Allen described how customers benefit by having a HAN system installed in their home or business. He stated that a HAN system and associated information devices will improve the customer experience, providing customers with information to reduce their electricity usage while also improving the reliability of their power delivery. He stated that these customers will benefit from real time information on their consumption. Mr. Allen stated that this more advanced information will open up a new world of choice to customers, enable information-based decisions about energy usage to influence consumption patterns, reduce energy bills and cut greenhouse gas emissions. It will also allow customers to better manage their usage and costs when bundled with a proposed time-based rate tariff.

Mr. Allen explained what CEM service offerings will be available to each of the customer classes. Mr. Allen stated that all customers with an energy-only meter will have access to the web-based presentation tool on a near real time basis, regardless of whether or not they participate in the Smart Energy Project and customers enrolled in the Smart Energy Project will also have real time energy usage presentation.

Mr. Allen described the process that IPL will employ to recruit customers as participants in the Smart Energy Project. He stated that while all IPL customers with broadband or AMI capable meters will be eligible to participate in this initiative, IPL will concentrate recruiting efforts on customers that are likely to be in areas of IPL's service territory where previous marketing efforts to enroll customers in other programs, such as the ACLM and Green Power Option programs, have been most successful. He stated that IPL will also work closely with its HAN vendor to help shape IPL's messaging and strategies for introducing the Smart Energy Project to its customers. Mr. Allen stated that some possible criteria for recruitment and selection include (1) single family owner occupied homes (because these homes are generally more energy intensive and are more likely to have larger appliances such as a central air conditioning unit that can be controlled); (2) areas where there are clusters of customers who have previously elected to participate in IPL's ACLM program; and (3) areas where there is a high penetration of broadband access.

Mr. Allen stated that while IPL does not expect to exclude any Residential or Small C&I customer from participation in the Smart Energy Project, the program economics are predicated on the assumption that the majority of participants have a central air conditioning unit that can be controlled.

Mr. Allen stated that the requirement that participating customers have high speed internet connection does not pose a significant challenge to successful recruitment of program participants. He stated that Indiana mirrors the country in the continued quick adoption of high speed internet connectivity by IPL's residents and businesses. Mr. Allen, citing to the Federal Communications Commission's July 2009 "High-Speed Services for Internet Access: Status as of June 30, 2008" Report, noted that nationally during the first half of 2008, high-speed lines increased by 10%. He stated this report also indicates that nearly 2.5 million Indiana homes and businesses currently have broadband access. He stated that the majority of IPL customers that

represent the best candidates for participation in the Smart Energy Project will have readily available access to a broadband connection.

Mr. Allen stated that it is IPL's intention to provide an incentive to encourage customer enrollment. He stated that while the technology and enhanced information that IPL's customers will receive should present an incentive to participate, agreement to participate will also come with conditions on the customers (*e.g.*, Residential customers will be required to participate in the proposed TOU tariff in order to receive a HAN and IHD). He stated that the majority of customers are also expected to allow IPL to control their air conditioning unit in similar fashion as ACLM participants. Therefore, Mr. Allen stated that IPL believes that initially an incentive, in the same amounts provided under the ACLM program, is appropriate to encourage customer participation. He stated that for Residential customers that have an air conditioning unit available for control, IPL proposes to offer \$5 per month during the four (4) summer months; and for Small C&I customers that have an air conditioning unit available for control, IPL proposes to offer an incentive of \$5 per ton of load reduction provided. He stated that once there is some actual experience with customer take rates, IPL may propose that a modification in the incentive payments is appropriate. He stated that in that event, IPL would request Commission approval of the proposed modification.

Mr. Allen explained how customers will enroll in the Smart Energy Project. He stated that similar to the Green Power Option, ACLM and other IPL programs, there will be several alternatives available to customers to enroll in the program, including web-based enrollment forms; completion of an enrollment form that will be provided via a direct mail solicitation; and making a phone call to either IPL's Customer Service phone line or the Customer Care Center of IPL's installation contractor.

Mr. Allen stated it is very likely that the deployment of the HAN devices to Residential customers will have an impact on projected enrollments in the ACLM program. He stated that in the Phase I DSM Program, IPL assumed that there would be 17,000 Residential ACLM switches and 550 Small C&I ACLM switches deployed in Program Year 3. He stated that in Phase II of this proceeding, IPL is proposing to enroll up to 21,000 Residential and 1,000 Small C&I customers in the Smart Energy Project. He stated that if approval is granted to proceed with the Smart Energy Project, it is likely that some of the prospective customers for participation in Program Year 3 of the ACLM program will be targeted and eventually enrolled as a Smart Energy Project participant and will not participate in the ACLM program. He stated that while the extent of a reduction in ACLM program participation is not known at this time, adjustment of the ACLM program targets and budgets is an issue that can be addressed by the proposed IPL Oversight Board. Mr. Allen stated that in spite of the possibility that some prospective ACLM customers may opt to participate in the Smart Energy Project instead, IPL wants to assure the Commission that it remains committed to aggressive deployment of additional ACLM switches.

Mr. Allen described the resources IPL is planning to employ for the installation of the Smart Energy Project equipment. He stated that similar to the approach used in the delivery of its ACLM program, IPL expects to employ an experienced contractor that has qualified service technicians and a 24-hour phone customer care center to perform the installations and respond to customer questions and service requests.

Mr. Allen described the process to install the equipment once a customer has enrolled in the Smart Energy Project. He stated that since installation of this equipment will require IPL's contractor to enter the home or business, an appointment will be required. The installation contractor's agent will first contact the newly enrolled customer to schedule a time for the visit. As part of this call, the customer service representative will verify the customer information, as well as answer any questions the customer might have. An appointment time will then be established and agreed upon with the customer. The service technician will then make the site visit and install the equipment. The service technician will ensure that the equipment is in working order before leaving the customer's premise.

Mr. Allen stated there will be a quality control process employed to monitor the contractor and customer satisfaction. He stated that in addition to the quality control processes of the selected contractor and equipment vendors, IPL will put in place its own monitoring and customer feedback mechanisms to ensure a positive experience for its participating customers.

Mr. Allen explained how IPL will resolve any equipment failures or other technical difficulties the customer has with the HAN system and associated hardware. He stated that IPL's installation contractor will have a fully-staffed customer service center that will be trained to handle the majority of customer questions in a single phone call. He stated that in the event that additional attention is required, a service technician will be dispatched to the customer's premise. He explained that customer complaint resolution will generally be handled by the customer service representatives of the installation and service contractor. He stated that since this technology is relatively new, it is expected that the product vendors will also work diligently with IPL and the installation and service contractors to ensure a positive customer experience. He stated that the responsible IPL project manager will also be available to handle more difficult customer concerns.

Mr. Allen concluded by describing the EM&V process proposed for the Smart Energy Project. He stated that AMI deployment will allow for the development of a superior EM&V process. The precision that is provided by having an advanced metering and communications infrastructure of AMI and AMR meters (with two-way data transfer) will support the measurement, storage, and retrieval of data to readily verify energy savings and demand reductions. He stated that the HAN system will provide IPL with more timely access to end-use customer data on a near real time basis for analysis, measurement and verification of the load relief provided by the demand response resources. He stated that individual customer information will be aggregated to provide information on total demand response provided by HAN participants at the system level, giving the system operator additional confidence in the amount of load reduction achieved. Additionally, usage by participating customers will be compared to usage by non-participating customers to determine how much less energy is being used by the customers who have better consumption information.

Mr. Allen stated that as he proposed in Phase I of this proceeding, IPL believes that evaluation by an independent third-party is key to assessing demand and energy savings achieved by the Smart Energy Project. He stated that these evaluations will be primarily used to make informed future decisions concerning cost-effectiveness and modifications necessary to enhance the success of the programs. He stated the data collection process will likely be similar to that proposed in the HAN POC with modifications based upon testing results. He stated that

specific statistical analysis will be completed based on existing load research meters as a control group. He stated the large scale deployment of energy-only AMI meters and HAN equipment will enhance future load research and forecasting capabilities.

D. Barry J. Bentley. Barry J. Bentley, Vice President, Power Delivery of IPL, described deployment plans and expected operating expenses for the AMI portion of the Phase II DSM Program. He stated the AMI system initiation and deployment is scheduled to occur essentially between January 2010 and September 2011 based on receiving Commission approval in late December 2009. He stated that should the current schedule be altered, the system initiation and deployment will shift accordingly. He stated the AMI communication backbone comprised of relays, access points, and connections to a public telecommunication carrier as well as MDM and AMI software systems will be tested and operational prior to meters being installed for billing purposes.

Mr. Bentley stated that IPL employees have worked closely with IPL's AMR vendor, Landis+Gyr ("L+G"), formally CellNet, since 1997 to install and operate the system. Where practical, lessons learned from the deployment of the AMR system will be incorporated into the AMI system deployment and operational plans. He generally described how the AMI system will be built out. He stated that IPL will procure and install AMI communication relays and access points. The installation of approximately 6,400 demand meters will be divided between IPL labor completing approximately 300 complex installations and contracted meter personnel completing the remaining 6,100 demand meter installations over about a 9-month period; and contracted labor will install up to 22,000 energy-only meters in a subsequent 9-month period. He stated that IPL personnel will work very closely with MDM and AMI vendors to create project installation and integration plans expected to span several months to ensure that systems are fully functioning prior to receiving the first live meter data.

Mr. Bentley stated that IPL has planned a prototype test in the meter lab located in the Arlington Service Center as well as potential field installation and testing. Prior to project initiation, IPL plans to also visit nearby utilities who have selected SSN as an AMI vendor to discuss lessons learned in their deployment process. He described the options IPL considered for the energy-only AMI deployment. He stated that IPL's initial plans were to provide time varying pricing with the AMI HAN installation with an understanding that this could be made available to any IPL energy-only customers in the future but, that based upon discussions with vendors, this is not feasible since meters deployed with a mesh network need to "talk" to neighboring meters. Mr. Bentley stated that estimated costs to basically build a communication umbrella across the entire IPL service territory would exceed \$2 million and is not recommended by the selected AMI vendor. He stated that an alternative option of selecting one or two geographic areas for energy-only AMI meter deployment is proposed with an incremental cost of less than \$100,000 which is included in the AMI backbone cost estimates.

Mr. Bentley described the expected operating expenses for this limited AMI deployment. He stated that during the AMI deployment, IPL will utilize existing demand meter readers to continue manual reading processes as automated functionality is rolled out and troubleshoot any technical issues. In addition, human resources will be shifted from meter reading to analytical and IT support will be required to manage the additional data and software systems. He stated the increased volume of data to be processed and the new MDM system warrants this shift. He

noted that during deployment, the incremental difference in labor and expenses is expected to be incidental. Mr. Bentley stated that IPL will incur significant software support fees, which IPL seeks to recover during this time period. He stated that following the deployment of the energy-only meters, IPL expects to reduce payments to L+G to support existing AMR meters, which are reflected in IPL Witness James L. Cutshaw's revenue requirement exhibits as a credit to customers.

E. John E. Haselden. John E. Haselden, Principal Engineer in the Regulatory Affairs Department of IPL, stated the approach for conducting the benefit-cost analysis for the Phase II DSM Program included the use of the same cost effectiveness model and avoided cost data as applied in the analysis of the Phase I DSM Program. Participants were classified into three market segments (Large C&I, Small C&I and Residential) because of the different energy saving patterns and program features unique to each segment. The segments were evaluated with and without funding that may be available through the Stimulus Funding.

Mr. Haselden discussed the assumptions and estimates used for analyzing the Large C&I customer class. He stated the impact estimates are the same as those described in his direct testimony in Phase I, but that implementation cost estimates have changed as a result of the due diligence process IPL has undertaken. He stated the effect of the anticipated Stimulus Funding is also reflected in the benefit-cost test results. In the case of no Stimulus Funding, more participation by this customer segment would be necessary to make the cost effectiveness positive. Therefore, 300 average sized participants are necessary compared to 240 estimated previously in Phase I. Mr. Haselden stated that IPL is not requesting any shareholder performance incentives and therefore, none are included in the analysis. Mr. Haselden provided the results of the Large C&I customer analysis. He stated the rates and avoided cost inputs used in this analysis are the same as those used in the Phase I analysis.

Mr. Haselden also provided the results of the Small C&I customer analysis and discussed the assumptions and estimates used in the analysis. He stated the impact estimates were assumed to be similar to the estimated ACLM impacts of 3.5 kW per participant. He stated this number is an estimate from a report prepared by Cooper-Cannon on behalf of IPL and which he increased by 0.7 kW to account for additional demand effects beyond just air conditioning controls which should result as customers implement other demand and energy measures due to an awareness of their consumptive patterns. At the hearing, Mr. Haselden was questioned as to the basis for this increase in demand effects. Mr. Haselden explained that there is much research on the Residential consumer side, which shows additional demand impacts of up to 60% for ACLM with a HAN and TOU rates. Therefore, he thought the 20% increase in demand effects for Small C&I customers was conservative. Mr. Haselden stated the analysis includes an assumption of 1,000 participants and an annual energy reduction of 3% is conservatively assumed. Mr. Haselden's research indicated that no studies have been performed to assess the effect of information provided by a HAN on the consumptive behavior of Small C&I customers. Mr. Haselden expected reactions will vary based on the type of business and the appropriateness of the business being willing to allow IPL to occasionally manage its air conditioning load in return for ACLM incentives. Mr. Haselden stated that TOU rates are not offered to this group at this time.

Mr. Haselden discussed the assumptions and estimates used for analyzing the Residential customer class. He stated the impact estimates were assumed to be similar to the currently observed 1.0 kW per participant ACLM impacts except that an additional 0.60 kW has been added to account for other conservation/demand measures the customer may take as a result of awareness of consumption patterns and how they relate to TOU pricing. He stated the energy reduction is assumed to be 8% per year based on documented TOU/IHD studies.<sup>2</sup> Mr. Haselden stated the existing \$20/year ACLM customer incentive is assumed to be applicable to participants with central air conditioning and these customers are also assumed to accept TOU rates. Mr. Haselden provided the results of Residential customer analysis, noting that for this analysis the benefit-cost tests are positive with or without Stimulus Funding.

Mr. Haselden stated there are many other benefits that should arise from the Phase II DSM Program and its eventual extension to more customers, including: (1) improved outage prediction, detection, verification and restoration; (2) timely measurement and verification of demand response actions taken by customers; (3) daily usage information made available to all customers via the internet will educate customers about their specific energy consumption patterns, complement the on-line audit tool and provide feedback to customers that make energy improvements which will validate and reinforce their energy efficiency efforts; (4) more economic demand and energy reductions will be possible in that much of the fixed costs of implementing the “smart grid” are covered in this program and incremental increases in customer participation will not be burdened with these costs; and (5) new appliance and home automation technologies under development will become practical when integrated with the basic components of the Advanced DSM program, resulting in more demand and energy savings.

Mr. Haselden stated it is widely recognized at the state and federal levels that the potential savings from these benefits to utilities and customers, although qualitative at this point, will be substantial. However, estimating the economic value of these benefits is speculative at this point because this aspect of the utility industry continues to evolve. He stated that IPL is taking a conservative approach to the analysis and has found the benefits are still worth pursuing and in the public interest. Mr. Haselden provided a summary of the aggregate benefit-cost results.

Mr. Haselden also provided a summary of the demand and energy impact IPL expects from the proposed Phase II DSM Program. Mr. Haselden stated the kWh reduction is approximately 0.2% of IPL’s 2008 retail sales and a 1.3% reduction from IPL’s all-time peak load. He stated this Phase II DSM Program implementation includes approximately 22,240 customers, or 4.7% of a total of approximately 470,000 IPL customers. Mr. Haselden noted that although not every IPL customer is expected to participate, it is apparent there will be more significant opportunities for more energy savings as the program is further developed and extended to more customers. He stated that another factor that may impact these demand and energy savings estimates favorably is the “Prius effect.” He defined the Prius effect as the observation that as additional and timely information becomes available to drivers of the energy efficient Prius electric hybrid car, some of these drivers make a conscious effort to further reduce

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<sup>2</sup> The studies included: “The Impact of Informational Feedback on Energy Consumption – A Survey of the Experimental Evidence” by Faruqui, Sergici, Sharif, The Brattle Group (May, 2009); “The Power of Experimentation – New evidence on residential demand response” by Faruqui and Sergici, The Brattle Group (May, 2008); “Automated Demand Response System Pilot – Final Report” by Rocky Mountain Institute (March 2006).

their energy consumption. Mr. Haselden stated that it is expected that a similar phenomenon may occur with electric customers as they are provided more timely information on their energy use and prices as well as education on measures available to them from core DSM programs.

F. James L. Cutshaw. James L. Cutshaw, Revenue Requirements Manager of IPL, described the Company's proposal to utilize Standard Contract Rider No. 23 (Advanced Demand-Side Management Adjustment) to recover from customers the costs, including a return on DSM expenditures and lost revenues/margins, of the Advanced DSM program, and the proposed cost recovery mechanism.

Mr. Cutshaw sponsored a proposed tariff sheet for Standard Contract Rider No. 23 (Advanced Demand-Side Management Adjustment) (referred to as the "Advanced DSM cost recovery mechanism"). Mr. Cutshaw stated that in Phase I, IPL proposed to have a single new Standard Contract Rider No. 22 (Core and Advanced Demand-Side Management Adjustment), which would be the cost recovery mechanism for both the Core DSM and Advanced DSM program costs. However, since IPL is now proposing a slightly different cost recovery mechanism for Advanced DSM costs than for Core DSM costs (which were the subject of Phase I of this proceeding), he stated that IPL believes it will be less confusing to instead have separate Standard Contract Riders.

Mr. Cutshaw identified the costs that would be recovered in IPL's proposed Advanced DSM cost recovery mechanism. He stated that IPL is proposing recovery of the Advanced DSM program implementation costs over a five year period, including a return on the unamortized expenditures, prospective recovery of depreciation, incremental Operations & Maintenance ("O&M") expenses and lost revenues/margins to support aggressive Advanced DSM and other efforts by the Company to reduce its customers' consumption of electricity and impact on peak demand. He stated that lost revenues/margins due to decreased kWh consumption and kW demand from the program measures will continue for a 10-year period following installation based upon the weighted average life of the program measures. Mr. Cutshaw stated the proposed cost recovery mechanism for the Advanced DSM program costs would remain in effect until all costs are properly recovered from customers.

Mr. Cutshaw described how the proposed Advanced DSM cost recovery mechanism will work. He stated that IPL proposes to prepare semi-annual filings to recover the costs of the Company's proposed Advanced DSM program, to be integrated with the semi-annual filings for recovery of the DSM program costs proposed in Phase I of this proceeding. Accordingly, IPL proposed the semi-annual periods of July to December and January to June for the proposed Advanced DSM program. Mr. Cutshaw noted that one benefit of this would be to mitigate the impact to IPL's customers by instituting a change in the new DSM program tracker rates in a different month than IPL's quarterly FAC proceedings (Standard Contract Rider No. 6 effective in March, June, September, and December), and semi-annual Environmental Compliance Cost Recovery Adjustment ("ECCRA") proceedings (Standard Contract Rider No. 20 effective in March and September). Mr. Cutshaw also stated that utilizing the proposed effective dates should smooth the workload of the OUCC and the Commission by reducing the number of filings that IPL makes at the same time.

Mr. Cutshaw stated IPL proposes that the determination of the revenue requirement in each semi-annual filing for the Advanced DSM cost recovery mechanism be developed in a manner similar to that approved for IPL's ECCRA. He stated that in each filing, IPL will multiply the unamortized implementation cost balance by the weighted cost of capital as of the prior year end for purposes of determining the return component. Such weighted cost of capital will also be the basis for the Revenue Conversion Factors to be applied to the return and associated expenses. He stated that the depreciation/amortization of Advanced DSM program implementation costs and incremental O&M expenses will be forecasted semi-annually and reconciled to actual expenditures in a subsequent semi-annual filing.

Mr. Cutshaw stated that lost revenues/margins will be forecasted for the same period based upon each program's estimated participation, and reconciled to actual participation in the same subsequent semi-annual filing as expenditures are reconciled. Finally, the Advanced DSM program amounts actually recovered from customers will be reconciled with Advanced DSM program amounts intended for recovery from customers for such period reflecting differences in estimated and actual kWh consumption. He stated these reconciliation processes ensure a dollar-for-dollar recovery of the costs approved for recovery.

Mr. Cutshaw described the process IPL will use to record and segregate the Advanced DSM program costs for each component of the program. He stated the expenditures for each component of the Advanced DSM program will be recorded in the Company's accounting system using individual project numbers, in conjunction with account numbers, to separate costs for accounting and reporting purposes. The Company's work management and timekeeping systems will facilitate this segregation for labor, materials and other expenses incurred to implement the individual programs.

Mr. Cutshaw explained how IPL will account for any funds received for the Advanced DSM program under the Stimulus Funding. He stated that any Stimulus Funding received applicable to the Advanced DSM program will be recorded as offsets to the IPL expenditures, thereby giving IPL's customers the full benefit of such funds.

Mr. Cutshaw stated that IPL is requesting carrying charges on the costs incurred for the proposed Advanced DSM programs. He stated that since the return component of the revenue requirement is based upon historical unamortized investment as of the semi-annual filing, IPL is requesting carrying charges on the costs incurred for the proposed Advanced DSM programs between the time the expenditure is incurred and the effective date of rates approved in a semi-annual filing including such expenditure. Mr. Cutshaw stated that once the rates reflecting the expenditure begin being charged to customers, carrying charges would cease.

Mr. Cutshaw explained IPL's proposal that the recoverable Advanced DSM program costs and revenue requirement be allocated to, and recovered from, each customer class. He stated that for costs which will enable the development of Advanced DSM for all customers, the rate class allocation factors will be based on each class' share of the twelve monthly average system peaks from the Company's cost of service study as approved by the Commission in Cause No. 39938, IPL's last rate case. He noted that the use of this methodology was also proposed by IPL and approved by the Commission in its Orders in Cause Nos. 42170, 42700 and 43403 for the ECCRA. Mr. Cutshaw stated that costs which are applicable only to demand-rate

customers will be directly assigned to and recovered from the Large C&I customer class. He stated that costs which are applicable only to energy-only customers will be directly assigned to and recovered from the Residential and Small C&I customer classes on a 75% / 25% basis, which is the approximate ratio of consumption.

Mr. Cutshaw provided examples to show the specific calculation of the proposed Advanced DSM cost recovery mechanism and anticipated annual factors by customer class. He sponsored Petitioner's Exhibits JLC-D and JLC-E as examples reflecting the use of forecasted annual revenue requirements, lost revenue/margin amounts and billing units in order to calculate anticipated annual factors for each customer class for 2010 through 2013, with and without Stimulus Funding. He stated the annual revenue requirements in these exhibits were based upon implementation costs discussed by IPL Witness Soller, incremental operating expenses and savings by IPL Witness Bentley, and customer incentives discussed by IPL Witness Allen. Mr. Cutshaw, however, noted the proposed Advanced DSM cost recovery mechanism will be calculated and included in the Company's semi-annual Advanced DSM filings using six-months of revenue requirements based upon the calculated return on the unamortized expenditures, projected expenses and billing units.

Mr. Cutshaw provided the monthly dollar and percentage impact on an average Residential customer using 1,000 kWh per month. Mr. Cutshaw stated the estimates of the kWh consumption and kW demand reductions per participant and the number of participants for each program were determined from the analysis prepared by IPL Witness Haselden. Mr. Cutshaw explained that estimated participants for each program were allocated between the individual rates based upon the ratio of the 2008 annual historical kWh consumption within their rate class. Allocated participants by rate were then multiplied by the kWh consumption and kW demand reductions by participant to determine the total kWh consumption and kW demand amounts by rate within each program. These amounts by program were totaled for each individual rate and then multiplied by the revenue margin rates per kWh and kW from Cause No. 39938, IPL's last rate case. Mr. Cutshaw noted this methodology was previously utilized by IPL and approved by the Commission in prior quarterly DSM filings in Cause No. 40292, and also proposed in Phase I of this proceeding for the Core DSM programs.

Mr. Cutshaw stated that after IPL has actual information for the first six-month period, it will include schedules reconciling the projections used in setting the Advanced DSM factors for such period to actual in its next semi-annual filing. He stated that assuming the initial period is the six-months beginning July 2010 as proposed, the first reconciliation would occur with the filing for the six-month period beginning July 2011, which would be filed in April 2011.

Mr. Cutshaw concluded by stating IPL proposes that its authorized net operating income for purposes of the FAC earnings test be adjusted to include the amount of the authorized return in each proceeding, as is currently done for the ECCRA.

#### **4. OUCC's Testimony.**

A. Ronald L. Keen. Ronald L. Keen, Senior Analyst in the OUCC's Resource Planning, Emerging Technologies and Telecommunications Division testified that the OUCC believes the concept of deploying a fully functional Smart Grid should be the end goal -

completed through a series of phases - of a carefully calculated plan. He stated the OUCC remains convinced the costs and planning required to fully develop and deploy Smart Grid technology can be significant and complex, but the end goal of each utility must be the deployment of a fully functional Smart Grid at a point in the future in accordance with some type of overarching “master” development plan.

Mr. Keen testified the OUCC continues to advocate that it is both prudent and reasonable for any utility to proceed cautiously, using a phased-in approach, as the utility upgrades existing systems and deploys new Smart Grid-compatible technology. He stated the OUCC continues to recognize any plan to deploy Smart Grid technology must be tempered by, and proceed from, the existing infrastructure configuration, fiscal considerations and other factors specific to the utility.

Mr. Keen stated that the OUCC envisions a process whereby utilities would develop a “master” strategy to achieve an end goal of deploying a fully-functional Smart Grid, then develop the necessary details and sub-plans to achieve that goal through a series of phases to test, evaluate, and operationally deploy segments of technology. He stated the characteristics of each phase, and the ultimate functionality for each segment, would be developed by and at the discretion of each utility.

Mr. Keen stated the OUCC does not advocate or believe that there should be a set “timeframe” when a fully-functional Smart Grid must be deployed once AMR or AMI technology is introduced into the grid. However, he stated the OUCC does believe a timeline, indicating proposed testing and/or deployments of specific levels of technology, should be established by the utility based on its capabilities, resources, and desire to deploy the Smart Grid in its entirety. He stated that once developed, such a timeline should only be viewed as a guide and serving as a tool to gauge progress for the utility, the consumer and the Commission. However, Mr. Keen acknowledged that circumstances may arise which could have a significant impact on the timeline and necessary changes to that timeline must be examined and, when necessary, implemented. He also stated that such a timeline should not be developed by the utility simply to “fill a square.” Mr. Keen stated that the benefits of Smart Grid technology and the capabilities the technology can enable for both the utility and the consumer are too significant and far-reaching to develop timelines just to “complete the task.”

Mr. Keen stated that a utility which is unable to complete a particular phase or achieve a specific goal within the anticipated timeline should not be punished for failing to meet that goal. He stated that deployment of Smart Grid technology is a significant and potentially daunting effort and the OUCC fully recognizes there will be slips and delays for some utilities, while others may be able to accelerate certain deployments. He stated it is more important for utilities, consumers, and others to remain focused on the end goal rather than the slips and minor setbacks along the way.

Mr. Keen stated the OUCC believes the initiative as detailed by IPL in its Phase II DSM Program constitutes a plan to deploy a fully-functional Smart Grid. He stated that while questions remain, IPL has offered a “master plan” regarding the eventual deployment of a fully-functional Smart Grid, including what could become a pioneering approach to utilize existing or in-place AMR technology as Smart Grid-compatible systems are deployed. Mr. Keen stated the OUCC is intrigued by IPL’s innovative approach to integrate and continue to utilize a legacy

AMR system while the company rolls out AMI technology in its initial phase deploying Smart Grid technology.

Citing to 170 IAC 4-8-1, Mr. Keen testified that the Commission defines DSM as “the planning, implementation, and monitoring of a utility activity designed to influence customer use of electricity that produces a desired change in a utility’s load shape.” He stated the definition also provides that: “DSM includes only an activity that involves deliberate intervention by a utility to alter load shape.”

Mr. Keen stated the OUCC does not believe that IPL’s proposal is, or should be considered, “Advanced DSM.” He stated the OUCC isn’t clear on what differentiates a DSM program from an “Advanced” DSM program. However, he stated, the portion of IPL’s proposed initiative specifically dealing with infrastructure improvement involving the installation of communications networks, meters, distribution automation systems and other equipment typically associated with and defined as “infrastructure” should not be labeled either DSM or Advanced DSM, nor should it be included in any DSM or Advanced DSM-type program.

Mr. Keen opined that the AMI meter, when installed alone, does nothing to induce consumers to alter their use of electricity, nor is there any motivation for customers to alter energy usage by installing a communications network which offers two-way communication to the AMI meter. He explained that if IPL installs an energy management device such as an intelligent thermostat or a Residential Energy Management System (“REMS”) which offers real-time monitoring of usage and pricing signals derived from the data obtained from the meter through the communications network, then instructs the consumer on how to effectively and efficiently use the thermostat or REMS, IPL has enabled the customer to become motivated by the signals and data received through the thermostat or REMS to reduce or alter energy usage. In his opinion, such a scenario would constitute DSM. When such information and data is assimilated, compiled or altered and then offered back to the consumer in some manner which educates consumers on their usage patterns and/or the cost of the energy they use, the device (*e.g.*, the intelligent thermostat or REMS) should be considered DSM.

Mr. Keen explained that the OUCC believes the deployment of this infrastructure will lead to new methods to implement DSM programs, but the technology in and of itself is not and should not be considered DSM.

Mr. Keen asserted that a HAN is nothing more than a “network contained within a user’s home that connects a person’s digital devices, from multiple computers and their peripheral devices to telephones, VCRs, televisions, video games, home security systems, ‘smart’ appliances, fax machines and other digital devices that are wired into the network.” However, once intelligent Smart Grid-compatible devices are deployed which allow the consumer access to the information contained on the HAN (devices such as a PCT, an IHD, Smart Grid-compatible appliances, and load management devices) the HAN assumes the mantle of an enabler, allowing those devices considered to be DSM tools to receive the data and information necessary which may permit customers to potentially alter their energy usage.

Mr. Keen illustrated his point by using the example of the Toyota Prius and what people have described as the “Prius Effect.” He explained that the Toyota Prius hybrid has an elaborate

dashboard monitor which constantly informs drivers, among other things, how many miles per gallon they are getting and whether the engine is running on battery or gasoline power. He stated that what consumers and auto industry personnel quickly found was that the presence of this interactive display alone changed driving habits in startling ways. Drivers became instantly conscious of their driving habits, adjusting those habits to literally compete against the car itself for better mileage. Hence, the “Prius Effect” - using the visual and interactive information from the vehicle display to modify habits in an effort to gain better performance from the car and derive an economic benefit to the operator. The Prius and other hybrids with similar displays triggered on-the-spot learning that changed energy-consumption habits. Feedback which is easily assimilated and understandable can allow a person to alter actions and encourages an individual to try and improve things.

He concluded that the HAN by itself could be equated in a general sense to a Prius hybrid without the visual display. A hybrid Prius without an interactive display still functions as a normal hybrid car will, but offers the operator none of the real-time data which allows the operator to directly change driving habits. In the same manner, the HAN by itself offers the consumer no feedback although the data may very well exist on the network, but the consumer has no way to see, understand or manipulate it. He concluded that adding an interactive device to the HAN, which offers informational feedback to consumers, is the same as adding the interactive display to the Prius. In both cases, it gives the individual access to information and data to potentially enable the consumer or operator the ability to directly change their energy consumption habits.

Mr. Keen testified that IPL’s web-based CEM tool can be considered DSM because it offers the consumer feedback on energy usage trends and allows consumers to potentially alter their usage patterns based on that information.

Mr. Keen described IPL’s MDM system, which will integrate a number of key software systems, including the CAS and the OMS. The AMR system and AMI system data will also be integrated into the MDM, thereby allowing for integration of the data into a CEM system (*i.e.*, a set of web-based tools) for approximately 445,000 energy-only metered customers and allowing them access to billing data on a one-day delay. He asserted that IPL currently offers demand metered C&I customers access to billing on a one-month delay through the existing MV90 system branded by IPL as “PowerView.” He stated that implementation of the enhanced CEM tools may diminish the time lag.

Mr. Keen explained that, generically speaking, the reason any type of web-based energy management tool or portal would be offered is because the utility is convinced a sufficient percentage of customers can and will access the tool on a continuing basis to both validate the cost of the tool and demonstrate that use of the tool will lead to sustained and measurable changes in energy usage trending. However, he stated, without some type of Measurement and Verification (“M&V”) program in place, it may not be possible to determine the value a web-based portal actually offers. He testified that the simplest form of M&V may be the total number of customers registered to use a specific web-based program compared to the total number of customers served by the utility. The percentage measure derived from that value becomes one level of evaluation on specific aspects of the utility’s interaction with its customer base, such as education and information flow. Mr. Keen stated that adding additional evaluation factors offers

better insight into both the utility's interaction with customers and the customer's acceptance and use of these tools, such as customer access rates, modification of data rates, and energy usage trends as a result of access. He stated that if a web-based energy management portal is used by less than a specified percentage of total customers, or cannot effectively demonstrate a sustained positive impact, its overall value becomes suspect and should be re-evaluated for improvement or elimination. He stated that while the OUCC is currently convinced that these tools can be effective and efficient in assisting consumers to manage their energy usage if consumers consistently manage that energy usage on the portal on a sustained basis, it may be appropriate for the Commission to investigate the efficiency and effectiveness of these tools, especially since customers bear the ultimate cost of implementing and maintaining the tools and programs associated with them.

Mr. Keen stated that the OUCC looks forward to collaboratively observing IPL's work on the innovative proposed solution which will utilize AMR meter technology by coupling the data obtained from the AMR meter with customer-supplied broadband service to enable data transmission via the internet to IPL and a customer web-portal, while deploying AMI meters in a phased-in approach. He testified that assuming the limited pilot test proposed by IPL is successful, the potential exists to utilize a HAN-based system with an associated data collection device to support AMR-metered customers (if the customer has broadband service) or AMI-metered customers (if the customers do not have broadband service and are located in a specific geographic area).

Mr. Keen testified that the OUCC believes the communications network proposed by IPL is sufficient, and noted that although a specific meter vendor has not been selected, the Company is currently negotiating a contract with SSN to provide communications systems support for the deployed AMI technology. He stated that IPL is proposing to utilize unlicensed 900 MHz radio spectrum linked to the existing IPL telecommunications system to access the AMI server via IP technology. The new communications infrastructure will involve data relays, additional backhaul, interconnection, and back office software and hardware implementation and integration. He stated that IPL has assured the OUCC that ample bandwidth will exist to effectively and efficiently accomplish OTA software upgrade and maintenance for the system once in place. Additionally, to ensure connectivity regardless of meter vendor choice, IPL is taking a proactive approach by proposing to purchase Network Interface Cards from SSN for integration into the meter once a meter vendor has been selected.

Mr. Keen explained that while data from the utility (and potentially directly from the meter depending on specific HAN technology employed) may come into the HAN via the SSN network, IPL's proposed HAN infrastructure will be based on ZigBee technology. He explained that ZigBee technology is a low-cost, low-power, wireless mesh networking standard. The low cost allows the technology to be widely deployed in wireless control and monitoring applications while the low power-usage enables longer life using smaller batteries. The use of mesh networking provides high reliability and a potentially larger range of operation and data transfer, depending on the structure of the network. He noted that the technology is generally used in the areas of home and commercial building automation, smart energy management, and telecommunications applications.

Mr. Keen testified that the OUCC believes that IPL is taking the necessary steps to ensure cyber-security issues are appropriately addressed in the development and deployment of projects and programs associated with its initiatives. He stated that IPL has dedicated staff to the cyber-security effort, including at least one individual who is a CISSP.

Mr. Keen concluded by summarizing the OUCC position. He stated that the OUCC is supportive of the technological approach IPL is proposing and recommends the Commission espouse the technological approach IPL is proposing as a potentially effective and efficient method to use AMR technology while furthering a deployment of AMI and Smart Grid infrastructure. He further recommended that: (1) the Commission not deem or define IPL's proposed infrastructure as DSM; (2) IPL engage the OUCC in a collaborative process to enable observation of the integration of AMR systems and deployment of the AMI technology and that the collaborative process be expanded to encompass: (a) exploration and development of DSM programs to be considered by a DSM Oversight Board; (b) exploration and design of other than TOU, CPP, and/or Dynamic Pricing programs; (c) exploration and potential development of pilot programs which would test and evaluate emerging Smart Grid-compatible consumer-interactive technologies; and (d) exploration and development of educational programs to educate consumers on Smart Grid and Smart Grid-compatible technologies; and (3) IPL, working with the collaborative, should submit to the Commission and the OUCC quarterly reports detailing the status of both the existing AMR technology and the deployed AMI technology until such time as the utility has a fully deployed AMI system throughout its operational territory.

B. Greg A. Foster. Greg A. Foster, Utility Analyst in the Electric Division of the OUCC's Energy Group provided the Commission with the OUCC's recommendation with regard to cost recovery for IPL's proposed advanced communication system.

Mr. Foster testified that, in general, the OUCC does not support the use of an Accelerated Cost Recovery Mechanism ("ACRM") for a Smart Grid initiative. He explained that generally, an ACRM is any mechanism that permits a utility to collect actual dollars from rate payers to recover an asset's cost outside of a base rate case. He stated that Qualified Pollution Control Property is one form of ACRM. He asserted that utilities should utilize a more traditional regulatory treatment for this project, such as periodic rate case proceedings, deferred depreciation, and/or post in-service Allowance for Funds Used During Construction ("AFUDC").

He explained that utilities are generally allowed to accrue AFUDC to reflect financing costs associated with construction work in progress ("CWIP"). Once a project is complete and put in service, the project's accumulated costs are placed into rate base, depreciation begins, and the utility would begin receiving revenue. However, the utility's revenues would not reflect this additional revenue stream until it has a base rate case where the Order recognizes the inclusion of the construction costs of the project in rate base. He noted that utilities may file a petition with the Commission asking that it be granted post-in-service AFUDC and deferred depreciation on Smart Grid investments. He stated that in the past, the Commission has granted these types of requests.

Mr. Foster testified that on March 19, 2009, the Federal Energy Regulatory Commission ("FERC") filed a Proposed Policy Statement and Action Plan concerning Smart Grid. He stated

that FERC recognized that a key consideration of public utilities in deciding whether to invest in Smart Grid technologies may involve the potential for stranded costs associated with legacy systems that are replaced by Smart Grid equipment. To offer some rate certainty and guidance regarding cost recovery issues, FERC is proposing a rate policy for the interim period until final interoperability standards are adopted. As a proposed interim rate policy, FERC would accept single-issue rate filings submitted by public utilities to recover the costs of Smart Grid deployments involving jurisdictional facilities, provided that certain showings are made.

Mr. Foster provided excerpts from FERC's Proposed Smart Grid Policy Statement stating that FERC proposes to consider Smart Grid devices and equipment, including those used in a Smart Grid pilot program or demonstration project, to be used and useful for purposes of cost recovery if an applicant makes the certain showings. First, an applicant must show that the reliability and security of the bulk-power system will not be adversely affected by the deployment at issue. Second, the filing must show that the applicant has minimized the possibility of stranded investment in Smart Grid equipment by designing for the ability to be upgraded, in light of the fact that such filings will predate adoption of interoperability standards. Finally, because it will be important for early Smart Grid deployments, particularly pilot and demonstration projects, to provide feedback useful to the interoperability standards development process, FERC proposes to direct an applicant to share information with the DOE Smart Grid Clearinghouse, provided for in the ARRA.

Mr. Foster opined that cost recovery decisions must be guided by the utility's specific Smart Grid vision and deployment plans. He stated that even a fully-developed Smart Grid vision, as discussed by OUCC Witness Keen, must be viewed in the context of the specific utility's Smart Grid plan when conducting cost benefit analyses and deciding cost recovery issues.

Mr. Foster testified that IPL's proposal guarantees both recovery of investments and a return on that investment. Mr. Foster asserted that regulated energy utilities, including IPL, are required to provide safe, sufficient, reliable and cost-effective utility service. To meet that obligation, the utility must, among other things, forecast demand with reasonable accuracy and commit to making timely, prudent and cost-effective capital improvements required to meet forecasted demand. He stated public utility capital improvement projects typically require significant funding, whether through current operating income, accumulated earnings, new equity funding, or new long-term debt. He opined that consideration of advance commitments requires determination of which risks may be shifted between a utility's shareholders and its customers, and the benefits provided in response to any approved risk shifting.

He stated that under the traditional approach, cost recovery concerning new capital projects was authorized when construction was completed and the facility had entered commercial service. He stated that in addressing concerns regarding the traditional approach, the National Regulatory Research Institute ("NRRI") has noted that regulators have responded by considering certain modifications to the traditional approach, including CWIP, specific project approval, adjustment clauses, formula rate structures, single issue rate increases, riders and surcharges, and securitization. Mr. Foster also stated that NRRI recognizes approval of any of these alternative cost recovery mechanisms could unreasonably shift risk from shareholders to ratepayers if not limited.

Mr. Foster stated that pre-certifying recovery of investment, return on investment, and associated O&M expenses could be viewed as a form of revenue stabilization, albeit on a limited scale, or as a form of partial decoupling, which raises the issue of whether the Commission should reduce the utility's authorized Return on Equity ("ROE") in response to the decreased business and financial risk associated with an ACRM. Based on all these considerations, Mr. Foster recommended the utilization of a more traditional regulatory approach for cost treatment of the project.

Mr. Foster explained that the OUCC remains supportive of cost-effective DSM. He asserted that IPL's proposal, up to and including the HAN, is not a DSM program, but infrastructure. He noted that this new infrastructure has the "potential" to enable the development of additional DSM programs, and although air-conditioner load controls, web portals, or any other such optional equipment may be added to the new infrastructure, and may be considered DSM equipment and potentially qualify for lost revenue margins, the HAN is infrastructure and should not be encompassed within DSM.

**5. Industrial Group's Testimony.** Nicholas Phillips, Jr., a consultant in the field of public utility regulation and a principal with the firm of Brubaker & Associates, Inc., testified that IPL's proposed method to allocate costs to classes is not appropriate for a number of reasons. First, metering and communications costs were not allocated to classes on the 12 coincident peak factor ("12 CP") in IPL's last approved cost of service study. Metering costs are customer related costs and appropriately allocated to classes on a number of customer basis. Mr. Phillips stated the 12 CP factor is used to allocate generation and transmission investment, not metering costs. Second, IPL's 12 CP data is for groups of classes, not individual classes. Mr. Phillips stated that IPL has Rate HL, Rate PL, Rate PH and Rate SL grouped together instead of using separate allocators for each individual rate. Finally, the Industrial Group does not agree that meters and communication equipment alone perform DSM, although it understands IPL's position that the equipment would be used as part of IPL's DSM proposal.

Mr. Phillips also had a concern with respect to lost margins. He stated that it is difficult to calculate lost margins solely related to IPL's programs. He stated that during this period of economic recession and customer emphasis on the environment, it is difficult to determine if decreased sales from a certain period are the result of the economy, of customer actions that would occur absent IPL's program, or a direct result of IPL's program.

Mr. Phillips stated that the Industrial Group and IPL have discussed the Industrial Group's concerns with the allocation of costs in the program as originally proposed. He stated that IPL listened to the concerns, examined other options for recovery of cost allocation within the Large C&I class, and was able to design an alternative allocation method that, in the Industrial Group's view, is much more reasonable. He stated that IPL has proposed to recover the costs allocated to the Large C&I classes (Rates PL, PH, HL and SL) on a per bill basis. He stated that the methodology for recovery of costs allocated to the Residential and Small C&I classes remain the same under IPL's proposed compromise.

Mr. Phillips stated that IPL's proposal is acceptable to the Industrial Group even though it does not address the concern that costs continue to be allocated to customer classes based on a 12 CP factor. He noted that IPL's proposal does, however, allocate within the classes in a

manner that is appropriate. Mr. Phillips stated that the Industrial Group and IPL entered into an agreement dated October 15, 2009 (“Agreement”) reflecting IPL’s proposal. Mr. Phillips stated the Industrial Group believes the Agreement is in the public interest, reaches a fair and reasonable settlement of the concerns raised by the Industrial Group, and should be approved by the Commission as part of its final order in this Cause.

**6. Petitioner’s Rebuttal Testimony.**

A. Ken Flora. Mr. Flora responded to the OUCC’s position that IPL’s plan should be considered Smart Grid only by stating his belief that Smart Grid functions and DSM functions may overlap. Mr. Flora explained how IPL’s proposed Advanced DSM Program accomplishes Smart Grid functions. He stated that IPL maintains that Smart Grid functions identified in EISA include efficient use of the electric grid, integration of distributed generation resources, incorporation of demand response, and the deployment of “smart” technologies, including those that optimize and control consumer devices. He also noted that DOE, in its recent Funding Opportunity Announcement for Smart Grid Investment Grants, defined customer systems (including “smart” equipment such as home area networks, demand response equipment, and load control systems for lowering peak demand) as one topic area upon which applicants may focus efforts to achieve specific Smart Grid functions including energy efficiency. Mr. Flora stated that IPL’s proposed Advanced DSM Program includes both energy efficiency and demand response through the use of customer devices.

Mr. Flora explained how IPL’s proposed Advanced DSM Program accomplishes DSM functions. He stated that the Advanced DSM Program incorporates energy education and it provides price signals to consumers to change usage patterns (direct load control). He noted that DSM encompasses efforts to conserve energy, measured in kilowatt hours, and reduce electrical demand, measured in kilowatts. DSM includes energy efficiency through programs, education and measure installations. He testified that the demand component of DSM, demand response, includes direct load control of air conditioners and offering customer incentives to reduce demand during peak usage periods. Mr. Flora stated DSM functions may be accomplished through either traditional program measures such as home energy audits or the replacement of motors with high efficiency models, or through advanced technologies that utilize communication devices to affect equipment operation based upon peak time periods or specific price signals, such as PCT. He noted the Energy Information Administration provides that DSM programs “...consist of the planning, implementing, and monitoring activities of electric utilities which are designed to encourage consumers to modify their level and pattern of electricity usage.”

Mr. Flora stated IPL’s proposal is consistent with the Commission’s definition of DSM at 170 IAC 4-8-1, which provides “‘DSM’ means the planning, implementation, and monitoring of a utility activity designed to influence customer use of electricity that produces a desired change in a utility’s load shape, for example, a change in the time pattern and magnitude of a utility’s load. DSM includes only an activity that involves deliberate intervention by a utility to alter load shape.” He asserted that IPL’s Advanced DSM proposal would provide customers with more timely information to help them make better informed energy decisions and this information, combined with time varying prices, is anticipated to shape IPL’s load as consumers: (1) reduce overall energy consumption; and (2) shift peak electricity consumption to off peak periods when

electricity is generally more plentiful and less expensive. Mr. Flora stated these anticipated impacts are built into the cost benefit analysis.

Mr. Flora addressed Mr. Keen's assertion that an AMI meter "does nothing to induce customers to alter their use of electricity." Mr. Flora stated that IPL is proposing to install up to 28,400 AMI meters and enabling communications system equipment to implement the energy management tools, including HAN devices, namely PCTs, IHDs, energy management software and web portals to enable remote access to near real time energy consumption and demand data.

Mr. Flora stated the OUCC provided guidance on what it considers to constitute DSM. He stated that Mr. Keen testified that, "if IPL installs an energy management device such as an intelligent thermostat or a Residential Energy Management System (REMS) which offers real-time monitoring of usage and pricing signals derived from the data obtained from the meter through the communication network, then instructs the consumer on how to effectively use the thermostat or REMS, IPL has enabled the customer to become motivated by price signals and data received through the thermostat or REMS to reduce or alter energy usage. Such a scenario would constitute DSM." Mr. Flora stated that IPL is confused by this statement because Mr. Keen's scenario is precisely what IPL has proposed. He noted that IPL has proposed to offer services, programs and options for customers to actively engage in energy decisions based upon feedback that is useful and convenient for them. Mr. Flora stated that IPL believes that many customers will seek technological options to better manage energy consumption. In addition, Mr. Flora noted that IPL has proposed expanding its direct load control program to include the proposed PCTs in addition to physical switches which are currently deployed. Mr. Flora stated that the programs collectively designed to "deliberately" enable these options are therefore appropriately named "Advanced DSM." He stated that the HAN and CEM tools may enable additional DSM programs as well.

Mr. Flora stated that IPL agrees that infrastructure is included in its proposal and includes AMI communication systems and meters which will be used to collect and provide energy usage information to customers, in addition to providing billing information to IPL. He stated IPL's unique circumstance, with the majority of its meters automatically read, positions it to deploy AMI for DSM benefits. Mr. Flora stated that IPL's proposed plan will couple the ability to provide meaningful and timely information to customers and control PCTs through this infrastructure with HAN devices to encourage customers to modify their usage of electricity. Mr. Flora stated that IPL considers the HAN equipment as a program cost similar to its existing ACLM switches, which are necessary to accomplish direct load control.

Mr. Flora stated there are other aspects of IPL's Advanced DSM plans that may benefit from further clarification. He stated that IPL recognizes that its proposal is different than other "Smart Grid" proposals due to its early deployment of an AMR system and that these distinctions may have led to some confusion on the part of the OUCC. As an example, he noted the OUCC indicated that IPL included DA in its definition of Advanced DSM. Mr. Flora explained that IPL has not testified that DA is DSM. Instead, he stated, IPL attempted to make clear that DA is part of IPL's Smart Energy Project, and explained that it was included in IPL's DOE SGIG application, but that IPL is not seeking recovery of any costs associated with DA in this proceeding. Mr. Flora also addressed the OUCC's assertion that IPL's CEM tools were not included in the DSM cost-benefit analysis and that they are only intended for the 445,000

customers that IPL will continue to bill using AMR meters. Mr. Flora responded that this is not the case. Mr. Flora explained that the costs and some expected benefits of the proposed CEM tools, which will be available to all customers, are included in Witness Haselden's analysis.

Mr. Flora stated that IPL plans to investigate HAN and CEM software options that may result in a common interface to minimize costs and increase ease of use for customers. He stated that IPL has not proposed to justify CEM implementation as a stand alone program; nor has it forecasted energy or demand savings from energy-only metered customers that will not either receive an AMI meter or implement a HAN device with time-varying rates.

Mr. Flora also responded to the OUCC's recommendation that IPL utilize a more traditional regulatory treatment for its project by stating his belief that IPL's request is consistent with the long standing practice for other DSM programs in the State of Indiana. Mr. Flora stated that IPL is not proposing to earn an incentive on these costs, other than their timely recovery, even though the Commission's DSM rules contemplate various alternatives for consideration of incentives. Mr. Flora stated that IPL's SGIG application was selected for funding by the DOE, which provides the potential for a significant benefit to IPL's customers and the State of Indiana. He stated that this fact, combined with IPL's proposal to amortize the costs of its Advanced DSM proposal over a five-year period and to not request incentives, will significantly mitigate the rate impact of its Advanced DSM proposal. Mr. Flora reiterated the importance of timely cost recovery to the financial community. He stated that IPL's request for timely cost recovery is an essential part of its proposal that would provide significant benefits to customers from this advanced technology and the leveraging of DOE funds.

Mr. Flora responded to the OUCC's recommendation that should the Commission approve IPL's cost recovery mechanism, it "should consider reducing the utility's authorized ROE, to recognize the decreased business risk and financial risk associated with advance cost recovery mechanisms for the development of such infrastructure." He stated that the Commission's DSM Rules at 170 IAC 4-8-7(a)(2) allow a utility to earn a greater than normal ROE for a rate-based DSM expenditure. He opined that the implication from this provision in the DSM Rules is that it may be appropriate to incent a utility to offer DSM programs; whereas a reduction of a utility's ROE would do the opposite and provide a disincentive for a utility to offer DSM programs.

Mr. Flora opined that IPL's proposal is in the public interest. He stated that considering the current technological and operating conditions, IPL's phased-in approach allows for the deployment of new metering, communication and energy saving device technologies coupled with time varying rates, and allows IPL's customers to realize the enhanced benefits provided by these technologies.

Mr. Flora also supported the Agreement between IPL and Industrial Group to modify the cost recovery for Large C&I customers in this proceeding. He stated that the Agreement is in the public interest because it provides a fair and reasonable resolution of the concerns raised by the Industrial Group and it has no impact on the cost recovery for the Residential and Small C&I customer classes.

B. James L. Cutshaw. Mr. Cutshaw agreed with the description of the proposed modification of the recovery of allocated costs of the Advanced DSM program from the Large C&I class as described in the direct testimony of Industrial Group Witness Phillips. He stated that since its initial filing, IPL determined that it was possible and also appropriate to recover the allocated costs for the Large C&I class on a per bill basis, instead of the volumetric basis initially proposed for all classes. He stated the majority of the Advanced DSM Program costs allocated to the Large C&I class are for meters, which are often recovered on a per customer (per bill) basis.

Mr. Cutshaw stated that although IPL was aware of the Industrial Group's concerns regarding the proposed method for cost recovery, IPL traditionally has recovered DSM costs from customers on an energy basis. He stated that following discussions with the Industrial Group, IPL had been investigating whether its customer accounting system could accommodate a per bill charge and that subsequent to its submission of direct testimony, IPL was able to determine and test a process to bill such amounts on a per customer bill basis.

Mr. Cutshaw stated the proposed modification does not impact the proposed recovery of such allocated costs from the Residential and Small C&I classes, which would continue to be on a volumetric (per kWh) basis, as proposed in IPL's direct filing. He stated the Advanced DSM Program costs allocated to the Residential and Small C&I classes are appropriate to recover on a volumetric basis, as all other DSM costs are currently being recovered.

In response to statements in Mr. Foster's testimony, Mr. Cutshaw noted that IPL's proposal includes the use of two-way communication. He stated that IPL plans to provide certain customers with a programmable communicating or "smart" thermostat, an in-home display, the option to enroll in TOU rates (once approved by the Commission), and access to a web portal containing near real-time usage information. He stated that all of these actions will provide a purposeful sharing of mutually beneficial and useful information providing the means for customer benefits to be realized.

C. Joan M. Soller. Ms. Soller submitted rebuttal testimony to clarify IPL's intentions to implement Smart Grid technologies, DSM programs, HAN systems, and CEM tools in a manner which is aligned with FERC's Proposed Smart Grid Policy statement issued earlier this year. Ms. Soller stated the phrase Smart Grid may be defined broadly to include electrical protective devices, communication equipment, Supervisory Control and Data Acquisition hardware and software systems, advanced meters, and energy usage monitoring and display devices. While individual components are often labeled "smart," they are interdependent to accomplish automated functionality. She stated that by themselves, devices or communication equipment have capabilities, but do not accomplish automated functions absent integration, coordination, and business practices employed to use the capability or empower customers to make energy decisions based upon information.

Ms. Soller stated that IPL has concerns with the OUCC's description of a HAN. She stated that OUCC Witness Keen describes a HAN as "nothing more than a 'network contained within a user's home that connects a person's digital devices, from multiple computers and their peripheral devices to telephones, VCRs, televisions, video games, home security systems, 'smart' appliances, fax machines and other digital devices that are wired into the network.'" Ms.

Soller stated that a HAN system is incomplete without devices. She stated that without devices, signals from meters may be transmitted, but there is no feedback to customers and thus no “system.” She noted that Mr. Keen included devices in his definition of HAN systems in direct testimony filed in Cause No. 43580 earlier this year.

Ms. Soller commented on the OUCC’s statement that it “may be appropriate” for the Commission to investigate the effectiveness of CEM tools by stating that this may best be determined within Indiana through actual experience offering time-based rates and CEM tools. She stated that IPL has proposed significant M&V and analysis resources for the proposed Advanced DSM Programs and is willing to incorporate Advanced DSM Program results as part of its annual DSM report. She noted that the OUCC has previously cited studies related to demand response and the use of enabling technologies in testimony submitted in other Commission proceedings. Referring to Mr. Haselden’s direct testimony, she stated that study results range greatly between utilities. Ms. Soller stated that IPL believes the effectiveness of technologies may vary with specific company rates and programs.

Ms. Soller noted that Mr. Foster quoted from a Proposed Policy Statement and Action Plan, which identifies certain showings an applicant must make in filings in order to recover the costs of Smart Grid deployments involving jurisdictional facilities. She stated that IPL has reflected these showings in its filing. With respect to reliability and security, Ms. Soller stated that IPL demonstrated plans to ensure the proposed systems would not adversely affect the bulk-power system as set forth in her Direct Testimony. She also noted that Mr. Keen testified that IPL is taking the necessary steps to ensure cyber-security. With respect to the second showing concerning the minimization of possible stranded investment, Ms. Soller stated that Witness Flora’s Direct Testimony describes IPL’s intention to optimize existing assets through AMR based HAN installations. Finally, regarding sharing of information with the DOE Smart Grid Clearinghouse, Ms. Soller stated that Witness Flora co-sponsored testimony jointly filed by the Utility Group in the Commission’s Smart Grid Investigation (Cause No. 43580), which highlighted the possible benefit of sharing information through the proposed DOE Smart Grid Clearinghouse. Ms. Soller stated that IPL remains committed to the position that sharing non-confidential information may be beneficial.

Ms. Soller responded to OUCC Witness Keen’s recommendation that IPL should engage the OUCC in a collaborative process to enable the agency to observe the integration of AMR systems and deployment of the AMI technology. She stated that IPL agrees to file a report semi-annually during the Phase I and II deployment periods and then annually following this time to promote regulatory efficiency. She stated that IPL agrees to meet with the OUCC to share information and work collaboratively during deployment; however, IPL believes a formal collaborative would potentially detract from actual project deployment. Ms. Soller stated that IPL anticipates that it will be working under an extremely aggressive two-year timeline to deploy these systems and equipment in the time frame required by the DOE.

Ms. Soller provided an update of the status of IPL’s request for a SGIG from the DOE. She stated that on October 27, 2009, DOE notified IPL that its application for funding had been selected for award negotiations and that the DOE plans to conduct a briefing for all selectees, scheduled for the November 19, 2009. At the hearing held in this Cause, Ms. Soller testified that IPL had talked with several other utilities to discuss its proposal, including Florida Power &

Light, Southern California Edison, San Diego Gas & Electric, Pennsylvania Energy Company, and Pacific Gas & Electric. She stated that Pacific Gas & Electric has deployed over two million meters and have had no issues while using the specific technology components selected by IPL. She explained that IPL had selected SSN due to the compatibility with different meters. In addition, Ms. Soller provided a brief update of the DOE's timeline for finalizing award agreements with SGIG selectees.

## **7. Discussion and Commission Findings.**

A. Legal Considerations of Petitioner's Proposal. IPL, in its Verified Petition, asserted that certain statutory provisions of Ind. Code § 8-1-2 and the Commission's DSM rules at 170 IAC 4-8-1 *et seq.*, provide the Commission with authority to approve Petitioner's request in this proceeding. Petitioner also elected to be subject to the Alternative Utility Regulatory ("AUR") Act, Ind. Code § 8-1-2.5 *et seq.*, in order to obtain approval of an alternative regulatory plan ("ARP"). Petitioner is an "energy utility" as defined in Ind. Code § 8-1-2.5-2. Section 6(a) of the AUR Act authorizes the Commission to adopt alternative regulatory procedures and establish rates and charges that are in the public interest and enhance or maintain the value of the utility's energy services or properties. The alternative regulatory plans and practices authorized by the AUR Act include practices, procedures, and mechanisms focusing on the price, quality, reliability, and efficiency of service. Ind. Code § 8-1-2.5-6(a)(1).

The Commission has developed a regulatory framework that allows a utility to meet long-term resource needs with both supply-side and demand-side resource options in a least-cost manner. The Indiana Administrative Code (170 IAC 4-7-1 *et seq.*) addresses electric utility IRPs and requires, among other things, that an electric utility consider alternative methods of meeting future demand for electric service. Often, the decision of how to meet the long-term needs of customers in a reliable manner involves tens of millions of dollars of expenditures. These critical decisions have become even more complex as environmental regulations have evolved, and the looming potential for regulation of carbon emissions adds some urgency to the consideration of long-term resource choices.

IPL's proposed Phase II program offering would couple the ability to provide pricing information to customers and control PCTs through infrastructure with HAN devices and time-based rates. It includes direct load control of air conditioners and the offering of customer incentives to reduce demand during peak usage periods. It also includes the use of two-way communication to provide information to customers. IPL plans to provide certain customers with a programmable communicating or "smart" thermostat, an in-home display, the option to enroll in time-based rates (subject to Commission approval), and access to a web portal containing near real-time usage information for all customers. All of these actions would provide a sharing of information providing a means for customer benefits to be realized.

An initial issue in this case is whether IPL's "Phase II" proposal, when reviewed and evaluated as a package, is a DSM proposal. IPL's position is that all the components of its proposal should be considered DSM because they either currently, or sometime in the future, have the capability to play a role in delivering what IPL has termed "Advanced DSM," either directly or indirectly through some overlap as part of a "Smart Grid" network. While the OUCC is generally supportive of the technological approach that IPL is proposing and has

recommended the Commission approve its proposal, the OUCC has a fundamentally different position regarding what constitutes DSM. The OUCC agrees that certain elements of IPL's Phase II proposal should qualify as DSM measures, but argues that the majority of the request is simply infrastructure improvements that are not DSM as defined by 170 IAC 4-8-1 and do not "create or influence a change in a typical consumer's use of electricity." Public's Ex. 1, pp. 6-7.

The Commission's guidelines for demand-side cost recovery by electric utilities at 170 IAC 4-8-1(e) defines "DSM" as,

...the planning, implementation, and monitoring of a utility activity designed to influence customer use of electricity that produces a desired change in a utility's load shape, for example, a change in the time pattern and magnitude of a utility's load. *DSM includes only an activity that involves deliberate intervention by a utility to alter load shape.* (emphasis added).

In the immediate proceeding, the balance of smart infrastructure investment and DSM programs that IPL has proposed herein is heavily weighted toward hard asset investment (*i.e.*, a smarter grid) with a promise of future applications to be employed in reducing customer energy and demand. A key premise relied upon for the success of many of these applications appears to be that providing price signals to customers will, in and of itself, produce energy and demand reductions. The Commission appreciates that price signals may provide information to customers to better inform their energy use decisions; however, we do not find that such actions are deliberate interventions by a utility to alter the customers' load shape. Accordingly, we find that the provision of price information alone does not constitute DSM as defined in our administrative rules. However, we also recognize, as did the OUCC, that certain programs associated with IPL's proposed infrastructure investment may qualify as DSM programs and encourage IPL to consider including such programs in the submission of its July 1, 2010 DSM Plan required by the Commission's December 9, 2009 Phase II Order in Cause No. 42693.

B. Cost Recovery Proposal. IPL proposed recovery of the implementation costs for its Phase II proposal over a five year period including a return on the unamortized expenditures, and prospective recovery of depreciation, and incremental O&M expenses. IPL also requested carrying charges on the costs incurred for the Phase II proposal between the time the expenditure is incurred and the effective date of rates approved in a semi-annual filing including such expenditure. IPL's application to the DOE was selected to negotiate an SGIG award of \$20 million. The \$13 million of Stimulus Funding received for the Phase II proposal would be recorded as offsets to the IPL expenditures, thereby giving IPL's customers the full benefit of such funds.

The OUCC, however, opposed such accelerated cost recovery. The OUCC believes that utilities making primarily infrastructure investments, such as IPL's Phase II proposal, should continue to utilize traditional regulatory treatment, such as cost recovery in a periodic rate case proceeding, deferred depreciation, and/or post in-service AFUDC. Public's Ex. 2, p. 4. We agree. As noted by Mr. Foster, approval of alternative or accelerated cost recovery mechanisms may unreasonably shift risk from shareholders to ratepayers without the ability to also address a utility's authorized Return on Equity. *Id.* at p. 9.

The Commission's December 16, 2009 Order in Cause No. 43580, *In re Investigation of Smart Grid Investments and Smart Grid Information Issues*, ("Smart Grid Investigation Order") also included a discussion of ratemaking options to be considered for smart energy infrastructure investments. While we acknowledged that investments in smart grid infrastructure could be substantial and that timely cost recovery may encourage smart grid investments, the Commission also noted that the regulatory compact placed service providers in a position where they should evaluate opportunities for cost-effective system improvements without the need for ratemaking incentives beyond traditional techniques.<sup>3</sup> *Id.* at p. 29-30.

IPL's Phase II proposal leverages existing AMR assets and introduces new technology that IPL can build upon in the future to expand demand response programs, provide time-based pricing, integrate distributed generation and improve outage restoration. Pet.'s Ex. KF-A at p. 15. IPL has not proposed to replace all of its meters, but has instead reasonably chosen to begin with a smaller scale test project. IPL has also applied for, and been approved to receive, a significant amount of Stimulus Funding from DOE, which will significantly reduce the shareholder investment for the smart grid infrastructure and ultimately mitigate any rate impact to customers.

Accordingly, based on the evidence presented, we find that IPL's proposed accelerated cost recovery mechanism should be denied.

C. IPL/IIG Settlement Agreement. IPL and the Industrial Group filed an Agreement addressing how the costs of Phase II would be allocated within the large customer classes. The Agreement arose from concerns the Industrial Group raised about IPL's proposed volumetric allocation of costs to large customer classes.

As the Commission has denied IPL's request for accelerated cost recovery, we need not address the allocation of costs agreed to in the Agreement at this time.

D. IPL's Phase II proposal. Based on the foregoing findings, further Commission approval for IPL to proceed with the deployment of its proposed smart grid infrastructure is not statutorily required. Therefore, we need not consider or approve IPL's proposal as an ARP under the AUR Act.

However, consistent with our findings in the Smart Grid Investigation Order, we recognize that investments in technologically advanced infrastructure, such as that proposed by IPL herein, does present a heightened level of risk that such investment in time may be more questionable than it appears today. In recognition of this risk and consistent with the statutory construct to approve utility plant or other infrastructure investments, the Commission finds that IPL has sufficiently demonstrated the smart energy project as presented by Ms. Soller to be reasonable, just and in the public interest, and should be approved. IPL's proposed limited scale investment in advanced infrastructure, along with its efforts to obtain Stimulus Funding, is an

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<sup>3</sup> Such traditional techniques would include the filing of a base rate case, a request for deferred depreciation, or post in-service AFUDC as identified by Mr. Foster, as well as other possible filings, such as utility plant additions or expansions under Ind. Code § 8-1-2-23.

appropriate and reasonable step towards modernizing the grid to ensure reasonably adequate utility service and facilities in the future.

Finally, as IPL indicated in Ms. Soller's rebuttal testimony, we find that IPL shall file in this Cause a report semi-annually during the Phase I and II deployment periods and then annually after deployment has been completed. These reports should highlight the successes and the problems encountered during the reporting period. In addition, IPL shall include a discussion of any lessons learned from this project in its annual Summer Capacity presentations to the Commission. We also encourage IPL to meet with the OUCC to share information and work collaboratively during deployment.

**IT IS THEREFORE ORDERED BY THE INDIANA UTILITY REGULATORY COMMISSION that:**

1. IPL's proposed Phase II program is approved as modified in Finding Paragraph No. 7 above.
2. IPL and the Industrial Group's Stipulation and Settlement Agreement filed October 16, 2009 is accordingly denied.
3. IPL's proposed new Standard Contract Rider No. 23 (Advanced Demand-Side Management Adjustment) is accordingly denied.
4. In accordance with Finding Paragraph No. 7.D. above, IPL shall file semi-annual and annual reports in this Cause and provide an annual presentation concerning the deployment of the advanced technology infrastructure approved herein.
5. This Order shall be effective on and after the date of its approval.

**HARDY, ATTERHOLT, GOLC, LANDIS, AND ZIEGNER CONCUR:**

APPROVED: FEB 10 2010

**I hereby certify that the above is a true and correct copy of the Order as approved.**



**Brenda A. Howe,  
Secretary to the Commission**