

STATE OF IOWA
BEFORE THE IOWA UTILITIES BOARD

IN RE: INTERSTATE POWER AND LIGHT COMPANY	DOCKET NO. SPU-2018-0007
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INTERSTATE POWER AND LIGHT COMPANY BRIEF

Interstate Power and Light Company (IPL or the Company) now files its brief in support of the electric and gas tariff filings in the above-captioned docket. The Iowa Utilities Board (Board) should approve the tariff filings as in the public interest.

INTRODUCTION

Advanced meter infrastructure (AMI) is widely used within the electric industry, providing benefits to customers throughout the country. There are more than 72 million electric smart meters deployed in the United States covering more than 55 percent of the population. It is estimated that energy companies will install more than 90 million smart meters by 2020. According to the Edison Foundation's Institute for Electric Innovation, more than 173,000 smart meters have already been installed by other Iowa utilities.

AMI meters automate the process of reporting customer energy usage and support new options for customer services, bringing benefits to both the customer and IPL. AMI meters will allow IPL to quickly identify and respond to power outages, reduce the need for estimated bills due to no-reads, enhance the reliability of IPL's energy distribution system, increase efficiency in reading meters, and facilitate a faster IPL

response to requests to stop and start service. IPL began deploying AMI metering (electric AMI meters and SmartPoint modules for gas) in October 2017 (the “AMI Project”). AMI is now IPL’s standard meter offering for all customers.

While IPL believes, and the evidence supports, the value and safety of AMI meters, IPL is also aware that a limited number of customers—1,990 as of November 2, 2018¹—have indicated that they do not want an AMI meter. IPL chose to offer a non-standard meter alternative (NSMA) for residential customers who do not want an AMI meter installed. IPL made a discrete set of tariff filings on March 1, 2018, to effectuate this option. The proposed NSMA balances IPL’s need to safely and efficiently run its electric and gas metering system in a uniform and modern way while providing these few customers with an alternative. IPL’s NSMA is cost-based, reasonable, and consistent with similar alternatives offered around the country. The Office of Consumer Advocate (OCA) objects to various aspects of the NSMA and its eligibility requirements. Intervenors Kathy Matara (Matara) and Jonathan Lipman AIA & Associates, Inc. (Lipman, and with Matara, the “Intervenors”) object completely, arguing that they should be allowed to retain dated analog meters in perpetuity and without paying for the additional costs such an option will cause. Their health claims are baseless, and the NSMA has appropriate eligibility requirements and is accurately and fairly priced. It should be approved.

AMI BACKGROUND

Despite the relatively voluminous record, this is not a rate case. What is before the Board is IPL’s proposals for those customers who elect non-standard electric and

¹ Hearing Transcript, pages 720, line 13, through 721, line 9. Future transcript references will be in the following format: T.720:13-721:9.

gas meters. The prudence of IPL's AMI investment is for a future rate case, one that is likely to be filed in 2019.² IPL introduced in this docket basic information on the AMI Project to inform the Board, OCA, and Intervenors on the basis for the NSMA, and provides the same here in summary.

Since at least 2009, IPL has been evaluating the merits of implementing an AMI program in Iowa.³ IPL has determined that AMI will provide substantial value and functionality to the benefit of its customers when compared to the current metering infrastructure in IPL's service territory.⁴ Specifically, IPL anticipates that AMI will, among other benefits:

- Allow IPL to remotely connect new customers to IPL's distribution system, reducing the time and cost of such connections;
- Ensure that meters can be read remotely, increasing the number of actual meter readings and reducing the number of estimated bills each month;
- Provide automated outage notification;
- Enhance the reliability of IPL's energy distribution system and facilitate the integration of distributed generation into the electrical grid;
- Enable IPL to expand and enhance future tariff and product offerings; and
- Improve employee safety, including through a reduction of slips, trips, and falls.⁵

The AMI Project will cost-effectively allow IPL to provide customers with more choices and to better serve them on a continuous basis, including during significant events such

² T.761:22-762:17.

³ IPL Exhibit Bauer Direct at 3; *id.* at 4, n.1.

⁴ *Id.* at 3.

⁵ *Id.* at 3-4; IPL Exhibit Bauer Rebuttal at 22, 23-24.

as storms.⁶ Installing AMI in a comprehensive manner will also allow IPL to simplify its metering infrastructure, while avoiding costs of replacing older metering systems.⁷

IPL accelerated the deployment of AMI technology because of a series of failed meter tests that necessitated meter replacement.⁸ For its approximately 470,000 residential, small commercial, and larger instrument-rated electric customers, IPL is using Sensus or Honeywell AMI meters.⁹ These meters will use the Sensus FlexNet communications module to transmit data.¹⁰ Approximately 228,000 residential and commercial natural gas customers will have their mechanical gas meters updated with Sensus SmartPoint modules to enable AMI.¹¹ AMI meter deployment began in October 2017 and is anticipated to be substantially completed by the end of April 2019 for electric meters and the end of June 2019 for gas SmartPoint module installation.¹² At the time of the December hearing in this matter, approximately 450,000 meters or modules had been installed.¹³

ARGUMENT

I. IPL's NSMA should not include analog meters.

OCA and the Intervenors ask the Board to require IPL to provide analog meters as the NSMA for those who request them. Analog meters use dated technology, are not as accurate as digital meters, and would result in burdensome requirements as an

⁶ IPL Exhibit Bauer Direct at 4.

⁷ *Id.*

⁸ *Id.*; see Docket Nos. WRU-2017-0004-0150 and WRU-2017-0017-0150.

⁹ IPL Exhibit Bauer Direct at 5, 6.

¹⁰ *Id.* at 6.

¹¹ *Id.* at 5-6.

¹² *Id.*

¹³ T.734:16-21.

additional NSMA. The Board should not order this technology when a reasonable, safe NSMA will otherwise be deployed by IPL territory-wide.¹⁴

A. The IPL NSMA Options.

IPL is proposing a digital non-AMI electric meter as the NSMA for residential customers.¹⁵ The current NSMA for these purposes is an Itron C1S digital meter.¹⁶ The NSMA for residential gas customers leaves the existing gas meter unchanged (i.e., the AMI module will not be installed). Both the gas and electric NSMA options require, among other things, customers to conduct self-reads of their meters.¹⁷

B. IPL should determine best metering options for its customers.

The Board's tariffs, as well as IPL's experience in metering systems and utility technology, support deference to IPL in its selection of the NSMA.

IPL's Board-approved tariffs make clear that IPL has the right—and the obligation—to choose metering technology. On the electric side, the tariff requires that IPL “will install, own, and maintain suitable metering equipment necessary for measuring electric energy”¹⁸ Identical language is found in the gas tariff,¹⁹ and both are consistent with the Board rules.²⁰ The tariff requirement to install, own, and maintain the meters necessitates IPL's ability to determine what is “suitable.”²¹ One of

¹⁴ IPL addresses the health and safety arguments of the Intervenor in Part IV, *infra*. Those arguments are also supportive of IPL's choice of digital meters as the NSMA.

¹⁵ IPL Electric Tariff, Third Revised Sheet No. 224, § 14.05, Docket No. TF-2018-0029 (March 1, 2018) (“Residential Customer Digital Meter Option”).

¹⁶ Lipman-Matara Hearing Exhibit 53; T.712:20-24.

¹⁷ Initial Filing, Interstate Power and Light Company, March 1, 2018, Docket No. TF-2018-0030; IPL Exhibit Vognsen Direct at 8.

¹⁸ IPL Electric Tariff, Second Revised Sheet No. 224, § 6.07. It further provides that IPL “reserves the right to read the meter electronically.” *Id.* at § 6.10

¹⁹ IPL Gas Tariff, Original Sheet No. 230, § 6.06.

²⁰ See 199 IAC 20.3(1) (electric) (“The meter and associated instrument transformers shall be owned by the utility.”); 199 IAC 19.3(1) (gas) (“The meter and any service line pressure regulator shall be owned by the utility.”).

²¹ T.143:8-25.

IPL's most important functions is to bill accurately,²² and that accuracy starts with the meters IPL must install, own, and maintain at each of its customer locations. The Board rules also expressly permit electric and gas meters to be read by electronic means,²³ which implicitly supports IPL's choice to deploy AMI as its standard meter and a digital meter as the NSMA. IPL has been considering metering technology upgrades for almost a full decade, and consistently reviews relevant technology and associated cost considerations.²⁴ The Board should allow IPL to implement the meter that it believes will best serve the NSMA function and the customers who choose it.²⁵

Additionally, as suggested by the Board's questions at the hearing on this matter, and as acknowledged by OCA witness Seth Davison, IPL could have made meter changes without Board approval.²⁶ That IPL can change metering technology without Board approval is not surprising or alarming, as the Board retains the critical ability to regulate the functionality of the meters (via 199 IAC chs. 19 and 20) and rule on cost recovery for the same. As noted earlier, cost recovery is not before the Board now, but likely will be in a rate case to be filed by IPL in 2019. The Board's and other parties' full review of any IPL request for cost recovery for AMI is appropriate and welcomed in that proceeding. In this docket, IPL seeks approval for the tariff changes it believes are appropriate to properly limit and price the NSMA.

²² See 199 IAC 20.3(1)(a) ("All electricity sold by a utility shall be on the basis of meter measurement" except in limited circumstances.); 199 IAC 19.3(1)(a) (same for gas).

²³ 199 IAC 19.3(7); 199 IAC 20.3(6).

²⁴ IPL Exhibit Bauer Direct at 15.

²⁵ IPL Exhibit Bauer Rebuttal at 7.

²⁶ T.652:9-21.

C. Analog metering technology is dated and less accurate.

Digital technology is superior to analog, is readily available, and is affordable. It is the right choice for the NSMA.

IPL's own experience shows that analog technology is not as accurate as digital. As noted in the relevant waiver filing approved by the Board in Docket No. WRU-2017-0004-0150, IPL determined that 227,489 of IPL's approximately 470,000 electric meters had statistically failed testing.²⁷ All of these meters were analog—none of the approximately 95,000 digital meters then in service were in failed lots.²⁸ This is powerful evidence on its own that analog meters are less accurate than digital meters and should not be part of the NSMA. Further support is found in the post-removal testing of meters required by the Board's waiver in that same docket, where tested analog meters are shown to fail the Board's two percent accuracy tolerance at a rate 13 times higher than digital meters.²⁹ The Board should not mandate use of a technology that is shown to be less accurate than the digital meter.

Nor are new analog meters available to IPL. IPL's suppliers do not provide new analog meters, and IPL buys only new meters.³⁰ IPL has not purchased new analog meters since 2010 (or earlier), has not installed analog meters since 2010, and no longer maintains an analog inventory.³¹ Replacement economics also support a digital

²⁷ IPL Exhibit Bauer Rebuttal at 4.

²⁸ *Id.*

²⁹ *Id.* at 6-7. As described by IPL witness Randy Bauer, the implications of this analog inaccuracy directly impact the ability of customers to keep their existing analog meters. He has calculated that approximately 761 customers who have indicated to IPL that they do not want an AMI meter have analog meters that are part of a statistically failed test lot. *Id.* at 5. IPL is required to remove those meters.

³⁰ IPL Exhibit Bauer Direct at 13; T.50:20-51:4; T.71:11; T.72:2-5.

³¹ IPL Exhibit Bauer Direct at 13; IPL Exhibit Bauer Direct Schedule C (showing declining purchases of analog meters from 2000 through 2010); OCA Davison Direct Exhibit 1, at 2 (showing that no analog meters have been installed since 2010).

NSMA, as IPL can buy a new digital meter for the same price as a refurbished analog.³² Nor is it material, as OCA suggests, that IPL is selling used analog meters or that a market for refurbished meters exists.³³ The fact that somebody, somewhere wants to deploy dated, used meters does not make that choice right for IPL or its customers. IPL has made a reasonable determination based on obsolescence, accuracy, and cost that it will no longer use this outdated technology.³⁴ The Board should support that choice.

D. Multiple NSMA options create unnecessary complexity and cost.

Metering testing and maintenance issues become more complex and costly when multiple NSMA options exist. The Board should support simplicity in the option IPL is providing.

IPL intends to have a single digital non-AMI meter for its NSMA. If required to offer an analog NSMA, IPL will have to maintain an inventory of spares so that meters can be replaced each year; this comes at a cost.³⁵ Additionally, a single meter type simplifies statistical testing by creating one homogenous test lot that results in requiring fewer meters to be tested and thus lowers testing costs that ultimately will be billed to all customers.³⁶ Statistical testing involves physically visiting the premise where the selected meter is located, replacing that meter with another meter and bringing the selected meter back to the meter shop for testing.³⁷ A single larger test lot is desirable over several smaller test lots because, on a statistical basis, fewer meters are required

³² T.73:11-21.

³³ IPL Exhibit Bauer Rebuttal at 7.

³⁴ IPL Exhibit Bauer Direct at 15.

³⁵ IPL Exhibit Bauer Rebuttal at 3.

³⁶ IPL Exhibit Bauer Direct at 14.

³⁷ *Id.*

to be tested.³⁸ Fewer test lots allow IPL to reduce costs by avoiding vehicle, labor, fuel costs, and meter testing expense without losing the accuracy of the testing regime.³⁹

IPL's incremental obligations, if the Board orders analog meters as one of two NSMA options, include maintaining additional test lots or replacing dissimilar analog meters with meters that are adequately similar to allow meter lot aggregation. Either of these options results in additional time and money for the Company, and thus its ratepayers.⁴⁰ These concerns are avoided if a single, digital NSMA is implemented.

E. IPL's choice of a digital meter for the NSMA is consistent with industry trends.

IPL's decision to implement digital meters as the NSMA was neither arbitrary nor outside the trend on these issues around the country.

As noted in Part I.C., *supra*, IPL has good reason to move away from analog metering technology, which can be less accurate than other technologies and is otherwise unavailable from IPL's vendors. Opt-out options across the country reflect a mix of decisions by utilities on this issue, including no opt-out permitted, digital meters, analog meters, and combinations of digital and analog.⁴¹ There is no evidence in this case to support the reasons underlying those decisions,⁴² but IPL has put in substantial evidence that supports the risks, costs, and accuracy of analog meters as compared to digital meters. Additionally, the trend towards more advanced metering, and away from analog meters, is also reflected in the installation of AMI across the country. The Edison Foundation's Institute for Electric Innovation has done an analysis showing that

³⁸ *Id.* at 15.

³⁹ *Id.*

⁴⁰ IPL Exhibit Bauer Rebuttal at 6.

⁴¹ IPL Exhibit Bauer Direct at 8-9; IPL Exhibit Bauer Rebuttal at 8-9; IPL Exhibit Bauer Direct Schedule B.

⁴² Except for evidence that at least one state, Pennsylvania, has legislatively precluded opt-outs. IPL Exhibit Bauer Direct at 9.

there were 72 million electric smart meters deployed in the U.S. by the end of 2016, with 90 million anticipated by 2020.⁴³ IPL too is following the facts and evidence that supports updated metering technology; it originally moved to digital from analog because digital was part of the Company's evolutionary progress to move away from analog to next generation technology.⁴⁴ IPL is moving further up the evolutionary technology ladder with the adoption of AMI, and is willing and able to offer customers who do not want AMI to use digital technology, which is not as beneficial to them or IPL but is superior to analog.

II. The IPL proposed NSMA eligibility criteria are reasonable.

IPL has proposed reasonable eligibility criteria for customers that choose the NSMA option. These criteria are pragmatic and help the NSMA align with IPL billing and metering requirements.

A. The NSMA should be a transitional option.

IPL has designed the NSMA to be a limited-scope, transitional option, which by its terms will sunset over time. This is consistent with customer desire for an alternative meter option, the Company's desire to move to a uniform system of metering that benefits customers and IPL, and prior IPL initiatives.

IPL intends for the NSMA to be a limited term program. Standardization of metering technology for almost 700,000 accounts is important for billing purposes and for economic efficiencies.⁴⁵ As IPL witness Dave Vognsen testified at the hearing: "It's more efficient in delivering of service when you have standards that you follow. We have standards [regarding] how we build our distribution lines, we have standards for

⁴³ IPL Exhibit Bauer Direct at 7; IPL Exhibit Bauer Direct Schedule A.

⁴⁴ IPL Exhibit Bauer Rebuttal at 3; T.72:5-6.

⁴⁵ T.290:12-22.

our services, how much service length we give a customer, we have standards throughout how we provide service.”⁴⁶

The NSMA is available to customers who accept the NSMA at the time of offering and otherwise satisfy the eligibility criteria, as noted in more detail below.⁴⁷ Those customers will have the NSMA option so long as they comply with its terms and eligibility criteria. This is consistent with IPL’s efforts to provide AMI benefits to all customers, and the limited number of customers—1,990—who have currently indicated they want to be on the “hold list.”⁴⁸

Additionally, IPL has sunsetted offerings in the past. For example, IPL currently has a provision in its interruptible service tariff referred to as “Remote Displacement” that provides a credit to IPL in certain situations where IPL provides the customer service during what is otherwise a curtailment period when that customer has standby generation that is remote from its load. That provision is frozen to existing contracts that were signed prior to 1993.⁴⁹ There are only three customers left on that tariff, and it will cease to be available once those contracts expire. Other examples include when IPL froze end-use tariffs—such as municipal pumping, farm, and LGS-Bulk—to existing customers at existing locations. IPL froze those tariffs as part of its tariff consolidation

⁴⁶ T.263:12-17.

⁴⁷ See Initial Filing, Interstate Power and Light Company, Docket No. TF-2018-0029 (March 1, 2018); Initial Filing, Interstate Power and Light Company, Docket No. TF-2018-0030 (March 1, 2018).

⁴⁸ The “hold list” is a list maintained by IPL of its customers who have indicated they do not want to receive an AMI meter. IPL Exhibit Leyden-Van Gundy Direct at 4. As of November 2, 2018, there are 1,990 customers on the “hold list.” T.720:13-721:9.

⁴⁹ IPL Electric Tariff, Tenth Revised Sheet No. 67: “Remote Displacement: In the event Interruptible Customer’s standby generation is remotely located from Customer’s load, Customer shall pay Company for displacement of Customer’s electric requirements over Company’s electric system during periods of curtailment. Customer shall pay Company \$4.09/kW of Excess Billing Demand for the month(s) of curtailment when Customer actually displaces a portion of Customer’s requirements. The Excess Billing Demand is the excess by which Customer’s maximum 15-minute demand exceeds the Billing Demand during the month of actual displacement. Customer shall also pay Company \$.0130/kWh for all kilowatt-hours displaced by Customer. **Remote Displacement is limited to those existing signed agreements that were executed prior to 1993, and any extensions thereof.**” (emphasis added).

process in Docket No. RPU-05-3. Over time, those tariffs were eventually eliminated. In addition, IPL has frozen the tariff for street lighting for mercury vapor fixtures since 1990 and is installing only LED fixtures as replacement for certain HPS fixtures as part of final rates in Docket No. RPU-2017-0001. Sunsetting tariff provisions is a common practice.

B. Self-reading of meters is reasonable.

IPL proposes that customers who choose the NSMA must self-read their own meters in a four-day window and provide that information to IPL for billing purposes.⁵⁰ Much is made by the Intervenor on the burden of this approach, but it is necessary in order to ensure consistency in billing cycle and compliance with the Board's rules.

It bears repeating that one of the major benefits of AMI is the ability to remotely read the meters. That is done with a savings of time and money by IPL, and that benefit will be greatly diminished with the NSMA, which requires data to be manually collected and uploaded into the IPL billing system.⁵¹ To minimize the impact of this lost benefit, IPL proposes a reasonable rule for customers to self-read and report their meter results, with loss of NSMA eligibility if there is failure to self-read twice in a 12-month period. The ask is fair, and will help IPL otherwise comply with Board requirements. By rule, IPL must bill customers every month and on a reasonably recurring basis, a

⁵⁰ At the hearing there was testimony from IPL witness Dave Vognsen that the window is eight days long. T.272:15-25. That testimony was in error, though it is consistent with one interpretation of the tariff filings made. IPL witness Angela Leyden-Van Gundy provided testimony at the hearing that it is a four-day billing window. T.699:2-3. To the extent the Board approves a self-read window, IPL proposes that it be four days as originally contemplated, and IPL will file revised tariffs to make that clear. In addition, as explained more fully in footnote 61, IPL proposed an alternative approach to self-reads in IPL Exhibit 218. If IPL were to conduct reads consistent with that proposal, any issue associated with the length of the read window is rendered moot.

⁵¹ IPL Exhibit Vognsen Direct at 16.

requirement which is more easily met by limiting the read period.⁵² The four-day meter reading window proposed with the NSMA promotes consistency in the length of standard billing cycles, and is designed to control the number of days in a customer's bill cycle so as not to have unexpected high or low bills due to the bill cycle being longer or shorter than the standard bill cycle.⁵³ It is also the same window under which the current meter readers operate, and under which the AMI meters will bill.⁵⁴

Additionally, IPL's billing system, consistent with the Board's rules, will only allow for three consecutive months of estimated bills without manual intervention, unless otherwise approved by the customer or unusual circumstances exist.⁵⁵ IPL's billing system is programmed to issue an estimated bill if the read is not received by the fourth day within the read window.⁵⁶ That result, and the four-day read, help IPL comply with Board rules requiring that IPL bill every month.⁵⁷ The four-day self-read window requirement for NSMA customers provides a schedule for reading that recurs on a regular basis and provides the necessary information for IPL to issue an accurate monthly bill, without the need to bill based on an estimate, which is disfavored by the Company and the Board.⁵⁸

There was testimony from Lipman witness Leonard Goldman that a self-read is burdensome.⁵⁹ His prefiled testimony on this rings hollow, and his concerns overblown, as he also signed a petition (along with many others) that stated "[w]e are willing to self-report monthly readings from our analogue [*sic*] meters to the satisfaction of Alliant

⁵² *Id.* at 13; 199 IAC 20.3(6) (electric) and 199 IAC 19.3(7) (gas).

⁵³ IPL Exhibit Vognsen Direct at 13.

⁵⁴ IPL Exhibit Bauer Rebuttal at 9.

⁵⁵ IPL Exhibit Vognsen Direct at 13; 199 IAC 20.3(6) (electric) and 199 IAC 19.3(8) (gas).

⁵⁶ IPL Exhibit Vognsen Direct at 13.

⁵⁷ 199 IAC 20.3(6) (electric) and 199 IAC 19.3(7) (gas).

⁵⁸ T.254:5-10.

⁵⁹ Lipman Exhibit Goldman Rebuttal at 8-9.

energy.”⁶⁰ Customers are choosing the NSMA, and the exercise of this choice does not obviate the Company’s requirement to comply with Board rules. These rules, and the minimal burden of the self-read, support Board approval of the same.⁶¹

C. Only the customer of record may choose the NSMA.

Only the customer of record who is responsible for payment of the service at the premise where the meter is located can request the NSMA.⁶² This requirement protects customer information and choice, and is consistent with other IPL practices.

IPL does not allow anyone other than the customer of record to change a customer’s character of service, change a customer’s rate, inquire about a customer’s bill, or add services that would result in additional charges to a customer’s bill.⁶³ Customer-specific information is confidential and not readily available to the public; therefore, customer account information is only released to the customer of record (or released to a third-party based upon the expressed written permission of the customer of record).⁶⁴ When a property owner or landlord is a customer of record, that person may select the NSMA. If the tenant is the customer of record, the landlord may not. Allowing someone other than the customer of record (or designated representative) to change the customer’s character of service would put the customer at risk and could result in the customer receiving services and associated charges that the customer did

⁶⁰ IPL Hearing Exhibit 222 at 1; T.912:2-13; T.914:25-915:4.

⁶¹ On the second day of the hearing, IPL proposed an alternative approach to this issue, which includes a Company read of the NSMA meters every third month (four times per year) and an estimated bill on non-read months (eight times per year). IPL Hearing Exhibit 218. Explicitly part of this proposal, and otherwise applicable in every rate case IPL files, IPL will review the proposed fee and update it, as needed, in the next rate review. *Id.* IPL stands by and is willing to implement the proposal found at IPL Hearing Exhibit 218 if ordered by the Board. OCA witness Brian Turner appears to support this approach. T.593:8-17.

⁶² IPL Exhibit Vognsen Direct at 7.

⁶³ *Id.*

⁶⁴ *Id.*

not desire. Nothing about the practice of limiting the request to the customer of record is inconsistent with 199 IAC 1.9(5)(c), which generally protects customer-specific information.

Once a customer is no longer the customer of record, IPL will install an AMI meter. This aligns with IPL's view that the NSMA program should be limited in scope and duration.⁶⁵

D. A NSMA customer must be a residential customer and have only a single point of delivery.

The NSMA is offered to residential customers with a single point of delivery. This requirement reflects the complexity of electric⁶⁶ accounts that are multi-metered on a short interval basis, and thus not easily self-read.

A customer's billing is normally based upon a single meter at a single point of delivery.⁶⁷ In more complex electric billing situations, there may be multiple meters used to measure and bill service. These more complex electric meter situations typically are related to either subtractive metering or meter totalization; this does not lend itself to having the meters self-read by customers since the data from the meters is being collected on a 15-minute interval basis with the meter data aggregated within the billing systems.⁶⁸ Customers who opt for the non-standard meter will be required to self-read; however, in these complex metering situations described above, a customer would not be able to provide the meter data to compute a correct bill since the data is

⁶⁵ *Id.* at 14-15.

⁶⁶ For natural gas, it would be an anomaly to have more than a single meter measuring residential gas service so the multiple meter criteria for natural gas would very rarely (if ever) come into play. *Id.* at 10.

⁶⁷ *Id.* at 9.

⁶⁸ *Id.* at 9-10.

retained in the meter and must be downloaded using a specific handheld electronic device.⁶⁹

Similarly, commercial and industrial customers have more complex meter configurations and may be billed for both kilowatt and kilovar demands in addition to kilowatt hours.⁷⁰ A NSMA will not provide the interval usage data necessary to bill these customers.⁷¹

IPL's proposal to limit the NSMA to residential customers having a single point of delivery balances a desire for broad availability with the reality of multiple meter systems.

E. Once disconnected, a customer of record is ineligible for the NSMA.

Post-disconnection functions support IPL's decision to make customers disconnected for certain specified reasons, such as non-payment of bill or tampering, ineligible for the NSMA.⁷²

When a customer is disconnected (pursuant to Sections 4.18C or D of the Electric General Rules and Regulations or Sections 4.17B or C of the Natural Gas General Rules and Regulations), an AMI meter will be installed.⁷³ When an electric customer makes arrangements to bring their account current, service will be reconnected using the remote connect function of the AMI electric meter.⁷⁴ IPL

⁶⁹ *Id.* at 10; see IPL Exhibit Vognsen Direct Schedule B (a photograph of the device used by IPL meter readers to obtain this data).

⁷⁰ IPL Exhibit Vognsen Direct at 9.

⁷¹ *Id.*

⁷² See IPL Electric Tariff, Third Revised Sheet No. 224, § 14.05, Docket No. TF-2018-0029 (March 1, 2018); IPL Gas Tariff, Second Revised Sheet No. 313, § 14.12, Docket No. TF-2018-0030 (March 1, 2018). For example, certain customer-requested disconnections (such as a disconnection for work to be performed on the customer's side of the meter) would not result in a loss of eligibility. IPL Electric Tariff, Third Revised Sheet No. 224 § 14.05, Docket No. TF-2018-0029.

⁷³ IPL Exhibit Vognsen Direct at 14.

⁷⁴ *Id.*

identified several operational benefits associated with AMI meters, including savings associated with remote disconnection and remote connection of service.⁷⁵ The availability of this function not only allows IPL to reduce costs (by avoiding vehicle, labor and fuel costs) but also improves customer service by allowing IPL to connect service in a timelier manner in the future.⁷⁶ The non-standard meter could undermine operational savings associated with remote disconnect and reconnect especially if IPL has to repeatedly disconnect and reconnect service at a premise without an AMI meter.⁷⁷

F. Customers on advanced electric rates are not eligible for the NSMA.

The data requirements of certain electric tariffs necessitate an AMI meter; thus, the NSMA option is not available for customers on these rates. Specifically, customers who utilize one the following optional rate codes are not eligible for a non-standard meter: Time-of-Day; Net Metering Pilot – Renewable Energy Facilities; Cogeneration & Small Power Production; and Alternative Energy & Small Hydro Production.⁷⁸

i. Time-of-Day.

A time-of-use meter (used in a Time-of-Day rate) has multiple data registers that display meter reads for on-peak kilowatt-hour usage, off-peak kilowatt-hour usage, total kilowatt-hour usage, as well as date information.⁷⁹ Because of the multiple reads that would be required, it would be difficult for the typical customer to distinguish between the various data displays of the time-of-use meter.⁸⁰ The new AMI meters will provide the billing systems the hourly data, and the billing system will determine the on-peak

⁷⁵ *Id.*

⁷⁶ *Id.* Every time a customer is disconnected and reconnected, IPL currently has to roll a truck twice—once to disconnect, and then again to reconnect. IPL Exhibit Bauer Rebuttal at 23.

⁷⁷ IPL Exhibit Vognsen Direct at 14.

⁷⁸ *Id.* at 10.

⁷⁹ *Id.*

⁸⁰ *Id.*

and off-peak monthly usage.⁸¹ This eliminates the need for the meters to have various usage displays in order to properly bill the customer.⁸² OCA supports this exclusion from the NSMA.⁸³

In addition, IPL eliminated the separate time-of-use meter charge for time-of-use customers in Docket No. RPU-2017-0001.⁸⁴ A time-of-use meter with multiple registers is no longer required to bill customers on a time-of-use rate since an AMI meter can feed the necessary data into the billing system to determine the appropriate billing usage.⁸⁵ AMI meters will be capable of tracking the information necessary to bill a customer on a time-of-use basis. If the Company were to offer time-of-use customers a NSMA, it would need to reinstitute the former time-of-use meter charge in addition to the non-standard meter charge in the proposed tariff.⁸⁶

ii. **Self-Generation.**

Customers that generate their own energy also will not be eligible for the NSMA. These customers require metering that measures hourly kilowatt-hour data flowing out on to the grid in addition to measuring the power they receive from IPL.⁸⁷ The hourly kilowatt-hour data is needed to properly bill the customer as well as to monitor the distribution system to ensure safe and reliable service for all customers.⁸⁸ It has been

⁸¹ *Id.* at 10-11.

⁸² *Id.* at 11.

⁸³ OCA Exhibit Turner Direct at 4-5.

⁸⁴ IPL Exhibit Vognsen Direct at 11.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.* IPL's electric tariff requires the same: "The Company will install and provide, at no additional cost to the Facility, metering equipment at the point of service to the Facility capable of measuring power flows in each direction on an hourly or other real-time basis." IPL Electric Tariff, Fifth Revised Sheet No. 42, Net Metering Pilot – Renewable Energy Facilities.

⁸⁸ IPL Exhibit Vognsen Direct at 11.

IPL's practice for almost 20 years to always install digital (non-smart) meters for these customers that record the hourly information described above.⁸⁹

IPL is proposing the NSMA exclusion for these self-generation rates because customers would not be able to provide the information required to be properly billed, losing the benefit to customer and the Company of eliminating the current meter reading process. Customers on self-generation rates have bi-directional meters that collect hourly interval data through multi-channel recorders.⁹⁰ One channel of the meter records the hourly interval data of the power being delivered from the grid and another channel records the power being delivered to the grid.⁹¹ IPL's meter readers have historically read these meters once a month by connecting the meter reader's handheld device to the meter and downloading the data from the meter into the handheld device.⁹² The interval data required to bill the customer pursuant to the tariffs is uploaded into the billing system from the handheld device.⁹³ It is not possible for these customers to self-read their meters to determine the hourly interval data since the data needs to be downloaded from the meter.⁹⁴ If customers who self-generate were permitted to participate in the NSMA, IPL's meter readers would need to visit those customers' meters on a monthly basis to download the required data to enable proper billing, thereby eroding a benefit of the AMI system.

The implementation of AMI meters will eliminate the need to visit the meters and electronically download the data into the device, since the data will be transmitted

⁸⁹ *Id.*

⁹⁰ IPL Exhibit Vognsen Direct at 12.

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

directly into IPL's AMI meter system.⁹⁵ OCA supports these exclusions,⁹⁶ while the Intervenor object. Lipman witness Emily Kelly asks for "bi-directional analog meters," testifying that they have been used for "decades," and that "many utility companies in the U.S. currently offer bi-directional analogs as an opt-out for their solar customers."⁹⁷ She provides no specifics on where they are being used, or by whom, and IPL not only does not have any such device, but in fact has never heard of any such device.⁹⁸ To the extent such a meter exists, it would provide a single value, net of energy in and energy out.⁹⁹ This is of little value to the customer, and of no value to IPL, which, per its tariff, has to measure both energy received and energy delivered from DG customers.¹⁰⁰

While it is technically possible to put two analog meters on the house (and that has been done for other reasons in the past),¹⁰¹ that would still require IPL to send out meter readers and would also require the NSMA customer to pay for an additional meter. Additionally, the granularity of the data that IPL will provide customers from the AMI-metered system will help them better understand their energy usage. Customers will be able to see hour-by-hour information as well as the load pattern associated with their system.¹⁰² This will allow them to shift load as desired in order to get the best value out of their distributed generation (DG) and the tariff they are on. Similarly, IPL will have the same information, which will help it better understand and design its

⁹⁵ *Id.*

⁹⁶ OCA Exhibit Turner Direct at 4-5.

⁹⁷ Lipman Exhibit Kelly Rebuttal at 4.

⁹⁸ T.45:10-15.

⁹⁹ IPL Exhibit Bauer Rebuttal at 16.

¹⁰⁰ IPL Electric Tariff, Second Substitute Fourth Revised Sheet No. 40, Net Metering Pilot – Renewable Energy Facilities; First Substitute Second Revised Sheet No. 53, Alternative Energy & Small Hydro Production.

¹⁰¹ T.91:20-92:1; IPL Exhibit Bauer Rebuttal at 17.

¹⁰² T.772:17-773:7.

distribution system, an important issue as DG continues to spread, and to bill accurately.¹⁰³

Ms. Kelly and others who use the IPL distribution system and tariffs to generate their own electricity have been on digital meters for years.¹⁰⁴ IPL simply cannot bill these customers without making significant changes to its existing billing system and practices. IPL is proposing the next logical step for these customers on metering for their own benefit, as well as that of IPL as it runs the grid. The NSMA option is not appropriate for these rate classes.

III. IPL's monthly \$15 charge per meter for customers choosing to have the NSMA is cost-based, reasonable and well-supported by the record.

A \$15 per month, per meter charge for customers who choose to have a non-standard meter should be approved because it is reasonable and reflects the cost of offering the NSMA to customers who desire such an option.

The \$15 charge is the core issue of this proceeding. As a public utility with an obligation to provide safe, efficient, and reliable service, IPL must often make challenging business decisions that balance the interests of the utility, all of its customers, and the service offerings that individual customers may desire. These decisions include the kind of service offerings, including metering technology, that the utility will employ as well as how the costs for those decisions should be calculated and fairly recovered.

¹⁰³ T.773:7-9; IPL Exhibit Bauer Rebuttal at 17.

¹⁰⁴ Customers representing 33 IPL accounts in Fairfield with DG filed a petition in this docket on November 30, 2018, asking for analog meters. IPL Hearing Exhibit 223. They are all on digital meters, and as IPL's analysis shows, some of them have been on digital meters since 2010. IPL Hearing Exhibit 224; T.928:10-23.

Contrary to Intervenor's assertions throughout this proceeding, IPL *does* care (and cares greatly) about what its customers want in their utility service—so much so that it proposed the NSMA, allowing most residential customers to choose a different meter. The Intervenor has insisted that they should pay no fee in connection with this choice, and OCA believes that a charge is not appropriate at this time. Such a position is at odds with fundamental fairness and cost-based rates.

The Board should not prohibit IPL from assessing a reasonable \$15 per month per meter charge for this optional service. Further still, the Board should not require IPL to wait until its next rate case to begin assessing a reasonable charge to customers for a new service, as doing so would deter utilities from offering new customer-oriented service options between two rate review proceedings. Accordingly, the Board should approve IPL's proposed NSMA charge.

A. The record before the Board persuasively demonstrates that the \$15 charge is cost-based and reasonable.

IPL's tariff filing, supporting materials and direct testimony in this docket support a conclusion that the proposed \$15 per month NSMA charge is reasonable and based on the incremental costs of providing this optional service to customers.

Rates and charges for utility service must be just and reasonable.¹⁰⁵ Rates and charges should reasonably reflect the costs of providing service to each class of customers.¹⁰⁶

IPL based its proposed \$15 per month per meter NSMA charge on the incremental costs of offering this option. IPL determined the reasonable range of costs associated with offering such an option and selected the \$15 per month charge as being

¹⁰⁵ See Iowa Code § 476.8(1).

¹⁰⁶ See 199 IAC 20.10(2).

within the range produced by these estimates.¹⁰⁷ The \$15 per month charge was developed based on five line items—four cost items and one credit item. IPL Exhibit Vognsen Direct Schedule A provides a breakdown of the proposed monthly charge.¹⁰⁸ IPL witness Vognsen’s Direct Testimony walks through each of these components in some detail.¹⁰⁹ IPL’s approach to costing the voluntary offering is consistent with how it develops costs for all of its offerings.¹¹⁰ As such, the record is replete with detail supporting the cost-basis for the proposed NSMA monthly charge.

While IPL acknowledges that no one utility can necessarily be used as a proxy for another, a \$15 per month charge is reasonably consistent with similar charges imposed by other utilities, which impose fees ranging from \$5-33 per month.¹¹¹ These comparable charges support the validity and reasonableness of IPL’s proposed \$15 per month, per meter charge. This is especially true in light of the fact that IPL is not proposing any initial fee for customers that select the NSMA, in comparison to other utilities that have imposed a one-time initial fee in addition to recurring monthly charges.¹¹²

The largest line item is the proposed charge for manual read verification.¹¹³ While the \$12.59 cost for twice per year manual read verification is much larger than the current cost of meter reading included in rates, manual read verification occurring in the context of the NSMA will not benefit from the efficiencies of scale associated with IPL’s

¹⁰⁷ T.276:19-25.

¹⁰⁸ IPL Exhibit Vognsen Direct Schedule A.

¹⁰⁹ IPL Exhibit Vognsen Direct at 15-18.

¹¹⁰ IPL Exhibit Vognsen Rebuttal at 6.

¹¹¹ IPL Exhibit Bauer Direct at 9-10; IPL Exhibit Bauer Direct Schedule B.

¹¹² See IPL Exhibit Bauer Direct Schedule B.

¹¹³ IPL Exhibit Vognsen Direct at 15.

current manual read process.¹¹⁴ IPL's average meter reader reads 500 meters per day.¹¹⁵ The costs of current meter reading are spread across 400,000 customers.¹¹⁶ These kind of efficiencies simply will not be realized in the context of the manual read verifications occurring for a much smaller group of customers under the NSMA.¹¹⁷ This same logic explains why the meter reading credit component of the NSMA charge is much smaller than the manual read verification component of the NSMA. When reading the meters of an average of 500 customers per day, lower per customer costs are realized due to the obvious efficiencies of scale. That is simply not the case with respect to the NSMA, which was developed based on an anticipated participation of a *total* of 2,700 meters spread throughout IPL's service territory.¹¹⁸ The logic and related math for the meter reading credit and the manual read verification credit are identical, but the result reasonably is a higher figure for the manual read verification. It is these costs which IPL is reasonably assessing to those customers who cause them.

Without conducting any analysis or study specific to IPL's service territory, OCA argues that the \$15 charge is inflated and fails to account for higher concentrations in customers in one region of IPL's service territory.¹¹⁹ While it is true that higher concentrations may lead to efficiencies in conducting manual read verifications for customers who reside in concentrated areas, IPL had to make certain reasonable assumptions about the number of customers who would ultimately elect to participate in the NSMA.¹²⁰ Moreover, in developing its reasonable assumptions, IPL considered that

¹¹⁴ See T.278:5-14.

¹¹⁵ T.735:8-9.

¹¹⁶ T.291:5-8.

¹¹⁷ See T.291:5-15

¹¹⁸ T.291:9-11.

¹¹⁹ OCA Exhibit Davison Direct at 5-6.

¹²⁰ IPL Exhibit Vognsen Rebuttal at 8.

its southeast service territory would have a more concentrated number of customers on the NSMA.¹²¹ Savings in areas where participation is more concentrated may be offset by higher costs if IPL needs to conduct manual read verifications for a small number of customers dispersed throughout rural portions of IPL's territory.¹²² IPL has also committed to review the \$15 fee and update it, if necessary, in its next rate review.¹²³

Despite arguing that the monthly fee is too high, OCA has not conducted its own independent analysis of IPL's proposed cost basis for the NSMA monthly charge.¹²⁴ In lieu of such analysis, OCA witness Davison compared IPL's proposed charge to that of an Oklahoma utility, Public Service of Oklahoma (PSO).¹²⁵ Mr. Davison acknowledged, however, that no one utility's service territory could be fairly compared to another.¹²⁶ Mr. Davison further admitted that he did not consider the size of municipalities within the utilities' service territory.¹²⁷ Yet, as IPL witness Vognsen testified, PSO serves Tulsa, a metropolitan city larger than Des Moines, and therefore has a more densely populated urban customer base.¹²⁸ Mr. Davison's written rebuttal testimony also acknowledges that the Oklahoma utility employed a "slightly different fee structure."¹²⁹ At a minimum, these significant differences call the probative value of such a comparison into question.

Assessing the \$15 NSMA charge for each meter that a combination customer has is also reasonable. Retail electric and gas are separate utility services.¹³⁰ IPL has

¹²¹ *Id.* 7-8.

¹²² T.271:3-16.

¹²³ IPL Hearing Exhibit 218.

¹²⁴ T.630:2-9.

¹²⁵ OCA Exhibit Davison Direct at 9-10.

¹²⁶ T.632:2-5.

¹²⁷ T. 631:23-632:1.

¹²⁸ IPL Exhibit Vognsen Rebuttal at 8.

¹²⁹ OCA Exhibit Davis Direct at 9.

¹³⁰ IPL Exhibit Vognsen Rebuttal at 9; T.282:22-283:1.

long read the meters of combination customers at the same time.¹³¹ Meter reading costs are reflected in the customer charge, and combination customers pay a separate customer charge for each service.¹³² Therefore, any resulting savings gained in reading the meters of combination customers have necessarily been reflected in lower costs to all customers taking a given service from IPL.¹³³ The same is true for the manual read verification under the proposed NSMA tariffs.¹³⁴

Contrary to arguments raised by Intervenor Lipman,¹³⁵ failing to assess the NSMA charge for each meter that a combination customer has would result in impermissible discrimination between customers.¹³⁶ Combination customers who take two services from IPL would receive a savings relative to non-combination customers, who would necessarily see their charge rise if costs are re-allocated to reduce the costs to combination customers. Combination customers are receiving two separate utility services from IPL under two separate tariffs.¹³⁷ Assessing a fee for each meter is not impermissible, unreasonable, unfair, or imprudent. Providing them an extra benefit simply because they take both services from the same utility would be.¹³⁸

In sum, the most complete and persuasive analysis of the costs associated with offering the NSMA has come from IPL. IPL proposed a NSMA charge that is fair, reasonable and cost-based for customers who want a non-standard meter. As such, the Board should find the \$15 per month per meter charge reasonable and well-supported.

¹³¹ T.270:14-22.

¹³² *Id.*

¹³³ See T.270:23-271:2.

¹³⁴ T.269:23-270:1.

¹³⁵ Lipman Exhibit Goldman Rebuttal at 13.

¹³⁶ IPL Exhibit Vognsen Rebuttal at 11.

¹³⁷ IPL Exhibit Vognsen Rebuttal at 9; T.282:22-283:1.

¹³⁸ IPL Exhibit Vognsen Rebuttal at 11.

B. IPL should not be required to wait until its next rate case to recover the incremental costs of an additional service.

The Board should not prevent IPL from recovering the incremental costs of offering the NSMA.

IPL currently recovers meter reading costs in its rates.¹³⁹ It currently reads meters and will continue to do so for some time.¹⁴⁰ As noted above, the Intervenors do not support a fee for a non-standard meter at any time. OCA's position appears to be that IPL should offer an optional non-standard service to customers using shareholder dollars, with OCA witness Kruger suggesting that customers should not pay an "additional fee" to have a non-standard meter until IPL files a new rate case.¹⁴¹ Mr. Kruger argues that denying IPL the ability to recover the costs associated with offering a non-standard meter is appropriate because IPL's existing rates include meter read expenses "more than sufficient" to cover these costs.¹⁴² Mr. Kruger's testimony suggests that IPL is somehow benefitting unfairly by imposing the NSMA charge for "meter reading expenses it no longer incurs."¹⁴³ This line of argument is a red herring.

It is immaterial that IPL's current rates include costs of meter reading. IPL continues to incur costs of reading meters for all customers as part of its standard offering. And in fact, IPL continues to incur costs of reading meters and will do so to some extent until AMI meters are fully deployed and provisioned.¹⁴⁴ Even if IPL were *not* still incurring manual meter reading read costs, the Company would still be incurring

¹³⁹ T.233:13-234:1.

¹⁴⁰ T.289:18-20; T.609:10-610:21.

¹⁴¹ OCA Exhibit Kruger Direct at 7.

¹⁴² *Id.*

¹⁴³ *Id.* at 6.

¹⁴⁴ T.289:18-20; T.610:12-20.

the costs associated with deployment of its AMI system.¹⁴⁵ These costs are not currently reflected in rates—and some of those costs will not ultimately be recovered at all.¹⁴⁶ Further still, IPL's proposed NSMA charge includes a \$1.33 credit, which is designed to offset the amounts already in rates for meter reading expenses and isolate the true incremental cost of the NSMA option.¹⁴⁷ In sum, IPL is not benefitting unfairly by continuing to collect meter reading expenses from its customers until its next rate review.

IPL is not engaging in single-issue ratemaking. IPL's tariffs do not assess charges specific to any particular distribution technology.¹⁴⁸ To reject IPL's proposed NSMA charge based on single-issue ratemaking concerns would mean that IPL cannot introduce a new, voluntary service to customers outside of the rate review proceeding. Such a finding would establish a precedent that discourages utilities from offering new, optional services that fall outside of its standard offering between rate cases and inhibiting utilities from reasonably offering new services in response to customer demand. IPL could have assessed the costs for the NSMA through existing tariffs, including the excess facilities provisions.¹⁴⁹ Had it taken that approach, it would not have needed to come to the Board for a change in the tariff. But that would not provide transparency to customers as they decided whether they want (or are eligible for) the NSMA, and would be administratively inefficient.¹⁵⁰ The Board should support IPL's

¹⁴⁵ T.289:21-25.

¹⁴⁶ AMI assets are currently being depreciated, but AMI is not reflected in rates. This means that IPL will forego this depreciation. *Id.*; T.298:3-11.

¹⁴⁷ IPL Exhibit Vognsen Direct at 18; T.235:11-14.

¹⁴⁸ IPL Exhibit Vognsen Rebuttal at 4.

¹⁴⁹ IPL Exhibit Vognsen Direct at 6-7.

¹⁵⁰ IPL Exhibit Vognsen Direct at 7.

efforts to make the NSMA terms and conditions standard and transparent by encouraging and approving the request between rate reviews.

C. Charges for services should be driven by costs.

Prohibiting IPL from charging the \$15 NSMA fee is also contrary to accepted cost-causation principles. As IPL witness Vognsen testified, when customers request facilities and services that go beyond those normally provided, IPL incurs incremental costs.¹⁵¹

The fundamental utility regulatory principle of cost-causation instructs that those incremental costs be borne by those who caused them to be incurred. IPL must make decisions about metering technologies with the needs of all of its customers in mind and an eye toward promoting efficient and reliable service to customers. Failing to charge a fee for an optional, alternative service has the potential to discriminate against the more than 99 percent of IPL customers who have indicated no preference to receive an alternative meter, in violation of Iowa Code section 476.5.¹⁵²

By filing its NSMA tariffs, IPL was attempting to provide an additional option requested by a small fraction of customers—to date, less than one percent of customers who indicated they did not wish to have an AMI meter.¹⁵³ The non-standard option

¹⁵¹ See *id.* at 5 (“IPL plans and designs its distribution system based on the requirements of the typical customer. When a customer deviates from the standard offering, the nonstandard offering generally results in incremental costs.”)

¹⁵² Iowa Code § 476.5 (“No public utility subject to rate regulation shall directly or indirectly charge a greater or less compensation for its services than that prescribed in its tariffs, and no such public utility shall make or grant any unreasonable preferences or advantages as to rates or services to any person or subject any person to any unreasonable prejudice or disadvantage.”)

¹⁵³ As of November 2, 2018, there are 1,990 customers on IPL’s hold list. T.720:12-721:9. Out of 400,000 customers, this translates to less than one percent IPL’s total customers.

leads to incremental costs, and those costs should be borne by customers who cause them.¹⁵⁴

IV. The meters selected by IPL are safe and secure.

The evidence in this case definitively establishes that the meters selected by IPL are safe and secure. First, the radio frequency (RF) transmissions of the Sensus AMI meter selected by IPL are reasonable in frequency and overall emissions. Uncontradicted testimony establishes that IPL selected and designed its network to minimize RF transmissions. When fully tuned, IPL meters will, on average, emit RF for less than one second each day, an amount that translates to cumulative annual emissions that are less than a single six minute cell phone call. And further still, scientific consensus—as evidenced by the findings of several authoritative international health organizations—support a conclusion that RF poses no health risks to humans. Second, the Sensus smart meters selected by IPL comply with all applicable regulatory standards for RF emissions, including those established by the Federal Communications Commission (FCC). Indeed, as discussed in greater detail below, the Intervenor do not challenge the Sensus meters' compliance with relevant FCC standards. Third, neither the Sensus AMI meter (selected as IPL's standard meter) nor the Itron digital meter (selected as IPL's non-smart alternative) create impermissible levels of conducted emissions—what the Intervenor pejoratively refer to as “dirty” electricity. Fourth, the Sensus AMI meters do not present privacy or security vulnerabilities. The usage data generated by a smart meter cannot reveal qualitative information about electricity usage, such as which appliances are in use at a particular residence. Intervenor point to no specific security or safety vulnerability in IPL's AMI

¹⁵⁴ IPL Exhibit Vogensen Direct at 3.

meters or AMI infrastructure, offering nothing more than speculation that such vulnerability may exist. Arguments along these lines should be rejected as baseless.

A. The RF transmissions from the Sensus AMI meter are reasonable in terms of the number of transmissions and total RF emissions.

The RF transmissions from the Sensus AMI meter are reasonable in terms of the number of transmissions and total RF emissions.

First, IPL's Sensus AMI meters transmit for extremely miniscule periods of time. The Sensus meters emit RF only when they transmit a message or "pulse."¹⁵⁵ IPL's meters communicate with pulses of RF that are extremely short in duration, lasting just 85 milliseconds or 0.085 seconds.¹⁵⁶ This short duty cycle means that IPL's smart meters transmit exceedingly low amounts of RF compared to other common devices, even before the devices are fully tuned for long-term use. Even if a Sensus meter in Iowa transmitted 11 times each day—more times per day than what IPL expects to observe when its system is fully tuned—the *cumulative annual* RF transmission time would equate to using a cell phone or Wi-Fi device for just six minutes.¹⁵⁷

Second, the transmissions and pulses occur relatively infrequently. IPL provided data on the number of transmissions occurring per day in IPL Hearing Exhibit 217. That exhibit shows that IPL's gas meters transmitted an average of 6-7 times per day with IPL's electric meters transmitting an average of 12-16 times per day.¹⁵⁸ This data, however, is not representative of what IPL expects to observe in Iowa once AMI is fully

¹⁵⁵ See T.100:8-21.

¹⁵⁶ IPL Exhibit Reed Direct at 4.

¹⁵⁷ T.349:11-25. Intervenor Lipman has used a cell phone for approximately the last 12 years. T.349; IPL Hearing Exhibit 200. Intervenor Matara reports having a cell phone since 2003, and reports using a cell phone 20 minutes per day. IPL Hearing Exhibit 208. Neither produced any medical records in support of claims that they have been or currently are negatively medically affected by RF. IPL Hearing Exhibit 204; IPL Hearing Exhibit 206. Neither claims to be an expert on medicine or other health-related topics. IPL Hearing Exhibit 202; IPL Hearing Exhibit 209.

¹⁵⁸ IPL Hearing Exhibit 217.

deployed. As IPL witness Randy Bauer explained, AMI deployment involves a “shake-out” period during which time the system is fully tuned.¹⁵⁹ Once the tuning phase is completed, the number of transmissions each day will decrease.¹⁶⁰ This is borne out by transmit data from Alliant Energy’s Wisconsin utility, where AMI is fully deployed. There, the data show an average six transmissions per day for gas meters and seven per day for electric meters for each weeklong period reported.¹⁶¹

The average transmissions reported in Exhibit 217 also reflect the existence of a small number of “outlier” meters that are transmitting more than 3,000 times per day. But these meters represent a relatively small number of meters out of thousands that have been deployed.¹⁶² Mr. Bauer testified that this is a consequence of the “shake-out” process in Iowa, as deployment remains ongoing.¹⁶³ Even in a fully deployed system, a few outliers can be expected.¹⁶⁴ While IPL has acknowledged that in certain instances, it should have changed out problem meters more quickly,¹⁶⁵ that concession does little to change the overall picture. Out of nearly 500,000 meters in Wisconsin, the fact that only two to four meters were observed with an abnormally high transmission count supports IPL’s assertion that the number of transmits and overall RF emissions is reasonable.

Fourth, IPL selected technology that will “pulse” or transmit RF even less frequently than other AMI systems on the market.¹⁶⁶ IPL witness Marc Reed testified

¹⁵⁹ T.112:18-113:1.

¹⁶⁰ T.113:2-4.

¹⁶¹ IPL Hearing Exhibit 217. The IPL meters will have one more pulse per day than the Alliant Energy meters in Wisconsin. T.173:1-5.

¹⁶² T.118:21-24.

¹⁶³ T.118:25-119:8.

¹⁶⁴ T.119:9-12.

¹⁶⁵ T.126:12-13.

¹⁶⁶ T.349:11-16.

that Sensus AMI meters communicate with IPL using the FlexNet System, a wireless telemetry network that Mr. Reed developed and patented.¹⁶⁷ The FlexNet System represents state-of-the-art long-range network technology.¹⁶⁸ The FlexNet System has the longest range of any AMI system on the market because it uses FCC-licensed channels with a lower noise level.¹⁶⁹ This longer range enables fewer radio frequency transmissions by allowing messages to be “transmitted directly from the meter endpoints to the base station towers, with no immediate hops.”¹⁷⁰

Mr. Reed acknowledged that the Sensus meters are capable of transmitting in “buddy mode,” where one meter endpoint can repeat a message from another meter.¹⁷¹ But that is *not* how IPL’s system is designed to ultimately work.¹⁷² Many modern AMI installations have zero meters operating in “buddy mode” in the entire network.¹⁷³ Though, as Mr. Reed explained, some meters may operate in “buddy mode” during the IPL’s deployment of AMI and before the system is fully tuned, IPL’s goal is to have zero “buddy mode” meters in Iowa.¹⁷⁴ Reducing or eliminating meters using “buddy mode” has operational benefits to the wireless network by increasing air time available to send data.¹⁷⁵ On the whole, IPL’s selection of the FlexNet technology effectively minimizes the number of transmissions and ensures that overall RF emissions are reasonable.

¹⁶⁷ See IPL Exhibit Reed Direct at 2; IPL Exhibit Reed Rebuttal at 9.

¹⁶⁸ IPL Exhibit Reed Rebuttal at 9.

¹⁶⁹ IPL Exhibit Reed Rebuttal at 3.

¹⁷⁰ *Id.*

¹⁷¹ See T.319:10-14.

¹⁷² T.319:3-10.

¹⁷³ T.319:23-25.

¹⁷⁴ T.320:5-9.

¹⁷⁵ T.371:13-16

B. The Sensus smart meters selected by IPL comply with all applicable regulatory standards for RF emissions.

The Sensus smart meters selected by IPL comply with all applicable regulatory standards for RF emissions established by the FCC.

IPL witness Marc Reed testified that the Sensus AMI meters used by IPL meet all FCC requirements, including those relating to RF transmissions, and have obtained the requisite FCC certifications.¹⁷⁶ IPL introduced a certification testing report prepared by Advance Compliance Solutions which demonstrates that the radio transceiver used in the Sensus meter complies with all relevant FCC standards, including the FCC's guidelines for RF exposure.¹⁷⁷ Though, as noted above, the Sensus meter transmits occur relatively infrequently and last for just a small fraction of a second, the device could transmit continuously without running afoul of the FCC's standards.¹⁷⁸ As such, operation in "buddy mode" is also compliant with all FCC rules.¹⁷⁹

Moreover, there is no credible evidence in the record establishing that the Sensus AMI meters do not comply with the FCC's RF exposure guidelines. Intervenor Kathy Matara testified regarding measurements she took with her Gigahertz Solutions HF35C.¹⁸⁰ These measurements are flawed and should be accorded no weight in this proceeding.

First, Ms. Matara admits that she is not an expert in measuring radio frequency and has no formal training in electronics or electrical engineering.¹⁸¹ Nonetheless, she

¹⁷⁶ IPL Exhibit Reed Direct at 6; IPL Exhibit Reed Rebuttal at 7-8.

¹⁷⁷ IPL Hearing Exhibit 215 at 13-14.

¹⁷⁸ T.365:12-17.

¹⁷⁹ T.371:9-17.

¹⁸⁰ T.778:11-14.

¹⁸¹ T.777:24-778:10.

considers herself qualified to operate the devices she submitted testimony about, namely, the HF35C.¹⁸²

Second, Ms. Matara's HF35C produces readings that are fatally flawed because her meter is unable to measure RF at specific frequencies or isolate background sources of RF. IPL witness Reed explained that the HF35C measures RF power density over a wide range of frequencies, but has no means of reporting the frequency at which its readings are taken.¹⁸³ The Sensus meters operate on a "tiny, 25 kHz wide channel at 901 MHz" which represents just 0.00132% of the spectrum on which the HF35C measures.¹⁸⁴ Thus, Mr. Reed states that there is "little confidence" that any readings obtained by the HF35C can be "correlated to emissions from a particular device operating at a specific frequency without using them in an 'RF quiet' environment such as an anechoic chamber." *Id.* Mr. Reed further testifies that Sensus has conducted an anechoic chamber analysis of its AMI meters and confirmed that they operate as configured.¹⁸⁵

Along the same lines, IPL witness Bauer also testified that the HF35C is not able to measure RF on a specific frequency, and instead captures all RF emissions in a wide range of frequencies.¹⁸⁶ As such, the device cannot accurately measure the RF emitted from a smart meter and distinguish those RF emissions from all other background and source-specific emissions in the range in which the smart meter operates.¹⁸⁷

¹⁸² T.778:8-10.

¹⁸³ IPL Exhibit Reed Rebuttal, at 3.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ IPL Exhibit Bauer Rebuttal at 20-21.

¹⁸⁷ *Id.* at 21.

Ms. Matara offered no evidence to rebut these criticisms. Instead, Ms. Matara herself admits that she has no way of knowing what devices and equipment are causing background levels of RF when using her HF35C.¹⁸⁸ For example, in the case of her readings in Dubuque, Iowa, Ms. Matara admitted that she had no way of confirming that the readings she observed came from an Alliant (IPL) meter.¹⁸⁹ Ms. Matara's own expert, William Bathgate, admits that he does not use the HF35C to measure specific frequencies and would not use it for certification purposes.¹⁹⁰ Bathgate also testified that radio frequency testing "should only be done in a lab setting" with a special testing setup.¹⁹¹

In sum, Ms. Matara's results are simply not reliable and should be accorded no weight. Her test results are undercut by her own testimony and her own expert witness. And her conclusions have been soundly rebutted by IPL witnesses who have entered evidence of valid testing to demonstrate the Sensus meter's compliance with the relevant FCC standards.

Despite IPL's showing that the Sensus smart meters emit far less RF in practice than the meters are legally authorized to, the Intervenors hang their hats on language in IPL Exhibit 215 that requires a separation distance of 20 centimeters (approximately 7.8 inches) from all persons.¹⁹² This last-ditch argument misses the mark.

Mr. Reed estimates that the antenna in the Sensus AMI meter would be located approximately eight inches (more than 20 centimeters) from the outer wall of the house

¹⁸⁸ T.779:25-780:3

¹⁸⁹ T.784:3-5.

¹⁹⁰ T.875:6-22.

¹⁹¹ T.876:24-877:9.

¹⁹² IPL Hearing Exhibit 215 at 14.

when the meter is installed.¹⁹³ Thus, under ordinary conditions of installation, such a separation distance would easily be maintained from the interior living space of a residence. As such, the meter achieves the specified separation distance. The FCC's rules make clear that the 20 centimeter separation distance relates to *normal* conditions of operation. The testing results in IPL Exhibit 215 specify that the Sensus meter is considered a "mobile" device.¹⁹⁴ Under the FCC rules, a "mobile device" is defined in relevant part as a "transmitting device designed to be used in other than fixed locations and to *generally be used* in such a way that a separation distance of at least 20 centimeters is *normally maintained* between the transmitter's radiating structure(s) and the body of the user or nearby persons."¹⁹⁵ Because the meter normally maintains a separation distance of more than 20 centimeters, it is compliant.

Intervenor witness William Bathgate testified that IPL could maintain the separation distance of 20 centimeters for persons on the exterior of a home by installing a guard around the meter box. Yet, he could point to no example of where this has been done,¹⁹⁶ nor any evidence in the record establishing that IPL is violating an FCC rule requiring 20 centimeters of separation.¹⁹⁷ In the absence of such information, the Board should reject this line of argument.

C. Radio frequency emissions do not pose health risks.

Radio frequency emissions do not pose health risks. The Intervenors' claims that RF emissions pose health risks are baseless and soundly contradicted by a strong scientific consensus that RF emissions do not pose a risk to human health.

¹⁹³ T.326:5-18.

¹⁹⁴ IPL Hearing Exhibit 215 at 14.

¹⁹⁵ 47 C.F.R. § 2.1091(b) (emphasis added).

¹⁹⁶ T.878:7-21; 894:24-895:14.

¹⁹⁷ T.880:16-21.

IPL witness Dr. Peter Valberg testified extensively regarding the safety of RF.¹⁹⁸ A brief review of Dr. Valberg's credentials in the area of radio frequency exposure and health risk assessment show that he is well-qualified to render a credible assessment of the safety of the smart meter technology being deployed by IPL. Dr. Valberg holds a Ph.D. in physics and an M.S. in human physiology, both from Harvard University.¹⁹⁹ He taught at Amherst College before returning to Harvard University and working for 25 years as a researcher and teacher in the Department of Environmental Health at Harvard's School of Public Health.²⁰⁰ He is a fellow of the Academy of Toxicological Sciences.²⁰¹ Dr. Valberg's teaching and research experience includes work relating to radio frequency effects on human health.²⁰² He served on the Harvard Advisory Committee on EMF and Human Health. He has made numerous presentations on the health effects of RF- and EMF-related scientific conferences and symposia.²⁰³ Dr. Valberg has also worked with the World Health Organization (WHO) on the health effects of EMF and RF as they apply to cell phone technology.²⁰⁴

Dr. Valberg notes that he undertakes several activities to maintain his expertise in the area of health effects related to RF waves and EMF, including review of published research articles and journals on a continuing basis.²⁰⁵ As discussed in greater detail below, Dr. Valberg's testimony persuasively establishes that radio wave transmissions associated with IPL's AMI system pose no threat to human health.

¹⁹⁸ IPL Exhibit Valberg Direct; IPL Exhibit Valberg Rebuttal.

¹⁹⁹ IPL Exhibit Valberg Direct at 19.

²⁰⁰ *Id.*

²⁰¹ IPL Exhibit Valberg Direct at 19.

²⁰² *Id.* at 3.

²⁰³ *Id.* at 4.

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 5.

First, RF radio, television, and communications transmissions are ubiquitous.²⁰⁶ Cell phones, Internet routers, and cordless telephones are just a few examples of radio-wave sources that surround us all each day.²⁰⁷ There is no indication that society's increasing use of RF over the past 100 years has adversely affected human health.²⁰⁸

Second, IPL's smart meters involve very low levels of RF and infrequent transmissions.²⁰⁹ This translates to RF exposures that are "far below health-protective standards and guidelines developed for public exposure to RF."²¹⁰

Third, no public health agency has identified RF from smart meters as hazardous to human health.²¹¹ In his testimony, Dr. Valberg identifies eleven "blue ribbon" reports developed by independent panels of experts which have comprehensively examined the safety of RF.²¹² He concludes that these panels generally concur that current guidelines for RF exposure adequately protect public safety.²¹³ The clear consensus within the scientific community is that RF technology is safe.

Dr. Valberg's testimony also demonstrates the baseless nature of the Intervenor's claims relating to the alleged health effects of RF. Intervenor focused much of their questioning of Dr. Valberg on alleged carcinogenic effects of RF technology. These concerns are misplaced and rely on cherry-picked science that does not represent the mainstream of scientific thought.

The vast majority of studies cited by Intervenor witness Dr. Magda Havas do not concern AMI (smart) meters, but rather focus on other dissimilar sources of RF such as

²⁰⁶ *Id.* at 7.

²⁰⁷ *Id.*

²⁰⁸ *Id.* at 8

²⁰⁹ *Id.* at 8.

²¹⁰ *Id.* at 10.

²¹¹ *Id.* at 11.

²¹² *Id.*

²¹³ *Id.* at 12; IPL Exhibit Valberg Schedule B.

cell phones, cell phone base stations, radio and TV broadcast antennas, and radar installations.²¹⁴ These sources are not comparable to smart meters in frequency, intensity, duty cycle, and other critical considerations.²¹⁵

Out of an abundance of caution, the International Agency for Research on Cancer (IARC) designated of RF electromagnetic fields as “possibly” carcinogenic to humans (Group 2B).²¹⁶ Importantly, this classification is one of the lowest on IARC’s scale of “possible” risk, placing it in the company of coconut oil, coffee, and pickled vegetables.²¹⁷ In addition, IARC classifications are made without reference to the *quantity* of exposure; among all RF exposures, smart meters constitute one of the weakest sources.²¹⁸ IARC’s classification should not be interpreted as evidence that AMI meters are dangerous to anyone.²¹⁹

A similar conclusion should be reached regarding a recent National Toxicology Program (NTP) study involving rats exposed to cell-phone RF. While the NTP study showed a statistical increase in tumors in male rats, there was no increased risk of any cancer among female rats or among male or female mice in the study.²²⁰ Importantly, the American Cancer Society has stated that the NTP studies do not actually tell us how certain scenarios of cell phone use change our long term risks of getting cancer.²²¹ This is at least in part because the NTP studies “were performed at very high signal strengths, near but below levels that could cause animal tissue to heat up.”²²²

²¹⁴ IPL Exhibit Valberg Rebuttal at 4.

²¹⁵ *Id.*

²¹⁶ IPL Exhibit Valberg Direct at 14.

²¹⁷ *Id.*

²¹⁸ *Id.* (as modified during examination at T.479:21-25).

²¹⁹ *Id.* at 14-15.

²²⁰ IPL Exhibit Valberg Rebuttal at 5-6.

²²¹ T.542:6-8; Lipman-Matara Hearing Exhibit 15.

²²² T.542:8-11 (quoting Matara-Lipman Hearing Exhibit 15).

Moreover, the NTP study results cannot be translated to smart meters, including the Sensus smart meter that IPL is deploying. The RF exposure levels in the NTP study were vastly higher than those possible for Sensus smart meters.²²³ To achieve equivalent exposure to RF in a 70 kilogram human would require continuous RF energy input of 105, 210, or 420 Watts of RF energy over nine hours per day for two years.²²⁴ This is markedly different from the short duty cycle and 1 ¼ Watt transmitter used in a Sensus meter.²²⁵

D. The meters selected by IPL do not create impermissible levels of conducted emissions or “dirty” electricity.

IPL’s Sensus Stratus meter and digital Itron C1S meter meet all standards for conducted emissions or “dirty” electricity. As IPL witness Valberg explains in his direct testimony, “dirty electricity” is a term “created to describe the appearance of higher-frequency signals on power lines designed to carry low frequency (60 Hertz [Hz]) electric power.”²²⁶

Part 15, Subpart B of the FCC rules contain standards for conducted emissions from Class B digital devices such as meters.²²⁷ Unlike the FCC’s RF exposure standards, the Part 15 rules are not designed as health-based standards, but are instead intended to prevent interference between digital devices and ensure electromagnetic compatibility.²²⁸ Indeed, “dirty electricity” does not represent a

²²³ IPL Exhibit Valberg Rebuttal at 6.

²²⁴ *Id.*

²²⁵ *Id.*

²²⁶ IPL Exhibit Valberg Direct at 17.

²²⁷ See 47 C.F.R. § 15.107(a).

²²⁸ IPL Hearing Exhibit 220 at 2-3; T.888:5-19.

scientific or technical characterization.²²⁹ No reliable evidence suggests that “dirty electricity” from RF on power lines causes deleterious health effects.²³⁰

The Sensus AMI meter meets FCC Part 15 requirements and, as such, carries a label stating that the device complies with Part 15 of the FCC rules.²³¹ IPL Hearing Exhibit 216 contains the results of tests conducted by Advance Compliance Solutions demonstrating that the Sensus meter used by IPL meets FCC Part 15, Subpart B standards for both radiated and conducted emissions.²³² IPL has demonstrated that the Sensus meter is compliant in this respect.

IPL Hearing Exhibit 216 shows conducted emissions that are “very, very low,” and “orders of magnitude less” than levels observed by Intervenor witness William Bathgate in his written testimony.²³³ The reason for this discrepancy is straightforward. ACS’s test properly isolated all other sources of conducted emissions that could have been on the power line, allowing ACS to verify that the meter itself does not cause issues.²³⁴ Without properly filtering the power line before conducting the test, it is impossible to save whether one device on that power line is the cause of the measurement observed.²³⁵ Because Mr. Bathgate failed to isolate the power line before testing IPL’s meters, his testing results should be rejected as flawed.

Intervenors do not dispute that the ACS testing results in Exhibit 216 show conducted emissions within FCC limits.²³⁶ Instead, Intervenors attack ACS’s testing based on an alleged failure to include data on conducted emissions at 0.3 Megahertz

²²⁹ IPL Exhibit Valberg Direct at 17.

²³⁰ *Id.*

²³¹ See T.363:13-364:7.

²³² T.313:10-22; 378:23-379:1.

²³³ T.357:25-358:3.

²³⁴ T.358:8-359:7.

²³⁵ T.358:18-21; 397:12-25.

²³⁶ T.860:9-13.

(MHz).²³⁷ Mr. Bathgate insinuates that data collected at 0.3 MHz would show noncompliance, with no apparent data or basis for this assertion.²³⁸ But the testing results in Exhibit 216 do in fact include conducted emissions data at 0.249000, 0.359250, 0.377250, 0.371750, 0.357000, and 0.379500 MHz—all very close to the 0.3 MHz range that Intervenor witness Bathgate insists should be included.²³⁹ While Mr. Bathgate critiques the testing in IPL Exhibit 216, at one point calling ACS's conclusion "crazy,"²⁴⁰ he admits that ACS is a "very professional organization" that he has in fact used for testing in the past.²⁴¹ Mr. Bathgate also could not identify a specific FCC rule that ACS's testing protocol violated, despite testifying as an expert on these matters.²⁴²

While Mr. Bathgate alleged failings in Sensus' testing protocol, his contention is belied by the certifications that Sensus has received. Mr. Bathgate could not testify that any Sensus product had been denied certification when requested,²⁴³ nor had he personally checked to see whether any Sensus products had failed FCC certification.²⁴⁴ Mr. Bathgate similarly admitted that he had no knowledge of the results of any "spot checks" conducted on Sensus meters.²⁴⁵

Intervenors also introduced a second ACS testing report for a Sensus meter as Matara-Lipman Hearing Exhibit 51, which Mr. Bathgate asserted shows that the meter

²³⁷ T.860:25-861:15.

²³⁸ See T.860:16-861:15.

²³⁹ IPL Hearing Exhibit 216, at 25, 28-30; T.873:5-874:2.

²⁴⁰ T.849:13-14.

²⁴¹ T.853:25-854:1; 884:11-14.

²⁴² T.884:15-885:1-5.

²⁴³ T.870:13-17.

²⁴⁴ T.871:9-12.

²⁴⁵ T.891:2-12.

at issue in that report was not in compliance.²⁴⁶ Mr. Bathgate further stated that it was probable that this exhibit came from the FCC website.²⁴⁷ But he could not say whether the meter that is the subject of Hearing Exhibit 51 received FCC certification, whether it remains in service, or whether that meter is the same meter being installed by IPL in Iowa.²⁴⁸ As such, it is unclear how this exhibit has any relevance to this proceeding. In addition, reports prepared to document compliance with Part 15 of the FCC rules do not need to be filed with the FCC.²⁴⁹ In light of this fact, it is not clear what is the purpose of the report contained in Exhibit 51.

In addition, Intervenors have produced no credible evidence that the digital Itron meter that IPL selected as an alternative causes conducted emissions in violation of FCC rules. As above, because Mr. Bathgate's testing used a power line that was connected to several other things in the facility, his testing cannot be used to establish that the Itron meter fails to meet applicable FCC standards for digital devices.²⁵⁰ Indeed, as with the Sensus smart meter, Mr. Bathgate has no evidence or knowledge that showing that Itron has not obtained all FCC permits or approvals for the meters it sells to IPL.²⁵¹ And in a sworn statement in another case, Mr. Bathgate supported the very same Itron C1S meter that IPL has selected for use in the NSMA as a "safe digital meter alternative."²⁵²

²⁴⁶ T.865:15-18; 868:1-9.

²⁴⁷ T.867:5-21.

²⁴⁸ T.868:10-869:6.

²⁴⁹ T.889:13-18.

²⁵⁰ See T.397:12-25.

²⁵¹ T.892:1-5.

²⁵² T.893:17-894:17; IPL Hearing Exhibit 221 at 13.

Intervenor witness Dr. Magda Havas testified that filters could be used to reduce concerns about “dirty electricity.”²⁵³ There is no testimony in this record, other than Dr. Havas’ bald assertion, to support this conclusion. And Dr. Havas is not an engineer.²⁵⁴ She could not point to a filtering system used in a larger community.²⁵⁵ Dr. Havas could not point to any instance of a utility regulator anywhere in the country that has ordered filters to be put onto any devices to filter dirty energy.²⁵⁶

To summarize, there is no basis on this record to conclude that the Sensus Stratus smart meter or Itron C1S digital meter that IPL is deploying would produce dirty electricity. The Board should take no action in response to the Intervenors’ unsupported claims to the contrary.

E. The Sensus AMI meters do not present data privacy risks or security vulnerabilities.

The Sensus AMI meters do not present data privacy or security risks.

First, the Sensus meters do not reveal information about how a particular customer is using energy inside their home or business. Sensus meters being deployed by IPL only measure and transmit data from their own internal sensors.²⁵⁷ The meter has no ability to collect any data from inside the home it is associated with.²⁵⁸ Simply put, IPL’s electric meters measure the total consumption at the location in kilowatt hours, and gas meters measure gas consumption.²⁵⁹ The usage information recorded is not granular enough to reveal detailed information on what devices are being used

²⁵³ T.581:4-582:6.

²⁵⁴ T.578:18-19.

²⁵⁵ T.582:7-18.

²⁵⁶ T.585:24-586:7; 587:12-14.

²⁵⁷ IPL Exhibit Reed Direct at 6.

²⁵⁸ IPL Exhibit Reed Rebuttal at 8.

²⁵⁹ IPL Exhibit Reed Direct at 6; IPL Exhibit Bauer Direct at 16.

when inside a household.²⁶⁰ Furthermore, data request responses from Intervenors Matara and Lipman show that they have no basis for their contention that IPL's smart meters track specific usage or activities within a house.²⁶¹

Second, IPL's AMI system is secure. Data transmitted through the FlexNet network is secure. IPL witness Marc Reed identified the security protocols used to protect "radio packets" of data.²⁶²

Intervenor witness Schoechle argues that AMI presents significant privacy and security risks. But as applied to IPL's systems, this amounts to little more than speculation. He has not reviewed the security of the FlexNet System.²⁶³ He is not aware of any specific examples of hacking involving a licensed, specific bandwidth over radio frequency.²⁶⁴ His proposed solution—not collecting any information at all²⁶⁵—is ridiculous and would necessarily undermine the customer benefits associated with AMI.²⁶⁶

Third, IPL will not misuse data it receives or leave this data vulnerable to a data breach. IPL witness Randy Bauer testified that IPL is committed to protecting customer data in accordance with Iowa Code section 22.7 and Alliant Energy's Privacy Policy.²⁶⁷ Moreover, Alliant Energy's Privacy Policy remains adequate even as IPL deploys smart meters. IPL is essentially collecting the same data that it has always collected, except that it is now collecting consumption data on more frequent intervals.²⁶⁸ Under Alliant

²⁶⁰ *Id.*

²⁶¹ IPL Hearing Exhibit 205; IPL Hearing Exhibit 211.

²⁶² IPL Exhibit Reed Direct at 5; IPL Reed Rebuttal Testimony at 8.

²⁶³ T.814:19-22.

²⁶⁴ T.833:19-24.

²⁶⁵ T.825:23-24.

²⁶⁶ See AMI BACKGROUND, *supra*.

²⁶⁷ IPL Exhibit Bauer Direct at 17.

²⁶⁸ IPL Exhibit Bauer Rebuttal at 10.

Energy's Privacy Policy, IPL is applying the same policies to usage information collected prior to the deployment of AMI meters as it is to information collected after AMI deployment.²⁶⁹ Smart meter deployment does not present a sudden need to modify policies that have and continue to protect customer interests.

F. The Sensus Stratus meters are not a fire hazard.

The Sensus Stratus meters selected for use by IPL do not represent a fire hazard. Here again, the Intervenors produce no evidence that such a risk is actually present and instead speculate that such a risk exists in Iowa.²⁷⁰ The Intervenors' assertions simply lack any factual basis.

The Sensus meters being used by IPL contain safety features designed to prevent fires and have no history of causing fires. In his direct testimony, IPL witness Marc Reed, a Sensus executive, acknowledged that he had knowledge of fires involving a *prior* generation of Sensus smart meter.²⁷¹ Mr. Reed explained that fires involving meters typically result from a poor connection between the meter blades and the customer's meter panel or socket on the premises, which causes the meter to overheat.²⁷² Mr. Reed further testified that this risk had been resolved through a new safety feature that disconnects the meter if a high temperature is detected and resolves the possibility of the meter catching fire.²⁷³ This renders the Sensus meters "extremely safe[.]"²⁷⁴ Sensus has had no fires with this particular meter out of millions installed.²⁷⁵

²⁶⁹ IPL Exhibit Bauer Direct at 17; OCA Hearing Exhibit 110.

²⁷⁰ See, e.g., Intervenor Matara Schoechle Rebuttal Testimony at 18 (asserting that there appears to be "a significant risk of fire associated with electronic meters" but failing to identify any relevant evidence to support that this is the case for the Sensus meters being deployed by IPL).

²⁷¹ See T.338:6-8.

²⁷² See T.338:13-16.

²⁷³ T.338:24-339:4; see also IPL Exhibit Bauer Rebuttal at 26.

²⁷⁴ T.339:4-5

²⁷⁵ T.339:11-15.

Mr. Reed's testimony persuasively and conclusively demonstrates that any prior risk of fire associated with smart meters has been addressed through design changes. The Sensus smart meters being utilized by IPL are not a fire hazard.

V. AMI meters do not impact property values.

The only credible evidence in this record on the impact of AMI meters on property values is that of appraiser Dennis Cronk. Mr. Cronk has concluded that there is no impact.

In their rebuttal testimony, the Intervenors introduced the issue of the alleged impact on property values of AMI technology.²⁷⁶ Their witnesses were Emily Kelly and Loren Town. Ms. Kelly's experience is primarily in teaching, running a promotional materials company, and consulting for Reader's Digest.²⁷⁷ She does own some commercial property in Fairfield, which consists of eight rental units.²⁷⁸ Ms. Town is a real estate agent, and has experience talking to individuals who are potential buyers of Vastu homes.²⁷⁹ However, neither is a real estate appraiser.

Dennis Cronk has been a licensed appraiser in Iowa since 2002.²⁸⁰ He has completed approximately 1,000 appraisals, including the full range of properties, with values of those properties ranging from less than \$10,000 to more than \$40,000,000.²⁸¹ As detailed in his testimony, and as relevant to Ms. Town, real estate agents are lightly trained salespersons.²⁸² In contrast, real estate appraisers are extensively trained in

²⁷⁶ Lipman Exhibit Kelly Rebuttal at 3; Matara Exhibit Town Rebuttal at 4.

²⁷⁷ Lipman Exhibit Kelly Rebuttal at 2; IPL Exhibit 203 at 4 (qualifications of Ms. Kelly).

²⁷⁸ *Id.*

²⁷⁹ Matara Exhibit Town Rebuttal at 2-3; IPL Exhibit 203 at 3 (qualifications of Ms. Town).

²⁸⁰ IPL Exhibit Cronk Rebuttal at 2.

²⁸¹ *Id.* at 3-4.

²⁸² *Id.* at 3.

the process of objectively evaluating market value.²⁸³ By training and experience, Mr. Cronk is highly qualified to render a professional opinion on the issue of the impact of AMI on real estate value. Ms. Town and Ms. Kelly are not.

There is no market data to support a conclusion that metering technology has an impact on the value of a property.²⁸⁴ In the absence of that data, Mr. Cronk relied on his extensive experience in rendering a professional opinion that metering technology does not have a measureable impact on market value.²⁸⁵ He testified that a variety of characteristics that are unique to a property do not necessarily impact value, and it is his opinion that buyers are as likely to be happy with the advantages of an AMI meter as they are to be unwilling to accept the perceived disadvantages of the same.²⁸⁶ In response to Ms. Kelly's claim that her units are unrentable, he concluded that small preferences do not generally lead to rejection of a rental unit, and he methodically presented Ms. Kelly's own facts to show why the units are eminently rentable.²⁸⁷ He also noted that the Intervenor's have no support for the claim that the value of homes will be diminished in Fairfield, and he noted that the Maharishi University has been attracting people to Fairfield for years, a draw that will not be diminished by AMI technology.²⁸⁸

Ms. Kelly completes her testimony with a conclusion that IPL's unwillingness to offer DG owners a bi-directional analog meter is a violation of Iowa Code section

²⁸³ *Id.* at 3, 5.

²⁸⁴ *Id.* at 6; T.185:7-18.

²⁸⁵ IPL Exhibit Cronk Rebuttal at 7; T.209:21-210:10.

²⁸⁶ IPL Exhibit Cronk Rebuttal at 7-8; T.183:14-25.

²⁸⁷ IPL Exhibit Cronk Rebuttal at 9, 10. By her own account, Ms. Kelly notes that there is a housing shortage in Fairfield, her units are well-maintained, they are built to a high code standard, they are relatively new, and she has received grants to help build them (which will allow her to rent at rates below owners who did not receive such grants). *Id.* at 10; Lipman Exhibit Kelly Rebuttal at 4. All of these factors make Ms. Kelly's units rentable.

²⁸⁸ IPL Exhibit Cronk Rebuttal at 9, 10.

476.21, specifically the provision that precludes action that “subject[s] the customer to any other prejudice or disadvantage based on the customer’s use or intended use of renewable energy sources.”²⁸⁹ That conclusion can only be reached if there is no basis for the action IPL is taking. As described, *supra*, there is a substantial basis for not providing analog technology generally, and specifically for not allowing it (or non-AMI digital technology) as a metering option for DG. To the extent Ms. Kelly argues that same point as to the costs for the NSMA option, as argued in Part III, *supra*, IPL’s \$15 charge per meter per month is accurately based on the costs to provide the service. Establishing rules and pricing services based on legitimate differences between customers is neither discriminatory nor inappropriately disadvantageous.²⁹⁰

IPL understands the strongly held beliefs that underlie many of the Intervenors’ positions in this case, as well as those of their witnesses. But facts matter, and there is no credible evidence to support a conclusion that property values are impacted by metering technology or that IPL has discriminated against DG owners in violation of Iowa Code section 476.21.

VI. IPL’s customer communications and outreach regarding smart meter deployment are reasonable.

IPL has communicated exhaustively with customers regarding its AMI meter roll-out. These efforts have been more than reasonable. IPL has balanced the need to ensure customers have relevant information about IPL’s AMI Project while also avoiding an overload of information that could have caused customer confusion. As discussed

²⁸⁹ Lipman Exhibit Kelly Rebuttal at 4-5.

²⁹⁰ See Order Denying Request for Formal Complaint Proceedings, *In Re: Gregory Swecker v. Midland Power Cooperative*, Docket No. FCU-2011-0008, April 22, 2011, at 9-10 (finding that different rates for different generation products are not a violation of Iowa Code section 476.21 because the differences were based on facts distinguishing the two products).

herein, OCA and the Intervenor's insinuations that more communication with customers is necessary are simply unfounded and are contrary to the Board's own rules.

IPL has communicated with customers regarding AMI in a variety of ways and will continue to do so through the AMI meter roll-out.²⁹¹ IPL uses a repeatable communications process to notify customers when smart meter installation is scheduled for their area.²⁹² IPL's communications include two separate mailed items and an automated phone call to customers in advance of a contractor's arrival to upgrade their meter.²⁹³ The mailed items include a postcard sent approximately 30 days prior to the scheduled meter exchange and a brochure with more detailed information sent out 15 days prior to the scheduled meter exchange date.²⁹⁴ The automated call is placed the Friday before the scheduled install date.²⁹⁵ When the contractor arrives, he knocks at the door as another attempt to notify the customer.²⁹⁶ A door hanger is left upon completion of meter exchange.²⁹⁷

IPL also responds to customer contacts regarding AMI. When a customer contacts IPL via phone with an AMI-related concern, a customer support associate informs the customer about AMI meters and answers questions or concerns about the technology.²⁹⁸ If the customer does not want an AMI meter, a member of the meter deployment team will add the customer to the "hold list" and provides the customer with additional information regarding AMI.²⁹⁹

²⁹¹ IPL Exhibit Leyden-Van Gundy Direct at 3.

²⁹² *Id.* at 2.

²⁹³ *Id.*; T.736:9-25.

²⁹⁴ T.737:1-7.

²⁹⁵ T.737:7-9.

²⁹⁶ IPL Exhibit Leyden-Van Gundy Direct at 2.

²⁹⁷ *Id.* at 2-3.

²⁹⁸ *Id.*

²⁹⁹ *Id.* at 4.

IPL also provided all residential customers with a Board-approved notice regarding its Non-Standard Meter Alternative proposal via a bill insert.³⁰⁰ The notice was first inserted in bills that were issued on August 3, 2018 and continued through one full bill cycle.³⁰¹ A copy of the Board-approved notice was provided in this record as IPL Exhibit Leyden-Van Gundy Direct Schedule A.

AMI deployment represents a complex effort. As with any such complex deployment process, IPL has acknowledged that inadvertent error or mistake could have caused a small number of customers to have their meter exchanged during the deployment process, even though they wished to have the NSMA. IPL has made a proposal that it believes can reasonably rectify this situation. In IPL Hearing Exhibit 218, IPL offers to contact any customer on the “hold list” as of November 6, 2018, who has an AMI meter and offer the customer the opportunity to choose the NSMA, if the Board so desires. This should ensure that these potentially impacted customers have an opportunity to receive a non-smart meter if they so choose.

VII. The Board should approve the uncontested request by IPL to modify its inspection frequency for atmospheric corrosion for intrastate pipelines.

No party to this case, other than IPL, put in evidence on the IPL request to modify its inspection frequency for atmospheric corrosion for intrastate pipelines. No party opposes the request. The request should be granted.

IPL made this request in Docket No. RG-0150,³⁰² and the Board consolidated that request with this docket because of its intersection with AMI issues.³⁰³ IPL filed

³⁰⁰ *Id.* at 3.

³⁰¹ *Id.*

³⁰² See Request to Revise Atmospheric Corrosion Survey per 40 CFR Part 192.1013, Docket No. RG-0150, June 16, 2017, and Updated Information – Request to Revise Atmospheric Corrosion Survey per 40 CFR Part 192.1013, Docket No. RG-0150, February 2, 2018.

testimony from Richard Sublett, Senior Manager Compliance and Operational Performance indicating, in summary, the following:

- As a result of the AMI Project, IPL will have a reduction in meter readers, who traditionally conducted these corrosion inspections.³⁰⁴
- IPL is requesting to change its inspection frequency for atmospheric corrosion for intrastate gas pipelines exposed to the atmosphere from once every three calendar years (not to exceed 39 months) to 1) at least once every four calendar years (not to exceed 51 months) outside of business districts; 2) at least once every calendar year (not to exceed 15 months) inside business districts; and 3) at least once every three calendar years (not to exceed 39 months) in areas where there may be greater corrosion rates.³⁰⁵
- IPL will increase distribution leak surveys, which will provide value for the risk models used in IPL's Distribution Integrity Management Plan (DIMP).³⁰⁶
- The request was reviewed by Alliant Energy's Gas Integrity and Planning Department, as required by the DIMP, which concluded that no additional risk would result from the reduction in inspection frequency.³⁰⁷

³⁰³ See Order Suspending and Docketing Proposed Tariffs for Further Review and Consolidating Filings for Consideration, Docket Nos. TF-2018-0029, TF-2018-0030, RG-0150, March 28, 2018, at 2-3.

³⁰⁴ IPL Exhibit Sublett Direct at 2.

³⁰⁵ *Id.*

³⁰⁶ *Id.* at 6.

³⁰⁷ *Id.* at 5-6.

- On average, only seven leaks per year have resulted from atmospheric corrosion in an IPL system that is comprised of approximately 215,000 gas services.³⁰⁸
- The Board has authority to approve this request pursuant to Iowa Code sections 479A.1 and 479A.4, as well as 199 IAC 10.12(1)(b).³⁰⁹

No party other than IPL has entered any evidence on this issue, and no party has otherwise objected to IPL's position on this limited issue. The facts and relevant authority support a grant of IPL's request.

CONCLUSION

Metering technology is advancing, and IPL is installing that technology for the benefit of its customers and the Company. In recognition of the strong feelings a small minority of its customers have on AMI technology, IPL has offered the NSMA, which is a digital meter for electric customers and the obligation on unaltered gas meters for self-reads. This proposal is consistent with similar opt-out offerings around the country, while being appropriately circumscribed and priced to reflect IPL-specific issues. There is no technological, health, or safety issue that supports rejection of IPL's NSMA, which on the electric service uses digital meters that have been in use in IPL's service territory for decades. The Board should approve the NSMA and close the related C-files consolidated in this docket.

³⁰⁸ *Id.* at 7.

³⁰⁹ *Id.* at 3-4.

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Respectfully submitted,

Interstate Power and Light Company

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