PROJECT NO. 40190

PROJECT RELATING TO ADVANCED METERING ISSUES	**§**	**BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS**

ONCOR ELECTRIC DELIVERY COMPANY LLC'S RESPONSES TO QUESTIONS FROM THE PUBLIC FILED BY STAFF AND MR. TIM HONEYCUTT

Oncor Electric Delivery Company LLC ("Oncor" or "Company") offers the following responses ("Responses") to the questions submitted by the public that were filed in this proceeding by Staff on August 15, 2012 and the questions submitted by Mr. Tim Honeycutt on August 15, 2012.

I. Questions From Public Filed by Commission Staff

Section One – Questions from State Representative David Simpson

Question No. 1:

What portion of which statute, PUCT rule, settlement agreement, tariff or other document are the TDUs relying on to tell customers that the deployment of smart meters are mandatory without exception?

Oncor Response:

Oncor is required by Commission order to deploy smart meters to all retail electric customers in its service area, except those customers who are required to have an interval data recorder meter. In Docket No. 35718, *Oncor Electric Delivery Company LLC's Request for Approval of Advanced Metering System (AMS) Deployment Plan and Request for AMS Surcharge*, the Commission approved an advanced meter deployment plan through which Oncor is to provide smart meters to *all* retail electric customers in Oncor's service area, except those customers who are required to have an interval data recorder meter. The Commission's order in Docket No. 35718 approved a settlement that was supported by a broad cross-section of parties, including the Commission Staff, the Office of Public Utility Counsel, the Steering Committee of Cities Served by Oncor, the Alliance for Retail Markets, the Texas Energy Association for Marketers, IBEW Local 69, Reliant Energy Retail Services LLC, and TXU Energy Retail Company LLC.

Question No. 2:

In the interest of customer service, if a TDU does consider deployment of smart meters mandatory under their settlement agreement, does the TDU have the ability and authority to request an opt-out provision for customers who request it under PUCT rule 25.130(d)(10)?

Oncor Response:

Oncor considers its deployment of smart meters mandatory to all retail customers, except those customers who are required to have an interval data recorder meter, as discussed in response to Question No. 1. While a utility is allowed to seek an amendment to its approved advanced meter deployment plan under Commission Substantive Rule 25.130(d)(10), seeking an amendment to include an opt-out provision could be viewed as a violation of the settlement reached with other parties in Docket No. 35718 and would be inconsistent with the Commission's order approving the AMS deployment in Docket No. 35718.

Question No. 3:

What provisions or accommodations are being implemented for the small percentage of the population with verifiable medical sensitivity to RFID technology?

Oncor Response:

Oncor takes customers' concerns seriously and attempts to work with all customers to resolve their concerns whether their concern is with smart meters or another electric delivery issue. For customers with perceived medical conditions related to radiofrequency ("RF") technology, Oncor first talks to those customers to better understand each customer's concerns and to provide more information about smart meters and RF technology, which sometimes alleviates the customer's concerns. In addition, when a customer's concerns have not been resolved and it is technically feasible, Oncor may reduce the power output level of the radio transmitter associated with the smart meter.

Question No. 4:

What studies or reports are the TDUs relying on to ensure the safety of the cumulative effect of multiple meters in an area transmitting multiple times a day?

Oncor Response:

The primary study that Oncor is aware of is titled *Radio-Frequency Exposure Levels from Smart Meters: A Case Study of One Model* and was prepared by the Electric Power Research Institute (February 2011) ("EPRI Report"). The study underlying the EPRI Report was conducted on a "meter farm" that contained 7,000 meters attached to structures across a 20-acre area, with each structure consisting of a rack of 10 meters. Measurements were taken from a

rack of continually operating meters over a four-day period. EPRI Report at p. 4.[1] The EPRI Report concluded that, for *continuous* operation at 1 foot from the rack, the exposure was about 8% of the Federal Communications Commission ("FCC") limit, with exposure diminishing roughly as the inverse of the distance from the rack. It is the FCC's responsibility to determine the appropriate functioning of RF devices to ensure public health and safety.

Question No. 5:

On average, how many times a day do the currently deployed smart meters transmit any signal?

Oncor Response:

The average smart meter transmits for approximately 96 seconds in a 24-hour day. The average smart meter transmits 1741 times per day with an average transmission duration of 55 milliseconds per transmission. These transmissions include all synchronization, maintenance, meter reads, meter/system alarms, interactions with back-office systems, and expected routings.

Section Two - Questions Submitted to meterforum@puc.texas.gov

Question No. 1:

If the TDUs/PUC considers these meters to be safe, effective, and more efficient, why didn't they allow a full review and vote by consumers instead of sneaking over our fences, forcing them on unsuspecting citizens, with threats, intimidation, and bullying?

Oncor Response:

Oncor's customers had ample opportunity to participate and provide input in the process that ultimately resulted in the deployment of smart meters. First, after the Texas Legislature passed a law to encourage the deployment of smart meters, the Commission conducted a full, comprehensive rulemaking governing the implementation of the Legislature's directive regarding smart meters (Project No. 31418, *Rulemaking Related to Advanced Metering*). That rulemaking was open to participation by the public, and notice of that rulemaking was posted in the Texas Register and was available on the Commission's website. Second, with respect to Oncor's deployment of smart meters, public notice of Docket No. 35718, in which Oncor's proposed advanced meter deployment plan was filed, was posted in newspapers in every county that Oncor serves for four consecutive weeks in 2008. Several individuals did file comments in Docket No. 35718 in response to the public notices provided, and those comments were

[1] The EPRI Report notes that "while the meters were specially programmed to operate continuously for the measurement study, when actually deployed they transmit intermittently for very brief periods." EPRI Report at p. 4.

considered by the Commission. Docket No. 35718 was settled, and that settlement was supported by a broad cross-section of parties, including the Commission Staff, the Office of Public Utility Counsel, the Steering Committee of Cities Served by Oncor, the Alliance for Retail Markets, the Texas Energy Association for Marketers, IBEW Local 69, Reliant Energy Retail Services LLC, and TXU Energy Retail Company LLC.

Question No. 2:

How liable is Oncor for yanking out meters without first considering medical devices and/or A/C units that may be running.....causing major electronic damage to appliances, and medical emergencies for Sr's?

Oncor Response:

In general, Oncor's potential liability as it relates to the delivery of service to its retail customers is governed by Section 5.2 of Oncor's Commission-approved Tariff for Retail Delivery Service, which is publicly available on Oncor's website.

Question No. 3:

Is Oncor bonded for charges that may occur when they blatantly cut off power to homes, causing heat related strokes, auto-immune attacks, loss of food, damages to starter devices in power systems, or fatalities?

Oncor Response:

Please see the response to the previous question (Section I. Questions From Public Filed by Commission Staff, Section Two – Questions Submitted to meterforum@puc.texas.gov, Question No. 2).

Question No. 4:

What RIGHT do they have to dictate what is in our best interests, using OUR money, creating havoc and illnesses in our lives when we are current on our account and have excellent credit?

Oncor Response:

Oncor derives its right to deploy smart meters and collect a surcharge associated with deployment of smart meters from the directives of the Texas Legislature and by order of the Commission. The Texas Legislature stated its intent that advanced meters be deployed as rapidly as possible and required the Commission to establish a non-bypassable surcharge for an electric utility to use to recover reasonable and necessary costs incurred in deploying advanced metering. PURA § 39.107(h), (i). In Docket No. 35718, *Oncor Electric Delivery Company LLC's Request for Approval of Advanced Metering System (AMS) Deployment Plan and Request for AMS Surcharge*, the Commission approved an advanced meter deployment plan through

which Oncor is to provide smart meters to *all* retail electric customers in Oncor's service area, except those customers who are required to have an interval data recorder meter. The Commission's order in Docket No. 35718 also approved a surcharge that allows Oncor to recover costs associated with deployment of the smart meters. The Commission's order in Docket No. 35718 approved a settlement that was supported by a broad cross-section of parties, including the Commission Staff, the Office of Public Utility Counsel, the Steering Committee of Cities Served by Oncor, the Alliance for Retail Markets, the Texas Energy Association for Marketers, IBEW Local 69, Reliant Energy Retail Services LLC, and TXU Energy Retail Company LLC.

Question No. 5:

In October 2010, Beijing, China, the annual meeting for power utilities, governments and industry leaders met. The front and center headline for this event was "Zigbee, Control Your World - Smart Metering - It's Not Just For Meter Reading Anymore". Please explain why I should want a device to do more than just meter reading on my house.

Oncor Response:

The smart meters provide additional benefits to customers beyond just recording the amount of electricity used at a residence. Those benefits include access to meaningful information about your energy consumption through www.smartmetertexas.com or an in-home monitor, which empowers customers to better manage their energy usage and control costs; access to new pricing and enhanced service possibilities that were not previously available (such as demand response programs or pre-paid service); and expedited connection of service for move-ins or the ability to quickly change Retail Electric Providers. From a system operational perspective, smart meters also provide customers with benefits by enabling early outage detection and quicker identification of power quality issues.

Question No. 6:

Is it true that a future goal is to have appliances replaced with those containing RF so that the smart meter can speak to my appliances and turn them off in peak hours?

Oncor Response:

This is not Oncor's goal, as Oncor does not sell or endorse any specific kind of appliance. Oncor does, however, provide the smart meter functionalities needed to support this scenario for customers who wish to use it. Ultimately, that decision resides with the customer.

Question No. 7:

Sometime in 2009 or 2010 President Obama told us on national TV that our "energy bills would necessarily skyrocket" when he was speaking about his Cap and Trade bill. How can that be when we are told that smart meters will save us money on our electricity bills?

Oncor Response:

Smart meters can help a customer control costs associated with their use of electricity by providing customers access to meaningful information about their energy consumption through www.smartmetertexas.com or an in-home monitor, empowering them to better control their usage. This benefit was recognized by the Texas Legislature when it stated its intent that smart meters should be "deployed as rapidly as possible to allow customers to better manage energy use and control costs." PURA § 39.107(i).

Question No. 8:

I am confused about the ongoing concern for energy scarcity when the Feds are closing power plants and refusing permits for new ones. Seems like the Feds are the ones creating the scarcity. Who is responsible for these decisions to close power plants and then restrict what's left?

Oncor Response:

Oncor does not own or operate any power plants and is not responsible for decisions related to the closure of power plants.

Question No. 9:

Most citizens don't understand the full extent of the technology and capabilities of the smart meter. Why haven't these capabilities been fully disclosed?

Oncor Response:

The full capabilities of the smart meters deployed by Oncor are disclosed in the advanced meter deployment plan that Oncor filed and the Commission approved in Docket No. 35718. Those capabilities are also described in Commission Substantive Rule 25.130(g). Moreover, Oncor has implemented a Commission-approved customer education program designed to educate customers about the capabilities and usage of smart meters.

Question No. 10:

Do smart meters have anything whatsoever to do with the United Nations' Agenda 21 and Sustainable Development recommendations? Is there any correlation or connection at all?

Oncor Response:

No.

Question No. 11:

With all of the backlash from the public about smart meters, why in the world is the PUC still pushing so hard for their installations? Why are the companies like Oncor pounding us into submission? This tactic seems awfully heavy-handed for Americans. After all, we don't live in Russia or China or North Korea.....

Oncor Response:

Oncor respectfully disagrees with the characterization of Oncor's actions described in the question. Oncor is required by Commission order to deploy smart meters to all residential retail electric customers, with limited exceptions. In Docket No. 35718, *Oncor Electric Delivery Company LLC's Request for Approval of Advanced Metering System (AMS) Deployment Plan and Request for AMS Surcharge*, the Commission approved an advanced meter deployment plan through which Oncor is to provide smart meters to *all* retail electric customers in Oncor's service area, except those customers who are required to have an interval data recorder meter. The Commission's order in Docket No. 35718 approved a settlement that was supported by a broad cross-section of parties, including the Commission Staff, the Office of Public Utility Counsel, the Steering Committee of Cities Served by Oncor, the Alliance for Retail Markets, the Texas Energy Association for Marketers, IBEW Local 69, Reliant Energy Retail Services LLC, and TXU Energy Retail Company LLC.

Question No. 12:

What must I do to get the smart meter off of my house? The tactics Oncor used to get it there were downright unethical - a complete transgression of all that is right and decent in this country - a total disregard for civility and courtesy. After having indicating to me that I did not have to have a smart meter installed without my consent, Oncor did it anyway.

Oncor Response:

Please see the response to the previous question (Section I. Questions From Public Filed by Commission Staff, Section Two – Questions Submitted to meterforum@puc.texas.gov, Question No. 11).

Question No. 13:

Regarding the easement (is it the Tariff for Retail Delivery?) that Oncor references: Surely some limitations exist on just how much Oncor can do to my property. Will someone explain what this easement allows and disallows? The document is 178 pages long and I am struggling to decipher it.

Oncor Response:

At least three sections of Oncor's Commission-approved Tariff for Retail Delivery Service address Oncor's right to access a retail customer's premises. Those tariff sections provide as follows:

Section 5.4.8

> Company's duly authorized representatives have the right of access to Retail Customer's Premises at all reasonable hours, or at any hour if for the sole purpose of restoring Delivery Service, to: inspect, erect, install, maintain, upgrade, convert, remove, or replace Company's wiring apparatus and other facilities; read the Meter; and perform other activities necessary to provide Delivery Service, including tree trimming and tree removal where such trees in the opinion of Company constitute a hazard to Company personnel or facilities, or to the provision of continuous Delivery Service, provided, however, that such representatives comply with all applicable site-specific safety requirements which have been communicated by Retail Customer in writing to Company. Such personnel must exhibit a photo-identification badge to gain access. Failure to provide access may result in suspension of Delivery Service and/or additional charges under the appropriate Commission approved Tariff that shall be billed to Retail Customer's designated Competitive Retailer. Company will notify Retail Customer's designated Competitive Retailer of Retail Customer's failure to provide access. Retail Customer shall not grant access to the facilities of Company and the Meter except to authorized Company representatives.

6.1.2.2.3.3 Transformer and Equipment

> Company provides, installs, owns and maintains transformer(s) and equipment for Retail Customers taking service at secondary voltage. Retail Customer provides without cost to Company space on Retail Customer's Premises suitable to Company for the installation, operation, and maintenance of transformers and other equipment required to provide Delivery Service to the Retail Customer. Retail Customer provides adequate and accessible pad space as determined by Company to allow transformer equipment maintenance and replacement. Required space for equipment considers any above ground construction or portion of a building which extends over the pad. Passageways adequate to accommodate trucks or other necessary lifting and hauling equipment are provided by Retail Customer to allow replacement of transformers and other devices.

6.1.2.2.4 Meter

> All Meters used to measure the amount of Electric Power and Energy delivered by Company for use in the calculation of Delivery System Charges, whether Company or Non-Company owned, are installed and maintained by Company. Meters shall be located outside the building. If the customer requires a meter location other than outside the building and Company approves such location, the customer shall install and own the electric service conductors from a point of

delivery outside of the building (either secondary transformer terminals or service enclosure). AU Meter transformers and transockets shall be furnished and owned by Company for these purposes. Where Retail Customer requests the installation of a Company Meter other than Company's standard Meter, Retail Customer pays the appropriate installation and monthly maintenance cost in accordance with the applicable rate schedule in Section 6.1.2 of this Tariff.

Company may, at its option and at its expense, relocate any Company-owned or Non-Company Owned Meter. In case of a relocation made necessary due to inaccessibility, hazardous location, or dangerous conditions for which Retail Customer is responsible, or in order to prevent a recurrence of unauthorized use of Delivery Service or tampering with equipment, Retail Customer, or Retail Customer's Competitive Retailer may be required to relocate Retail Customer's service facilities and Company facilities, including the Metering Equipment to a location agreeable to Company at the Retail Customer's expense.

Under no circumstances is any meter installation to be moved or relocated except as authorized by Company.

Question No. 14:

In locating Wireless Tower Antennas and Smart Meter Routers, how big of an area do they cover?

Oncor Response:

The area of transmittal between wireless tower antennas and smart meter routers varies substantially based on geography and customer density. On average, the area for routers on Oncor's system is approximately 5 square miles, and on average, the area for collectors on Oncor's system is approximately 125 square miles.

Question No. 15:

The frequencies from routers, antennas and other wireless infrastructure are going through building materials, fire separations and hitting anything in their path. Can the utility provide the attenuation coefficients for the building materials including electrical/mechanical systems as well as documentation from engineers showing attenuation (elimination) of the frequencies inside buildings?

Oncor Response:

Oncor does not have the requested information. However, the smart meters and related equipment deployed by Oncor comply with FCC regulations for communications within the unlicensed RF bands. It is the FCC's responsibility to determine the appropriate functioning of RF devices to ensure public health and safety, and its regulations were adopted to govern the impact of RF emissions on infrastructure and the public in general. The RF signals emitted from

the smart meters deployed by Oncor are well below those of other common devices, including cellular telephones, baby monitors, and microwave ovens.

Question No. 16:

Can the utility please show documentation that the Smart Meters were tested for accuracy under full load EMF of the routers, antennas and other wireless infrastructure?

Oncor Response:

Accuracy testing of the smart meters being deployed by Oncor is performed under conditions, via a custom software program, that result in the radio module generating continuous communications transmissions. Consequently, the ANSI qualification test data for meter accuracy is obtained under what is considered to be continuous or "maximum case" RF conditions. The radio transmitter antenna under the meter cover is in very close proximity (a few inches) to the measurement circuitry. Consequently, the highest levels of RF presented to the measurement circuitry is generated by this internal antenna during testing. RF signal levels generated by an "external" wireless infrastructure such as from a wireless router etc. would normally be only a small fraction of the RF signal magnitude generated by the internal radio because the internal radio would be the closest RF source to the metrology circuitry.

In addition to ANSI accuracy testing, at manufacturing, Landis+Gyr, the maker of the smart meters that Oncor is deploying, audits 4% of all meters produced and tests for accuracy while meters are RF enabled and transmitting (looking for a network). This sample test data is made available to Landis+Gyr's customers as part of their normal sample test policy and procedure.

In addition, the smart meters used by Oncor were evaluated by Navigant Consulting, with the results of that investigation appearing in the *Evaluation of Advanced Metering System (AMS) Deployment in Texas*, filed in Project No. 38053 on July 30, 2010 ("Navigant Report").

Question No. 17:

Is the utility aware the dangers of frequencies is now lectured in medical academia for Continuing Education (CE) credits doctors, nurses, etc. require for licensing and applicable in all 50 states?

Oncor Response:

Oncor does not participate in medical academia lectures for continuing education credits for doctors and nurses in any state.

Question No. 18:

How many billions of times per second can structures and fire separations be vibrated before the building is not compliant with building code.

Oncor Response:

Oncor does not have the requested information available. However, the smart meters and related equipment deployed by Oncor comply with FCC regulations for communications within the unlicensed RF bands. It is the FCC's responsibility to determine the appropriate functioning of RF devices to ensure public health and safety, and its regulations were adopted to govern the impact of RF emissions on infrastructure and the public in general. The RF signals emitted from the smart meters deployed by Oncor are well below those of other common devices, including cellular telephones, baby monitors, and microwave ovens.

Question No. 19:

The Public Utility's electrical grid runs at 60 Hz, what would be a worst case scenario if the 60 Hz changed? Would the utility allow their electrical grid to be induced by foreign frequencies? Why?

Oncor Response:

The RF signals produced by the smart meters will have no impact on Oncor's electrical system or the ability to operate that system at 60 Hz. The RF signals emitted from the smart meters deployed by Oncor are well below those of other common devices, including cell phones, baby monitors, and microwave ovens, and any RF signal induction on the 60 Hz electrical grid is virtually undetectable. Other RF emissions, such as television signals and police radios, have existed for decades in harmony with Oncor's electrical grid and have had no impact on the operation of the grid.

Question No. 20:

List all the frequencies and electrical information of human biological systems, bees, birds, pollinators, ecosystems were employed in frequency interaction equations? Include the routers, antennas and meters.

Oncor Response:

Please see the response to Question 15 in Section I. Questions From Public Filed by Commission Staff, Section Two – Questions Submitted to meterforum@puc.texas.gov.

Question No. 21:

The frequencies from Smart Meter Routers, antennas and other wireless infrastructure are hitting buildings from top to bottom while communicating with the meters. Can the utility provide the

attenuation coefficients of everything touched by the different frequencies including bees, birds, bats, bugs, butterflies, trees, humans, pets, angles, any other biological systems, and all material objects of any kind?

Oncor Response:

Please see the response to Question 15 in Section I. Questions From Public Filed by Commission Staff, Section Two – Questions Submitted to meterforum@puc.texas.gov.

Question No. 22:

Is it true that: While microwatts aren't capable of burning tissue, frequencies penetrating the body at any depth/angle have serious consequences: Electromagnetic induction of an unprotected human electrical grid, causing nerve and muscle stimulation, 180 degree polarization of molecules at 1.8 billion times per second for 900 MHz which is twice the frequency speed. Electromagnetic induction produces heat, will high speed polarization billions of times per second break DNA as well as produce heat?

Oncor Response:

Please see the response to Question 15 in Section I. Questions From Public Filed by Commission Staff, Section Two – Questions Submitted to meterforum@puc.texas.gov.

Question No. 23:

Pacemaker recipients and health monitoring equipment aren't designed to be in an electromagnetic field. Is the utility aware of the liability of taking the electromagnetic field to the patients?

Oncor Response:

Please see the response to Question 15 in Section I. Questions From Public Filed by Commission Staff, Section Two – Questions Submitted to meterforum@puc.texas.gov. In general, Oncor's potential liability as it relates to the delivery of service to its retail customers is governed by Section 5.2 of Oncor's Commission-approved Tariff for Retail Delivery Service, which is publicly available on Oncor's website.

Section Three – Questions Filed in Project 40190 from Cindy Carriger

Question No. 1:

Regarding the Navigant Report: Meters with Event Code 2118 were found to be inaccurate, and in most cases, reading HIGH. Below: excerpt Navigant Report

> code. As a result, customers who had one of the 439 Rev D advanced meters identified to date that have displayed the 2118 event code, which have now been removed from service, could have received one or more electric bills from their REP that included electric usage in kilowatt hours that was not accurate. And, in many cases, the recorded electric usage is likely higher than it should have been.

The report says the meters were removed from service. However, I see no documentation that those whose meters were exchanged, received any refund for the amount of any overages paid to Oncor. Please give the PUC and present on August 21 proof that such overages in charges were paid back to the affected consumer.

Oncor Response:

Oncor identified 17 customer accounts that were over-billed as a result of meters with Event Code 2118. All of those accounts were re-billed to the customers' retail electric providers to account for any overages paid by the customers.

Question No. 2:

Do the smart meters collect data such as 'Load Signatures', as do the ones in Colo. According to a report they put out called "Smart Metering Privacy: Existing Law and Competing Policies. If you say they do NOT, how can we be sure that they don't. Is there any documentation? If not, I ask that an independent 'lab' be allowed to perform a test to determine if the load signatures are collected or not. (link to document:

http://www.dora.state.co.us/puc/docketsdecisions/DocketFilings/091-593EG/091-593EG Spring2009 Report-SmartGridPrivacy.pdf

Oncor Response:

This question uses the term "load signatures" as that term is used in the document referenced in the question ("Colorado Report"). That report refers to researchers who began compiling "libraries of appliance load signatures that could be matched to signals found within the noise of a customer's aggregated electricity use." Colorado Report at p. 2. The Colorado Report also refers to a non-intrusive appliance load monitor ("NALM") device, which intercepts load information that is then normalized to adjust for supply-side variations. Colorado Report at p. A-3.

The smart meters used by Oncor do not collect appliance load signatures, do not include NALM devices, and do not collect information that can be used to determine specific details of customer usage, such as which appliances are being used inside a home at a given time. The smart meters record electricity usage in 15 minute intervals, but that data does not include personal information.

It should also be noted that the Colorado Report describes the privacy regime associated with smart meters in Texas and commends Texas for its "comprehensive treatment and protection of smart meter data." Colorado Report at p. 20.[2]

[2] After describing the significant protections that the Commission has put in place to protect customer privacy, the Colorado Report states: "These provisions, along with the substantive provisions regulating electric

Question No. 3:

If our data belongs to US the consumer here in Texas, why have the consumer's been denied an opportunity to make an informed decision before the Utility and PUC, Ercot etc. assumed we consent just because we want to have electricity. Of course we understand that our usage TOTALS must be collected. However, the data collected goes way beyond this limit, so why was one was informed of the changes in how our electricity would be monitored and recorded, so they could make an 'informed decision'?

Oncor Response:

The consumer continues to own the data associated with its electricity consumption. Oncor's customers had ample opportunity to participate and provide input in the process that ultimately resulted in the deployment of smart meters. First, after the Texas Legislature passed a law to encourage the deployment of smart meters, the Commission conducted a full, comprehensive rulemaking governing the implementation of the Legislature's directive regarding smart meters (Project No. 31418, *Rulemaking Related to Advanced Metering*). That rulemaking was open to participation by the public, and notice of that rulemaking was posted in the Texas Register and was available on the Commission's website. Second, with respect to Oncor's deployment of smart meters, public notice of Docket No. 35718, in which Oncor's proposed advanced meter deployment plan was filed, was posted in newspapers in every county that Oncor serves for four consecutive weeks in 2008. Several individuals did file comments in Docket No. 35718 in response to the public notices provided, and those comments were considered by the Commission. Docket No. 35718 was settled, and that settlement was supported by a broad cross-section of parties, including the Commission Staff, the Office of Public Utility Counsel, the Steering Committee of Cities Served by Oncor, the Alliance for Retail Markets, the Texas Energy Association for Marketers, IBEW Local 69, Reliant Energy Retail Services LLC, and TXU Energy Retail Company LLC.

Question No. 4:

What are the procedure and timetable, per neighborhood and individual residence for notification of the installation of the smart meters? Experiences of consumers have been anything but consistent regarding procedures followed for installation. I also have not heard of one case where an installer knocked on the door, and presented their badge, which is what the Tariff states they must do to gain entry to the property. Why is this acceptable?

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service providers, discussed earlier, constitute the most thorough regulatory treatment of the smart grid privacy problem to date." Colorado Report at p. 22.

Oncor Response:

Oncor's smart meter deployment schedule, by specific area, is included in its advanced meter deployment plan that was approved by the Commission in Docket No. 35718. Typically, the process for individual smart meter installation begins with the placement of a pre-installation door tag (that has been approved by the Commission Staff) two weeks prior to installation of the smart meter. At the time of installation, the installer knocks on the customer's door prior to installing the smart meter and if the customer is at home, informs the customer of the meter change-out. After the meter has been installed, the installer hangs a post-installation door tag that has been approved by the Commission Staff. Oncor's installers wear clothing indicating that they work for Oncor or Oncor's contractor and carry a photo identification badge, which they are happy to exhibit upon request.

Question No. 5:

What studies were done prior to deciding to deploy smart meters to determine that they were ready for installations on people's homes, regarding: Health, Safety, Cyber-Security, Privacy?

Oncor Response:

The smart meters used by Oncor are compliant with FCC regulations for communications within the unlicensed RF bands. It is the FCC's responsibility to determine the appropriate functioning of RF devices to ensure public health and safety, and its regulations were adopted to govern the impact of RF emissions on infrastructure and the public in general. The RF signals emitted from the smart meters deployed by Oncor are well below those of other common devices, including cellular telephones, baby monitors, and microwave ovens.

The advanced meter system Oncor is deploying includes a multi-layered security architecture compliant with industry standards such as NSA Suite B for cryptography. Landis+Gyr, the maker of Oncor's smart meters, also engages leading security partners such as RSA and Safenet for critical elements of the architecture. Landis+Gyr's advanced meter systems are routinely subjected to penetration tests by third-party vendors, including IBM and Lockheed Martin, to ensure ongoing improvement of the Landis+Gyr security architecture. Full audit logging at both network and operator levels enables traceability of any security incident.

Oncor's smart meters also comply with Commission Substantive Rule 25.130, which includes provisions designed to protect the privacy of meter data. Moreover, the smart meters used by Oncor were evaluated by Navigant Consulting, with the results of that investigation appearing in the Navigant Report that is quoted in Question No. 2, above. The web portal

associated with Oncor's advanced meter deployment plan has been subject to a security audit by an independent third party. In addition, Oncor's meters comply with American National Standards Institute ("ANSI") Standard C12.19.

Question No. 6:

How can Oncor representatives (such as Richard Sorrell), sit in a family's living room of a child who has experienced seizures and other complications from the installation of smart meters in her neighborhood, as well as from being in close proximity to a smart meter in her Dr.'s office, who has a Dr.'s letter explaining the child's condition and susceptibility to emissions smart meter, and not be able to tell the mother that they would refrain from installing a smart meter on her home. To my knowledge, the Oncor representatives made promises to her 3 times that were all broken. What kind of uncaring human beings can actually do something like this to anyone? This seems like shameful behavior by any service company, but shows how much not having any competition emboldens a corporation to just do anything they please, as what recourse does a customer have? They can't choose another TDU, they are stuck with you.

Oncor Response:

Oncor respectfully disagrees with the characterization of Oncor's actions described in the question. Oncor takes customers' concerns seriously and attempts to work with all customers whether the concern is with smart meters or another electric delivery issue. With respect to available recourse, under the Commission's Procedural Rule 22.242, electric utility customers have the option to file a complaint with the Commission for a violation or claimed violation of any law that the Commission has jurisdiction to administer or of any order, ordinance, rule, or regulation of the Commission.

II. Responses to Questions from Mr. Tim Honeycutt

Question No. 1:

What is the maximum theoretical power output of the WAN transmitter used in the smart meters? WAN stands for a wide area network.

Oncor Response:

The term WAN is inaccurate, but we assume that questions 1-6 are regarding the radio transmitter that is located in the meter. The following data is in regard to radios in the smart meters being deployed by Oncor:

Endpoints (electric)
Typical Rf output power = +26.5 dBm or 450 mW (conducted)
Maximum Rf output power =+27.4 dBm or 560 mW (conducted)

Question No. 2:

What is the licensed maximum power output of the WAN transmitter used in the smart meters?

Oncor Response:

Below is the licensing limit for the operating environment that Oncor's smart meters operate within:

Licensed maximum output power= +30 dBm or 1W (conducted)

Question No. 3:

Do the deployed smart meters include both a WAN transmitter and a HAN transmitter? HAN stands for home area network (where an oven or other appliance is linked via radiation to the smart meter). If yes, are the HAN transmitters on by default?

Oncor Response:

Yes, the electric smart meters include the so called WAN and HAN transmitter. The HAN transmitter is ON only when the endpoint is successfully joined to a HAN network. The customer must initiate this joining.

Question No. 4:

What is the current duty cycle (i.e., how long is the smart meter emitting radiation every 24 hours) range for the WAN transmitters of deployed smart meters? Is this figure expected to increase over time? If so, to what levels?

Oncor Response:

The typical duty cycle for meters is approximately 0.11% today. While it is possible this could increase with new functionality added to the system, the duty cycle is expected to remain significantly below 0.5%. This new functionality would be enabled at the discretion of the end-use customer.

Question No. 5:

What is the frequency range for the WAN transmitters used in the smart meters?

Oncor Response:

The operating frequency range for the radio transmitter in Oncor's smart meters is 902.2MHz to 927.9MHz.

Question No. 6:

Is the WAN transmitter used on the smart meters omnidirectional (i.e., shoots in all directions) or directional (i.e., shoots principally in one direction). If directional, about how wide is the cone of radiation at 3 and 10 feet? If directional, is there a way for a consumer to tell which direction the meter WAN transmitter is pointing and thus try to stay out of the beam?

Oncor Response:

The transmitter on the endpoints (electric) is directional due to the presence of metal socket behind the meter. The peak radiation is primarily towards the front of the meter and the 3dB beam width is ~130 deg in azimuth and elevation plane.

Question No. 7:

Are the deployed smart meters arranged in mesh networks? If yes, what is the duty cycle range for those meters configured as collection nodes (i.e., a smart meter that acts a collector of radiation from many surrounding smart meters and a more frequent transmitter of radiation to a neighborhood receiver)? Are there any outward markings that identify a smart meter as a collection node smart meter and that would enable a consumer to know that he has a collection node smart meter. Have those consumers who have been or are slated to be burdened with a collection node meter been informed by the electric providers (or anyone else) that their smart meter is operating as a collection node? If not, will they be?

Oncor Response:

Yes, the smart meters are deployed as part of a mesh network. By design, a mesh network allows for efficient distribution of communications traffic along multiple paths, and routing characteristics are dynamic. Thus, while no meters in the network are configured as "collection nodes," the routing among individual meters does vary to some degree depending on the characteristics of the surrounding mesh. As such, the specific duty cycle range for individual meters cannot be determined without analysis of the mesh. There are no markings on the meters to determine any differences in routing of messages.

Nevertheless, all meters will perform in accordance with the information provided in the response to Question 4 above, and all meters communicating in Oncor's AMS system operate within the allowable FCC regulations for unlicensed band communications regardless of the duty cycle.

Question No. 8:

Would it be possible for a hacker to gain access to a smart meter or mesh network?

Oncor Response:

Oncor takes cyber security very seriously, and in addition to providing good security today, Oncor has a practice and philosophy of continual improvement. Oncor employed IBM to provide the security design around the advanced metering system and to roadmap continual improvement over time as better methods, tools, processes, and best practices evolve. Oncor actively participates in the NIST security standards development and incorporates continual

improvement as the industry improves. There are several measures in place to protect the security of Oncor's smart meter network: (1) Oncor's overall advanced metering system design uses security designs and techniques that are comparable to systems used by global banking institutions to protect sensitive customer data and prevent intrusion; (2) Oncor's smart metering communication system uses fully encrypted (128-bit) security; (3) a full-time security team continually monitors the system to ensure no smart meter data security issues arise; and (4) the web portal associated with Oncor's advanced meter deployment plan has been subject to a security audit by an independent third party. These measures minimize the chances of a hacker gaining access to the smart meter network and are designed to limit the hacker's ability to affect the system if they do gain access.

Question No. 9:

If the answer to question 8 is yes, then would it be possible for the hacker to do any of the following:

a. increase the duty cycle of the meter WAN transmitter to 100% (i.e., set it so that it emits microwave radiation constantly)?

b. shut off the consumer's power?

c. cause the smart meter to overheat (by manipulating the meter's voltage regulator or by other means)?

Oncor Response:

a. No.

b. It is unlikely that a hacker could shut off the customer's power when in close proximity to the customer. It is even more unlikely that a hacker could shut off the customer's power from a remote location to the network.

c. No.

Question No. 10:

If the answer to questions 8 and 9 is no, then why not?

Oncor Response:

Please see response to Question No. 8, above (Section II. Responses to Questions from Mr. Tim Honeycutt).

Question No. 11:

Do clusters of smart meters, such as those present on apartment buildings and other group living environments all over Texas, emit greater levels of microwave radiation than single-family unit smart meters?

Oncor Response:

The smart meters and related equipment deployed by Oncor comply with FCC regulations for communications within the unlicensed RF bands. It is the FCC's responsibility to determine the appropriate functioning of RF devices to ensure public health and safety, and its regulations were adopted to govern the impact of RF emissions on infrastructure and the public in general. The RF signals emitted from the smart meters deployed by Oncor are well below those of other common devices, including cellular telephones, baby monitors, and microwave ovens. Please also see the response to Question No. 4 in Section I. Questions From Public Filed by Commission Staff, Section One – Questions from State Representative David Simpson.

Question No. 12:

Do smart meters arranged in clusters, such as those present on apartment buildings and other group living environments all over Texas, ever emit microwaves that constructively interfere (like two ocean waves colliding and producing a much bigger wave), and by superposition produce radiation beams of greater intensity? Have any of the sources of information relied upon by the electric providers as allegedly establishing the safety of smart meters considered clustered meter radiation? If so then please identify.

Oncor Response:

Please see response to the previous question (Section II. Responses to Questions from Mt. Tim Honeycutt, Question No. 11)

Question No. 13:

Given the demographics of many apartment dwellers in urban areas of Texas, does the prevalence of clusters of smart meters on such apartments mean that minorities and other disadvantaged citizens in Texas are being subjected to greater levels of microwave radiation than non-minorities or more affluent citizens? Would the electric providers' deployment of and the Texas PUC's mandate for the smart meters in such circumstances constitute a violation of the Fair Housing Act of 1968? Would the electric providers' deployment of and the Texas PUC's mandate for the smart meters in such circumstances constitute a violation of the 14th Amendment Equal Protection Clause?

Oncor Response:

Please see response to Question No. 11 in Section II. Responses to Questions from Mr. Tim Honeycutt.

Question No. 14:

In response to some consumer complaints about smart meters, the TX PUC has cited to a paper published by the Electric Power Research Institute entitled "A Perspective on Radio-Frequency Exposure Associated with Residential Automatic Meter Reading Technology." In that paper, the Electric Power Research Institute noted that lab studies on "lab animals" have found that

microwave radiation exposure above a certain level resulted in "behavior disruption" in the lab animals. The paper does not identify the type of lab animals. Given that behavior in rats and monkeys is, as in humans, governed by the brain, does that suggest that microwave radiation can have other than merely thermal impacts on the human brain as well? Given the greater complexity of the human brain versus the brain of a rat or monkey, is it possible that the radiation effects could be more profound in the human brain than the monkey brain? How about the brain of a human child?

Oncor Response:

Please see response to Question No. 11 in Section II. Responses to Questions from Mr. Tim Honeycutt.

Question No. 15:

What is the relevance of the FCC standards for microwave radiation thermal effects (specific absorption rate, etc.) to the risks of chronic diseases, such as cancer, miscarriage, birth defects, semen quality, autoimmune diseases, etc. from chronic (24/7), localized microwave radiation (i.e., from smart meters)? Did the FCC study or have studied the effects of chronic, localized microwave radiation on the human body before issuing that standard in 1996?

Oncor Response:

Please see response to Question No. 11 in Section II. Responses to Questions from Mr. Tim Honeycutt.

Question No. 16:

Does the Government Accounting Office's recent formal request for the FCC to revisit its radiation safety levels impact the electric providers' reliance on the FCC standards?

Oncor Response:

Please see response to Question No. 11 in Section II. Responses to Questions from Mr. Tim Honeycutt.

Question No. 17:

Have any of the sources of information relied upon by the electric providers as allegedly establishing the safety of smart meters considered the non-thermal effects on the human body of chronic, localized microwave radiation from smart meters? If so then please identify.

Oncor Response:

Please see response to Question No. 11 in Section II. Responses to Questions from Mr. Tim Honeycutt.

Question No. 18:

It took decades for the scientific community to work out some of the mechanisms linking tobacco to cancer formation and Agent Orange to cancer formation. During those decades the relevant industries (tobacco, the Pentagon) argued tobacco and Agent Orange did not cause

disease. Given the absence of scientific study on the non-thermal effects of microwave radiation, is it possible that, as in the cases of tobacco and Agent Orange, evidence of disease will take time to manifest itself?

Oncor Response:

Please see response to Question No. 11 in Section II. Responses to Questions from Mr. Tim Honeycutt.

Question No. 19:

The International Agency for Research on Cancer, a branch of the World Health Organization, last year deemed radio-frequency radiation, which is emitted by cell phones, smart meters and many other devices, a "possible carcinogen." Do the electric providers consider this finding wrong? If so, on what basis?

Oncor Response:

Please see response to Question No. 11 in Section II. Responses to Questions from Mr. Tim Honeycutt.

Question No. 20:

At least the states of Vermont, California, Maine, Nevada and Oregon allow consumers to opt-out of smart meters. Were the governments of those states wrong to give consumers the choice to opt-out? If so, why?

Oncor Response:

Oncor did not participate in proceedings or evaluations relating to smart meter opt-out programs in other states, does not provide electric transmission or distribution service in other states, and has no opinion as to whether the availability of such a program for customers of other utilities in other states is appropriate. Moreover, the structure of Texas's electric market is distinct from the structure of electric markets in other states. Therefore, policies adopted in other states may not be appropriate for the Texas electric market.

Question No. 21:

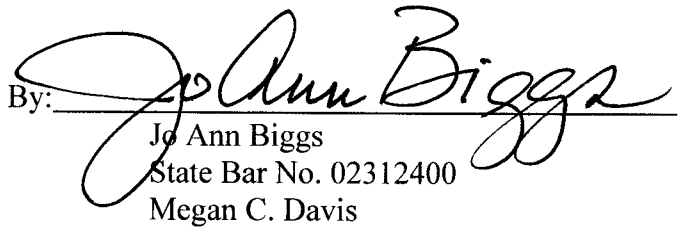
Is it equitable to charge a consumer a monetary penalty to not have a product at her home that she never wanted in the first place?

Oncor Response:

It is equitable to require the customers who choose to participate in an opt-out program to bear the costs associated with implementing that program. To do otherwise would have the effect of inappropriately shifting the costs of the opt-out program to those customers who choose not to participate in the opt-out program.

Respectfully submitted,

Oncor Electric Delivery Company LLC

By: 

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