

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Mary Paul	:	
	:	
v.	:	C-2015-2475355
	:	
PECO Energy Company	:	

INITIAL DECISION
NON-PROPRIETARY VERSION

Before
Darlene D. Heep
Administrative Law Judge

INTRODUCTION

On April 1, 2015, the Complainant, Ms. Mary Paul, filed a Formal Complaint (Complaint) with the Commission against PECO in which she alleged that PECO was threatening to shut off her service after she refused installation of a Smart Meter, also known as an AMI meter, at her home. She also questioned the information provided by PECO regarding Smart Meters and the installation method. Ms. Paul is particularly concerned about radio frequency or electromagnetic field emissions (hereinafter “EFs”). This decision finds that Complainant did not establish that installation of a Smart Meter at her home would be unreasonable or unsafe and that PECO reasonably responded to Complainant’s concerns and questions regarding Smart Meters.

HISTORY OF THE PROCEEDINGS

On April 27, 2015, PECO filed an Answer with New Matter in response to Ms. Paul’s Complaint. In its Answer, PECO averred that it is required to install smart meters for the company’s electric distribution system as a matter of law and that Ms. Paul’s Complaint

should be dismissed. PECO further averred that in accordance with Act 129 of 2008 (Act 129), it was required to install Advanced Metering Infrastructure (AMI) meters for all of its current Automated Meter Reading (AMR) customers by the end of 2014. Finally, PECO averred that in order to comply with Act 129, it is terminating service to customers who do not give the Company access to install the meter. PECO asserted that the Complaint should be dismissed as a matter of law.

PECO asserted in its New Matter that the Complainant requested to opt out of the smart meter installation at her residence and that an opt out was not provided for under PECO's smart meter installation plan that was approved by the Commission. PECO argued that the Complaint should be dismissed because the law does not allow a customer to opt out of smart meter installation and, therefore, there is no legal basis for the Complaint.

Also, on April 27, 2015, PECO filed a Preliminary Objection to the Complaint in which it averred that the Complaint should be dismissed as legally insufficient pursuant to 52 Pa.Code § 5.101(a)(4). PECO contended that legislative and regulatory legal authority requires PECO to install smart meters. PECO also contended that there are no genuine issues of material fact and that PECO is entitled to judgment as a matter of law.

By Motion Judge Assignment Notice dated June 1, 2015, PECO's Preliminary Objection was assigned to Administrative Law Judge (ALJ) Joel H. Cheskis.

On June 23, 2015, the Complainant submitted a document entitled "response to PECO's Answer to my complaint."¹ ALJ Cheskis accepted this as an Answer to PECO's New Matter and Preliminary Objection. In the document, Ms. Paul responded to several averments made by PECO and again asserted her concerns about the health effects of smart meters. The Complainant also contended that smart meter legislation did not mandate that every customer receive a smart meter.

¹ Complainant requested and was given extra time to file a response.

On July 1, 2015, ALJ Cheskis issued an Initial Decision granting PECO's Preliminary Objection. ALJ Cheskis dismissed Ms. Paul's Complaint, concluding that a hearing was not necessary because the Complainant would not be entitled to relief under any circumstances as a matter of law.

On July 21, 2015, the Complainant filed Exceptions to the Initial Decision.

On August 3, 2015, PECO filed Replies to Exceptions.

On March 17, 2016, the Commission issued an Opinion and Order: (1) granting, in part, the Complainant's Exceptions; (2) reversing the ALJ's Initial Decision; (3) denying PECO's Preliminary Objections; and (4) returning this matter to the Office of Administrative Law Judge for such proceedings as may be necessary. The Commission determined that the Complainant in this proceeding has made specific factual averments in her Complaint and Answer to PECO's New Matter that implicate a potential violation of Section 1501 of the Code. Particularly, the Commission found that the Complainant had raised some issues involving potential customer service violations. These issues are: 1) whether she received reasonable notice from the Company of the replacement of her electric meter and the use of a contractor with whom she was not familiar; 2) that she has experienced physical symptoms that correspond to biological effects associated with "this kind of technology;" and 3) that she received no written answers from PECO in response to fifteen specific questions regarding her concerns for health and safety with respect to smart meters.

By Hearing Notice dated April 12, 2016, an Initial Hearing to address the issues was scheduled for 10:00 a.m. on Tuesday, August, 16, 2016 in an available hearing room on the 4th Floor at 801 Market Street in Philadelphia, Pennsylvania and the matter was assigned to Administrative Law Judges Darlene D. Heep and Christopher P. Pell.

On several occasions, Ms. Paul informally contacted the Philadelphia OALJ to advise that she suffers from a condition that prevents her from appearing in person in

Philadelphia for the hearings. To accommodate Ms. Paul's health concerns, the legal assistant informed her that she may participate telephonically in the hearings.

On August 31, 2016, the Complainant filed a request for an accommodation with the Secretary's Bureau.

By Order dated September 13, 2016, Complainant's request for an accommodation was formally granted and Ms. Paul was advised that she may appear telephonically, or if she is willing to make the arrangements, by videoconference. That Order further provided instructions to the Complainant to follow if she elected to appear either telephonically or by videoconference.

On September 27, 2016, Complainant filed a request for a continuance of the October 4th and October 5th hearings. Complainant sought a six-week delay on the grounds that she was suffering from the ill effects of the AMR meter currently located at her residence, not an AMI meter.² The Complainant supplied statements from two physicians indicating that she had become **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL]

On September 28, 2016, PECO filed an Answer opposing Complainant's Motion for Continuance of Hearing Date.

By Order dated October 3, 2016, Complainant's Motion for Continuance was granted on the grounds that PECO was granted a continuance over Complainant's objection and Complainant was acting *pro se*,

² In her Complaint, Ms. Paul did not allege that she has experienced, or is concerned with, any health effects from her current AMR meter. She only anticipated negative health effects due to the "technology" of the smart meter, or AMI meter, PECO was seeking to install.

By Hearing Cancellation/Reschedule Notice dated September 30, 2016, the OALJ scheduling unit formally rescheduled the hearing for 10:00 a.m. on Tuesday, November 15, 2016 and Wednesday, November 16, 2016.

On November 4, 2016, the Complainant submitted a Motion to Compel Answers to Paul Interrogatories 2-1, 2-5 and 2-6.

On November 8, 2016, Respondent filed PECO Energy Company's Answer to Complainant's Motion to Compel.

On November 10, 2016, an Order was issued, dismissing, in part, as moot and denying, in part, Complainant's Motion to Compel.

On, November 9, 2016, Complainant filed an amended complaint, captioned as "First Amended Complaint."

On November 11, 2016, PECO filed its Motion to Strike the First Amended Complaint.

On Sunday, November 13, 2016, Complainant sent an email response to PECO's Motion to Strike.³

An Order granting the Motion to Strike was issued on November 14, 2016.

³ Although Complainant's email response to PECO's Motion to Strike was not in conformity with the Commission's procedural rules, it was given full consideration. 52 Pa.Code § 1.2(a) provides that the rules of procedure may be "liberally construed to secure the just, speedy and inexpensive determination of every action or proceeding to which it is applicable" and that "[t]he . . . presiding officer at any stage of an action or proceeding may disregard an error or defect of procedure which does not affect the substantive rights of the parties."

The Hearing was held November 15-16, 2016. Complainant appeared *pro se*, testified on her own behalf and presented witness Hanoch Talmor, M.D. Three exhibits were admitted on behalf of Complainant.

PECO was represented by Ward Smith, Esq., Shawane Lee, Esq. and Thomas Watson, Esq. Twenty-four PECO exhibits were admitted. Testifying on behalf of PECO were Ms. Brenda Eison, PECO Customer Service and AMI Deployment Manager; Mr. Glenn Pritchard, PECO Principal Engineer for the AMI Deployment Project; Christopher Davis, Ph.D. in Physics; and Dr. Mark Israel, Physician.

By Judge Change Notice issued on March 21, 2017, the matter was reassigned to Administrative Law Judge Darlene Heep, the undersigned, as the sole presiding officer.

The record closed on March 27, 2017, upon filing of the final Reply Brief.

FINDINGS OF FACT

1. Complainant is Mary E. Paul, a PECO customer in Avondale, Pennsylvania (service address).
2. Respondent is PECO Energy Company (PECO), a utility under the jurisdiction of the Pennsylvania Public Utility Commission.
3. The term “AMR” stands for Automatic Meter Reading. (Tr. 131).
4. Advanced Metering Infrastructure meters are also known as AMI or Smart Meters (AMI or Smart Meter). (Tr. 133).
5. PECO is replacing its AMR meters with AMI meters. (Tr. 128 - 133.).

6. The meter at Complainant's house since she moved there in 2002 is an AMR meter. (Tr. 6).

7. The service address is a two-story single family home. (Tr. 6-7).

8. The homes in Complainant's homeowner association development are about at least 25 feet apart. (Tr. 7).

9. The AMR meter is located on the front, right side of the house, near the formal living room. (Tr. 7).

10. PECO contracted with Corix, a utility infrastructure, design, installation and supply company, to install AMI meters. (Tr. 142).

11. When a Corix employee appeared at the Complainant's home in August of 2014, Ms. Paul told the Corix employee that she did not want an AMI meter installed on her home and the Corix employee left the premises, informing Ms. Paul that he would notify PECO. (Tr. 18-19).

12. Complainant received by mail a shut-off notice dated March 20, 2015. (Tr. 8-9).

13. The notice stated that the shut off notice was issued because Complainant did not allow access to her meter. (Tr. 8-9).

14. Complainant's service was not terminated and was operating at the time of the hearing. (Tr. 19).

15. Complainant included in her Complaint questions for PECO to answer about Smart Meters. (Tr. 20)

16. Glenn Pritchard is a registered engineer and manager of the PECO advanced grid operations and technology. (Tr. 128).
17. Each AMI meter has two radios- the FlexNet communication module, which communicates away from the house with the data collector, and the Zigbee radio, which transmits back and forth between the meter and the service address. (Tr. 134-135).
18. AMI Flexnet radios are designed on PECO's system to transmit between 6 and 8 times per day. (Tr. 135).
19. AMI Zigbee radios, using one tenth of a watt, transmit at about two times per minute until paired with a Smart Device (Tr. 138).
20. The AMR meters are designed to transmit data every five minutes, each transmission for a duration of 20 milliseconds with 1 watt of energy. (Tr. 132-133).
21. AMI meters do not create harmonics. (Tr. 157, 259).
22. Dr. Christopher Davis is a professor of electrical and computer engineering at the University of Maryland in College Park and teaches and studies physics, biophysics, electrical engineering, electromagnetics, radiofrequency exposure and dosimetry. (Tr. 246-248).
23. Radiofrequency fields are periodically emitted from PECO's AMR and AMI meters. (CD-1- CD-4).
24. Dr. Davis has studied the types of radiofrequency fields that are periodically emitted from PECO's AMR and AMI meters. (Tr. 248).
25. The Federal Communications Commission (FCC) has indicated that the maximum permissible exposure (MPE) to radiofrequency fields emitted by a Smart Meter

Flexnet radio is 0.6 mW/cm^2 and 1 mW/cm^2 for the Smart Meter Zigbee radio, calculated as an average exposure over time. (CD-1 - CD-4).

26. PECO AMI meter average RF exposure for the Flexnet radio is $.000000078 \text{ mW/cm}^2$ and $.0000000061 \text{ mW/cm}^2$ for the Zigbee radio. (CD2; Tr.168-169).

27. PECO AMR meter average RF exposure is $.000000531 \text{ mW/cm}^2$. (CD7).

28. Dr. Mark Israel attended the Albert Einstein College of Medicine, had an Internship and Residency at Harvard Medical School and has studied radiofrequency fields and health effects for several decades. He also has conducted medical research in a variety of areas including systems biology, biochemistry, molecular biology, cancer, molecular genetics, and cell biology.(Tr. 323 334).

29. A biological effect is different from a health effect. (Tr. 139).

30. A biological effect is a response to an exposure; a health effect is a condition or a disease caused by exposure. (Tr. 339-340).

DISCUSSION

The Pennsylvania Public Utility Code requires each public utility to provide the following:

Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service and facilities, . . . Such service and facilities shall be in conformity with the regulations and orders of the commission.

66 Pa.C.S. § 1501.

The statutory definition of “service” is to be broadly construed. *Country Place Waste Treatment Co., Inc. v. Pa. Publ. Util. Comm'n*, 654 A.2d 72 (Pa.Cmwlth. 1995).

“Service, used in its broadest and most inclusive sense, includes any and all acts done, rendered, or performed, and any and all things furnished or supplied, and any and all facilities used, furnished, or supplied by public utilities, or contract carriers by motor vehicle, in the performance of their duties under this part to their patrons, employees, other public utilities, and the public, as well as the interchange of facilities between two or more of them . . .”

66 Pa.C.S.A. § 102.

Section 332(a) of the Public Utility Code, 66 Pa.C.S. § 332(a), provides that the party seeking relief from the Commission has the burden of proof. Complainants seek relief from the Commission, and, therefore, has the burden of proof in this proceeding.

“Burden of proof” means a duty to establish a fact by a preponderance of the evidence, or evidence more convincing, by even the smallest degree, than the evidence presented by the other party. *Se-Ling Hosiery v. Margulies*, 364 Pa. 54, 70 A.2d 854 (1950).

If a complainant establishes a *prima facie* case, the burden of going forward with the evidence shifts to the utility. If a utility does not rebut that evidence, a complainant will prevail. If the utility rebuts complainant’s evidence, the burden of going forward with the evidence shifts back to a complainant, who must rebut the utility’s evidence by a preponderance of the evidence. The burden of going forward with the evidence may shift from one party to another, but the burden of proof never shifts; it always remains on a complainant. *Replogle v. Pennsylvania Electric Company*, 54 Pa. PUC 528 (1980), and *Waldron v. Philadelphia Electric Company*, 54 Pa. PUC 98 (1980).

If Respondent submits evidence of “co-equal” weight to counter Complainant’s evidence, Complainant has not satisfied the burden of proof unless additional evidence opposing Respondent’s evidence is presented. *Morrissey v. PA Dept. of Highways*, 424 Pa. 87, 225 A.2d 895 (1967), and *Burleson v. Pa. Pub. Util. Comm’n*. 66 Pa.Cmwlth. Ct. 282, 443 A.2d 1373 (1982), *aff’d*. 501 Pa. 443, 461 A.2d 1234.

Any decision of the Commission must be supported by substantial evidence. See, e.g., Section 704 of the Administrative Agency Law, 2 Pa.C.S. § 704. “Substantial evidence” is such relevant evidence that a reasonable mind might accept as adequate to support a conclusion. More is required than a mere trace of evidence or a suspicion of the existence of a fact sought to be established. *Norfolk & Western Ry. Co. v. Pa. Pub. Util. Comm’n.*, 489 Pa. 109, 413 A.2d 1037 (1980); *Erie Resistor Corp. v. Unemployment Comp. Bd. of Review*, 194 Pa. Superior Ct. 278, 166 A.2d 96 (1961); and *Murphy v. Comm., Dept. of Public Welfare, White Haven Center*, 85 Pa. Commonwealth Ct. 23, 480 A.2d 382 (1984).

Act 129 of 2008 (“the Act” or “Act 129”) required electric distribution companies (“EDCs”) to file Smart Meter technology procurement and installation plans with the Commission for approval. The Act provided:

(f) *Smart Meter technology and time of use rates.*

(1) Within nine months after the effective date of this paragraph, electric distribution companies shall file a Smart Meter technology procurement and installation plan with the commission for approval. The plan shall describe the Smart Meter technologies the electric distribution company proposes to install in accordance with paragraph (2).

(2) Electric distribution companies shall furnish Smart Meter technology as follows:

(i) Upon request from a customer that agrees to pay the cost of the Smart Meter at the time of the request.

(ii) In new building construction.

(iii) In accordance with a depreciation schedule not to exceed 15 years.

66 Pa.C.S. § 2807(f). The Act requires that any smart meter technology utilized have bidirectional or two-way communication technology. § 2807(g).

On June 18, 2009, the Commission ordered EDCs with greater than 100,000 customers to adhere to the guidelines established for Smart Meter technology procurement and

installation. The Commission also ordered EDCs to file a Smart Meter technology procurement and installation plan.⁴

PECO developed a Smart Meter installation plan⁵ that was approved by the Commission.⁶ Under that plan, PECO is replacing AMR⁷ meters with AMI⁸ or “Smart Meters.” Complainant asserts that a plain reading of § 2807(f)(2) suggests an “opt in” or “opt out.” In 2013, however, the Commission concluded that there is no provision in the Code, the Commission’s Regulations or Orders that allows a PECO customer to “opt out” of smart installation (*See Maria Povacz v. PECO Energy Company*, Docket No. C-2012-2317176 (Order and Opinion entered January 24, 2013)).

REQUEST TO ADMIT TESTIMONY FROM ANOTHER PROCEEDING

On March 6, 2017, Complainant sought to have admitted into evidence the testimony of Andrew Marino, Ph.D. Dr. Marino testified on September 15-16, 2016 as an expert for *Maria Povacz v PECO*, C-2015-2475023; *Laura Sunstein Murphy v. PECO*, C-2015-2475726; and *Cynthia Randall and Paul Albrecht v. PECO*, C-2016-2537666. All three complainants are represented by the same attorneys and Dr. Marino’s testimony is a part of the record of each action.

On March 20, 2017, PECO submitted an objection to the admission of Dr. Marino’s testimony in this matter. PECO first noted that the deadline for designating expert

⁴ See *Smart Meter Procurement and Installation*, Docket No. M-2009-2092655 (Implementation Order entered June 24, 2009) (*Smart Meter Procurement and Installation Order*).

⁵ See *Petition of PECO Energy Company for Approval of its Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123944 (Smart Meter Plan).

⁶ See *Petition of PECO Energy Company for Approval of its Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2009-2123944 (Order entered May 6, 2010) (*PECO Smart Meter Plan Order*).

⁷ AMR is an acronym for “automatic meter reading.”

⁸ AMI is an acronym for “advanced metering infrastructure.”

witnesses had long passed,⁹ and that on August 2, 2016, Complainant timely identified Dr. Talmor as an expert witness. PECO also asserts that it would violate the due process rights of PECO to allow the testimony of Dr. Marino because PECO has not had the opportunity to conduct discovery regarding or cross-examine Dr. Marino or present responsive expert testimony with respect to the claims of Ms. Paul.

Commission regulation 52 Pa. Code § 5.407 allows for admission of the records of other proceedings. However, as the Commission noted, where a party seeks to admit such evidence after the hearing, “admission of such extra-record testimony violates the principle of fundamental fairness and violates the due process rights of other parties who have no opportunity to cross examine a witness in a separate hearing.” *Petition of PECO Energy Company for Approval of its Act 129 Energy Efficiency and Conservation Plan and Expedited Approval of its Compact Fluorescent Lamp Program* 2009 Pa. PUC LEXIS 2301 (Pa. PUC 2009). For the same reasons, the testimony of Dr. Marino will not be admitted here.

In the instant matter, Complainant alleges: 1) that she did not receive reasonable notice from the Company of the replacement of her electric meter and the company used a contractor with whom she was not familiar; 2) that installation of a smart meter at her residence would be unsafe and unreasonable; and 3) that she received no written answers from PECO in response to fifteen specific questions regarding her for health and safety concerns.

A. Reasonable Notice

Ms. Paul contends that she did not receive reasonable notice from the Company of the replacement of her electric meter. She also contends that PECO did not provide sufficient information about the AMI meter. Ms. Paul also believes that she didn't receive sufficient information about, Corix, the company contracted by PECO to install AMI meters in her area and is concerned because the Corix installers are not licensed electricians.

⁹ See June 23, 2016 Pre-hearing Order setting August 2, 2016 as the deadline for designating expert witnesses.

1. Notice of meter replacement

Ms. Paul contends that she did not receive notice that her meter would be replaced and she testified that she was surprised when a Corix employee appeared at her home to install an AMI meter. Although Ms. Paul's testimony was credible, no violation was established because PECO and its representatives acted reasonably.

At the hearing, PECO presented the testimony of Brenda Eison, Customer Service Manager for PECO, who also served as one of the managers for the AMI installation project. (Tr. 198). Through Ms. Eison, PECO introduced evidence showing that on May 18, 2014, Ms. Paul was sent a letter advising her that the vendor installing the meters, Corix, would be in her neighborhood to install an AMI meter at her home within 45 days. (BE-2). Ms. Eison also testified that a 21-day letter is sent to the customer prior to installation. Both letters are sent by the vendor Corix and when Corix reports that such letters are sent, it is recorded in PECO records. PECO records reflect that Corix sent the letters. (BE-2; Tr. 204, Tr. 217).

Ms. Paul is correct in that the system of notice employed by PECO is not foolproof and PECO must rely on the vendor to report that the letters were sent. Ms. Paul's letter may have gotten lost in the shuffle or otherwise misdirected. As the Commission has stated, however, a utility is required to provide reasonable service, not perfect service. See *Manuel A. Biason v. Metropolitan Edison Company*, PUC Docket No. C-00004450 (Opinion and Order entered December 19, 2001); *DeFranscesco v. West Penn Power Company*, 329 Pa. Superior Ct. 508, 478 A.2d 1295 (1984). There is no showing that PECO acted unreasonably here.

Further, the PECO tariff provides that the company is to have access to the premises of the customer at all reasonable times for the purpose of removing or changing any or all equipment belonging to the Company. See PECO Tariff Electric Section 10.5. There is no support for finding that the appearance of the Corix employee to install the meter was unreasonable in time or method and therefore there is no violation here.

2. Corix installers

Ms. Paul was also concerned because the Corix installers are not licensed electricians. (Tr. 17). There was no support for finding that the use of unlicensed technicians would constitute a violation. PECO Manager of the Advanced Grid Operations and Technology Group, Glenn Pritchard, testified that the Corix technicians were trained in AMI installation and that AMI installation does not require a licensed electrician because of the type of connection required. (Tr. 142-43). Mr. Pritchard explained that the meter socket is similar to an electrical socket in homes and therefore, with proper training, a technician could safely install the meter. (Tr. 142). Nothing to the contrary was presented.

3. Information about Smart Meters

Ms. Paul also contends that the company did not inform her adequately about AMI meters and any safety issues. She also testified that a link on the website where she pays her bills that should take you to a page with more information about smart meters led to a website stating “Page Not Found.” (Tr. 16, 25, Complainant 2). Evidence showed that this was not a PECO site and that PECO provided customers with information about smart meters and gave additional information to Ms. Paul.

Ms. Eison testified that the service that PECO customers can use to pay bills online is not PECO operated or owned. She further stated that PECO provides its own websites with smart meter information. There was no evidence that PECO websites and links pertaining to smart meters were not working. (Tr. 197).

The record also shows that the initial letter sent out by PECO gave a brief description of the meter (BE-2) and that the subsequent letters sent to Ms. Paul gave more detail regarding the safety of the meter, including a discussion of RFs. Ms. Paul also acknowledged that Ms. Eison spoke with her by telephone about the meters and whether they were safe. (Tr. 225). Therefore, there was no violation with respect to the information provided to Ms. Paul.

B. Safe and Reasonable – Health Effects

Ms. Paul contends that installation of an AMI meter at her home will have adverse health effects. Of particular concern to Ms. Paul are any EF emissions that may result from the operation of the Zigbee and Flexnet radios in the meter. The question presented is whether installation of an AMI meter at the home of Ms. Paul will be unsafe or unreasonable under Section 1501 of the Code. The record evidence supports a finding that installation of a smart meter would not be unsafe or unreasonable.

Ms. Paul testified that she has **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL]

In support of her claim, Ms. Paul presented Dr. Hanoch Talmor, M.D., a practitioner of holistic medicine in Florida, Dr. Hanoch was first consulted by Complainant **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL]; He stated that he has seen numerous patients over 17 years with health problems related to electromagnetic fields and radiofrequencies. (Tr. 68). He believes that most problems come from RFs or WI-FI frequencies. (Tr. 69).

When asked whether moving an AMI a third of an acre away from the house would reduce any effects that he contends emanate from an AMI meter, he stated that there are other phenomena from a smart meter that could feed back into the house. However, he did

acknowledge that moving the meter away from the home may help and that the only way to tell would be to try it. (Tr. 120-121).

Dr. Talmor believes that radiofrequency fields, including any from a Smart Meter, are harmful to the body and that compressors in refrigerators and deep freezers also emit harmful EF waves. (Tr. 96-97). Dr. Talmor opined that “pulsed” transmissions emitted by such machinery are more dangerous than non-pulsed fields. He further stated that exposure to RFs at .01 microwatts per square meter is a safe level of exposure for most persons. He believes that Smart Meters are dangerous because they could emit 1000s of times that level. (Tr. 88). He further opined that nowhere in the USA, other than on a boat or in the forest, would someone be exposed to a .01 microwatts per square meter or smaller level of RFs. (Tr. 100). Dr. Talmor also believes that any feedback, or “dirty electricity,” generated by Smart Meters is harmful.

Dr. Talmor also testified that the **[BEGIN CONFIDENTIAL]**
[END CONFIDENTIAL] Ms. Paul testified that her experiences are consistent with someone having EHS. (Tr. 82-87). Based on his review, there are studies that show that RFs have an effect in the human body and its functions, (Tr.82-87). He also recommended to Ms. Paul that she not only not install an AMI meter at her house but that the company also remove AMI meters from the houses of her neighbors. (Tr. 83).

The evidence overall supports a finding that installation of a smart meter at Ms. Paul’s home would not be unsafe or unreasonable, however.

While Dr. Talmor diagnosed Ms. Paul as **[BEGIN CONFIDENTIAL]**
[END CONFIDENTIAL] and concluded that the installation of a Smart Meter at her home would exacerbate the condition, the testimony of Dr. Mark Israel challenged that conclusion.

Dr. Mark Israel, M.D. is a physician who has studied and conducted research regarding electromagnetic fields for purposes of diagnosis and treatment. In particular, Dr. Israel

has specialized in cancer treatment and prevention and has investigated and considered the possible causes thereof, including EFs and any adverse health effects from them. (Tr. 326-328).

Dr. Israel testified that there is no scientific basis upon which to find that the PECO AMI meter would adversely affect Ms. Paul's health. This was based on his experience and years of review of the medical literature and reports of various public health authorities. (Tr. 352-359). Dr. Israel acknowledged that there are reports of a few studies that EFs have a negative health effect. He, however, questioned the validity of these studies, noting that some were based on the effects on cells rather than the human body, distinguishing between a biological effect and a health effect, and that other studies relied on self-reported symptoms rather than those objectively observed. (Tr. 335-339). He further noted that repeated experiments have been unable to replicate a finding that exposure to EFs is what triggered the symptoms reported. (Tr. 346-348).

He also testified that the symptoms identified by Ms. Paul, such as **[BEGIN CONFIDENTIAL]** **[END CONFIDENTIAL]**, could be indicative of other conditions but that a physical exam and medical tests should be conducted to make a diagnosis and determine proper treatment. (Tr. 354-357, 367-368). It was his opinion that there is also no medical basis upon which to conclude that the AMI meter would have an adverse health effect on Ms. Paul or exacerbate her symptoms. (Tr. 356-358).

Other evidence and expert testimony supported Dr. Israel's conclusion. An AMR meter is currently installed on the front of Ms. Paul's house and has been since at least 2002. According to Dr. Christopher Davis, an expert presented by PECO who has a Ph. D. in Physics and has studied and conducted experiments involving EFs for decades, the AMR meter currently at Ms. Paul's home emits more EFs than the AMI meter PECO seeks to install at the Paul residence. (Tr. 282-283). Mr. Pritchard also testified that the AMI meter emits much less energy than the AMR meter at Ms. Paul's home. (Tr. 173).

Dr. Davis also testified that Complainant's exposure would be reduced by 83 percent if her current AMR meter is replaced by an AMI meter because the AMI meter transmits

less often as the AMR meter. (Tr. 283). Notable is that Ms. Paul did not find or report that her health was affected by the AMR meter at her home or in the neighborhood from the time that she moved into the area in 2002 until the deployment of AMI meters. This suggests that the meters are not causing the symptoms suffered by Ms. Paul.

Also, there was no showing that the concerns that Ms. Paul and Dr. Talmor have about Smart Meters in general pertain to the Smart Meters utilized by PECO in particular. (Tr. 136).

Dr. Talmor is concerned about “pulsed” transmissions. According to Mr. Pritchard, the PECO smart meter system does not use pulsed transmissions. (Tr. 139). Ms. Paul questioned the safety of dirty electricity or harmonics. Dr. Davis and Mr. Pritchard testified that the smart meters used by PECO only measure consumption and do not create harmonics. (Tr. 156-157, Tr. 259).

Dr. Davis also testified that the EF safe level proposed by Dr. Talmor, 0.1 microwatts per square meter, is 100 million times the safe level established by the Federal Communications Commission. He further testified that looking at the two radios in the PECO Smart Meters, The Flexnet radio average emissions are at least 7.8 million times smaller than the FCC maximum permissible exposure (MPE) and the Zigbee radio emissions are at least 164 million times smaller than the FCC limit, on average. (Tr. 269).

Looking at the possible peak exposure to EFs, i.e., at the moment when the meters are actually transmitting, the Flexnet level is 40 times smaller than the FCC MPE and the Zigbee level is 3800 times smaller than the FCC MPE. (Tr. 270). Dr. Davis further stated that Complainant’s exposure to the nearest neighbor’s AMI meter if placed on the neighbor’s closest point to Ms. Paul would be 25 times smaller than the safe level stated by Dr. Talmor. (Tr. 280).

Even if the weight of the evidence had established that the AMI meter would be harmful to Ms. Paul, PECO acted in a reasonable manner in response. To address Ms. Paul’s concerns about having an AMI meter installed at her home, PECO broached with Ms. Paul the

idea of moving her meter board and location to a remote spot away from her home. She informed PECO at that time and testified at the hearing that moving the meter was not acceptable because her homeowner's association may not approve it because it would reduce property values. (Tr. 41-45).

Ms. Paul also stated, however, that even absent aesthetic reasons or the position of the homeowner's association, she did not want an AMR or AMI meter at her home and would like to have an analog meter, a type of meter PECO no longer utilizes in its system. (Tr. 44).¹⁰ Given that there is no showing that installation of the AMI meter would be or that the AMR meter has been harmful to Ms. Paul, PECO has not been unreasonable in its responses to and attempts to accommodate Ms. Paul. No violation was established.¹¹ (Tr. 41-45),

C. Reasonable Customer Service

Ms. Paul claims that she received no written answers from PECO in response to fifteen specific questions regarding her for health and safety concerns. There was no *prima facie* case established on this claim.

Ms. Paul acknowledged that she did not pose these questions regarding the AMI meter and her safety concerns until she filed the Complaint. The record established that PECO responded to these questions and therefore cannot be said to have been remiss with respect to any duty to Ms. Paul regarding the questions that she posed.

¹⁰ Ms. Paul also questioned the \$4000 cost quoted by PECO to move her meter 40 feet away from her home. (Tr. 40-42) Ms. Eison testified that Ms. Paul could obtain her own estimate and have the meter moved by a PECO approved electrician. (Tr. 237-239). As Ms. Paul stated that in any event she would not consent to or be satisfied by moving the meter, the issue of cost is not addressed here. (40-42).

¹¹ Dr. Talmor testified that in his experiences, customers are allowed to opt out of a smart meter. These opt outs usually involve a fee of some kind to pay for the added expenses incurred by the company. See California Public Utility Commission and Ohio Public Utility Commission as examples.

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the parties and the subject matter of this proceeding. 66 Pa.C.S. § 701.

2. Admission of Dr. Marino's testimony from another proceeding would violate the principle of fundamental fairness and violates the due process rights of other parties who have no opportunity to cross examine a witness in a separate hearing. "*Petition of PECO Energy Company for Approval of its Act 129 Energy Efficiency and Conservation Plan and Expedited Approval of its Compact Fluorescent Lamp Program* 2009 Pa. PUC LEXIS 2301 (Pa. PUC 2009).

3. The complainant has not met her burden of proof of establishing an offense in violation of the Public Utility Code, the Commission's regulations or an outstanding order of the Commission. 66 Pa.C.S. § 701.

4. The Complainant must establish her case by a preponderance of the evidence. *Samuel J. Lansberry, Inc. v. Pa. Pub. Util. Comm'n*, 578 A.2d 600 (Pa.Cmwlth. 1990), alloc. den., 602 A.2d 863 (Pa. 1992).

5. Utility companies are required to furnish and maintain adequate, efficient, safe, and reasonable service and facilities. 66 Pa.C.S. § 1501.

6. A utility is not required to provide perfect service. See *Manuel A. Biason v. Metropolitan Edison Company*, PUC Docket No. C-00004450 (Opinion and Order entered December 19, 2001); *DeFranscesco v. West Penn Power Company*, 329 Pa. Superior Ct. 508, 478 A.2d 1295 (1984).

7. Complainant did not meet her burden of establishing that installation of a Smart Meter at her home would be unsafe or unreasonable or that PECO was unreasonable in responding to her concerns and questions. 66 Pa.C.S. § 1501.

