

**BEMFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Theresa Gavin	:	
	:	
v.	:	C-2017-2616249
	:	
PECO Energy Company	:	

INITIAL DECISION

Before
Darlene D. Heep
Administrative Law Judge

INTRODUCTION

Theresa Gavin does not want an AMI meter, also known as a smart meter, installed at her home. She alleges in the Complaint that such meters cause health problems and property damage and are in violation of her 4th Amendment right to be free from searches. This decision finds that the prevailing evidence presented does not support the contentions of Ms. Gavin or that installation of an AMI meter would be unreasonable or unsafe under 66 Pa.C.S. § 1501 and dismisses the formal Complaint.

HISTORY OF THE PROCEEDING

On July 24, 2017, Theresa Gavin (Complainant) filed a formal Complaint with the Pennsylvania Public Utility Commission (Commission) against PECO Energy Company (PECO or Respondent). On the formal Complaint form, Ms. Gavin avers that: 1) PECO was forcing installation of an AMI meter by threatening to shut off her service, or has already shut off her service; 2) she was having a reliability, safety or quality problem with her utility service in that

the AMI meters, (a) are unsafe, (b) cause health problems, (c) are not UL¹ listed, (d) are not surge protected and (e) cause fires in homes because the meters do not have the safety features of analog meters such as heatproof backs and glass domes; 3) radiation from the AMI meters is cumulative and impedes natural healing; 4) she never agreed to installation of an AMI meter; 5) forced installation of an AMI meter on her home is a violation of her 4th amendment rights and she has a right not to be spied upon; and 6) she refuses to have this device on her home and an alternative can accommodate her. Ms. Gavin further averred: that State Representative Robert Godshall has analog meters on properties surrounding his place of business; that Representative Godshall refuses to allow PECO customers to opt out of AMI meters in Pennsylvania; and that his son is a PECO employee.

PECO filed an Answer on August 8, 2017. In the Answer, PECO reported that the Complainant contacted PECO's installation contractor and stated that she was refusing installation of an AMI meter. PECO further averred that the company is installing the meters in accordance with Act 129 and that PECO has a right to terminate a customer that does not permit the company access to the meter for purposes of installing, removing or changing a meter in accordance with Section 18.3 and Section 10.5 of the PECO Electric Tariff.

On August 30, 2017, a Hearing Notice set the Initial In-Person Hearing for January 30-31, 2018. On August 31, 2017, a Prehearing Order was issued setting deadlines for the exchange of information and exhibits.

The hearing began on January 30, 2018, as scheduled. Complainant appeared *pro se* and presented one witness, LeAnn Gavin, and a group of reports that was admitted as Complainant Exhibit 1.

PECO was represented by Ward Smith, Esquire, Shawane Lee, Esquire and Thomas Watson, Esquire. The Company presented four witnesses. Testifying on behalf of PECO were: Mr. Bryan Uber, PECO Supervisor for Customer Field Operations; Mr. Glenn Pritchard, PECO Principal Engineer for the AMI Deployment Project; Dr. Christopher Davis,

¹ UL is an abbreviation for Underwriters Laboratory.

Professor with a Ph.D. in Physics; and Dr. Mark Israel, Physician. Thirty-four exhibits were admitted on behalf of PECO. The record closed on March 5, 2018 upon receipt of the 223-page transcript.

FINDINGS OF FACT

1. The Complainant is Theresa Gavin, who resides and is a PECO customer on Winchester Avenue in Philadelphia, Pennsylvania, the service address.

2. Respondent is PECO Energy Company.

3. The service address is a twin ranch home. (Tr. 17).

4. PECO replaced its AMR (automatic meter reading) electric meters with AMI (advanced metering infrastructure) electric meters, also known as smart meters. (Tr. 60, 89, 92).

5. PECO installed its AMR system in late 1999 and early 2000. (Tr. 92).

6. PECO contracted with CORIX and Grid One to install AMI meters. (Tr. 60).

7. PECO sent out letters to customers both 21 and 45 days in advance of smart meter installation. (Tr. 60).

8. A 45-day letter was mailed to the Complainant on April 1, 2012, to advise that the company would be in the area changing meters within the next couple of months. (Tr. 63, 64; PECO Exhibits BU-1, BU-2).

9. The 45-day letter asked the customer to notify PECO if the meter was indoors so that an appointment to change the meter could be scheduled. (Tr. 64; PECO Exhibit BU-2).

10. A 21-day letter was sent to the Complainant on April 25, 2012. (Tr. 65, PECO Exhibit BU-1; BU-3).

11. Both the 21-day letter and the 45-day letter advised the customer to contact PECO if the customer had any questions. (PECO Exhibit BU-2 and BU-3).

12. The Complainant contacted PECO on May 17, 2012, and stated that she did not want the smart meter installed. (PECO Exhibit BU-1; Tr. 66).

13. The Complainant contacted PECO again on May 18, 2012 and stated that she wanted to opt-out of AMI installation because she was concerned about EMF² from the meter; PECO provided her with the contact information for Grid One. (PECO Exhibit BU-1; Tr. 66).

14. On May 21, 2012, the Complainant filed an informal complaint with the Bureau of Consumer Services (BCS), stating that she was refusing installation of an AMI meter at her home and requesting the removal of the smart meter installed at the home of her neighbor because she has experienced health issues such as migraines and ringing in her ears since its installation. (PECO Exhibit BU-1; Tr. 67).

15. Upon receipt of the May 21, 2012 informal complaint, BCS case number 002971598, PECO personnel called the Complainant and informed her that the meters were being installed as approved by the Commission and that PECO would investigate her concerns. (PECO Exhibit BU-1; Tr. 68).

² The concern at issue was referred to as radiation, electromagnetic fields and radio frequency fields. In this decision, the term EMF will be used.

16. On May 24, 2012, a DO NOT FIELD, or smart meter installation hold order, was placed on the Complainant's account. (PECO Exhibit BU-1).

17. On May 25, 2012, PECO AMI Deployment Analyst Denise Long sent the Complainant a letter stating, *inter alia*, that the AMI meters were being deployed in accordance with Act 129 and that the EMFs associated with the AMI meter were lower than the limits set by the Federal Communications Commission. (PECO Exhibit BU-5).

18. The May 25, 2012 letter from Analyst Long also stated that if installation is refused, termination of service may result. (PECO Exhibit BU-5).

19. BCS dismissed the Complainant's informal complaint at BCS case number 002971598 on August 23, 2012. (PECO Exhibit BU-6).

20. The Complainant filed a formal Complaint on September 13, 2012, stating that her health and sleeping has suffered since installation of a smart meter at the home of her neighbor. (Tr. 77).³

21. An AMI meter was installed at the home of the Complainant's neighbor on May 17, 2012. (Tr. 74).

22. The neighbor's AMI meter was removed, and a different AMI meter was installed on September 18, 2012. (Tr. 73).

23. Prior to installation of the AMI meters, the Complainant's neighbor had an AMR meter. (Tr. 74).

24. Additional DO NOT FIELD orders were issued to PECO employees on 6/14/12, 11/5/12 and 1/24/13. (PECO Exhibit BU-1).

³ This matter was dismissed on Preliminary Objection by Administrative Law Judge Kandace F. Melillo, order dated November 26, 2012.

25. On July 10, 2017, PECO sent out a reengagement letter to Ms. Gavin regarding meter installation and again advised her that smart meters were being installed, that refusing meter installation could result in termination and provided a contact email and telephone number to address any questions. (PECO Exhibit BU 8).

26. On July 12, 2017, a ten-day shut off notice was sent to the Complainant. (Tr. 78-79).

27. On July 17, 2017, the Complainant filed BCS informal complaint No. 003545077. (PECO Exhibit BU-10).

28. In addition to letters sent by PECO to customers, PECO also called customers to talk with them about smart meter installation. (Tr. 61).

29. As of the date of the hearing, except for customers with complaints filed with the Commission, PECO had completed its smart meter deployment process. (Tr. 61).

30. Customers who do not have AMI meters have previously installed AMR meters and are receiving estimated bills. (Tr. 61).

31. The Complainant has an Itron Centron AMR meter. (Tr. 30; 104).

32. The Complainant's AMR meter was installed at the service address on July 23, 2001. (Tr. 85).

33. The AMR system was discontinued in 2017. (Tr. 93, 94).

34. The AMR system meters transmitted information, through radio frequency (EMF), every five minutes. (Tr. 93).

35. The AMR meter on the Complainant's house transmits 288 times per day at a power transmission of one watt for 20 milliseconds, or 5.76 seconds per day. (Tr. 95; PECO Exhibit GP-3).

36. At the time of the hearing, PECO used the Sensus AMI communications system. (PECO Exhibit GP-4).

37. The AMI meters used on the Sensus communications system have a FlexNet radio that transmits usage information to PECO six or eight times a day at 2 watts for 70 milliseconds, for a total of 0.42 to 0.56 seconds per day. (PECO Exhibit GP-5). (Tr. 99; 100).

38. The AMI meters also have a ZigBee radio, which transmits to communicate with smart appliances in the home or smart thermostats. (Tr. 100).

39. The ZigBee radio transmits every thirty seconds for 0.7 seconds at 130.92 milliwatts for a total of 2.016 seconds per 24-hour day. (PECO Exhibit GP-5).

40. Together, the ZigBee and Flexnet radios in a PECO AMI meter transmit for 2.426 seconds per 24-hour day. (PECO Exhibit GP-5).

41. At the time of the hearing PECO had recently begun using Aclara meters that have a FlexNet radio but that do not have a ZigBee radio. (Tr. 101).

42. PECO does not use a mesh AMI network. (Tr. 103).

43. Smart Meters are not capable of sending a surge into the household because it does not generate or change the electricity. (Tr. 111).

44. Complainant's current electric meter is located on the rear of her home near her bedroom. (Tr. 27).

45. The smart meter installed on the home of the Complainant's neighbor is also located near the rear bedroom of the attached house, approximately ten feet from the Complainant's bedroom. (PECO Cross Exhibit 2).

46. The meter at the home of the neighbor is a Landis+Gyr Focus AMI meter. (Tr. 105).

47. The Complainant has satellite TV and the satellite dish is located near her current electric meter. (Tr. 27).

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. Pub. Util. Comm'n*, 654 A.2d 72 (Pa.Cmwlt. 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. § 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. The Complainant seeks 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 a respondent submits evidence of “co-equal” weight to counter a complainant’s evidence, the complainant has not satisfied the burden of proof unless additional evidence opposing the 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. 282, 443 A.2d 1373 (1982), *aff’d*, 501 Pa. 443, 461 A.2d 1234 (1983).

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. Super. 278, 166 A.2d 96 (1961); and *Murphy v. Comm., Dept. of Public Welfare, White Haven Center*, 85 Pa. Cmwlth. 23, 480 A.2d 382 (1984).

Threat to Shut off Service

During the hearing, Ms. Gavin averred that the smart meters are optional and that it is a violation to threaten her with termination for refusing a smart meter. A review of the record and Commission rulings do not support finding for Ms. Gavin on this issue.

Act 129 of 2008 (“the Act” or “Act 129”) directed 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)(1), (2). The Act requires that any smart meter technology utilized have bidirectional or two-way communication technology. 66 Pa.C.S. § 2807(g).

The Commission ordered EDCs with greater than 100,000 customers to follow the guidelines established for Smart Meter technology procurement and installation on June 18,

2009. EDCs were required to file a Smart Meter technology procurement and installation plan.⁴ The Commission approved the smart meter installation plan developed by PECO.⁵ Under that plan, PECO is replacing AMR meters with AMI or “smart meters.” The Commission recently noted in *Frompovich v PECO Energy Company*, Docket Number C-2015-2474602 (Ordered and Entered May 3, 2018) that "pursuant to Section 2807(f) of the Code, the Commission’s *Smart Meter Procurement and Installation Implementation Order*, and PECO’s Smart Meter Phase I & II Orders approved by the Commission, PECO has been subject to the requirement to replace all AMR meters owned by it within its service territory with AMI meters, or smart meters." *Id* at 9-10.

Additionally, the Commission determined in *Maria Povacz v. PECO Energy Company*, Docket No. C-2012-2317176 (Order and Opinion entered January 24, 2013), that there is no provision in the Code, the Commission’s Regulations or Orders that allows a PECO customer to “opt out” of smart meter installation.

The PECO tariff allows for the shut-off notices sent to the Complainant. A public utility’s Commission-approved tariff is *prima facie* reasonable, has the full force of law, and is binding on the utility and the customer. 66 Pa.C.S. § 316; *Kossmann v. Pa. Pub. Util. Comm’n*, 694 A.2d 1147 (Pa.Cmwlth. 1997); and *Stiteler v. Bell Telephone Co. of Pennsylvania*, 379 A.2d 339 (Pa.Cmwlth. 1977).

PECO Tariff Electric Section 6.4 provides that the company owns and maintains the meters. Under Section 14.5 of the PECO electric tariff, the company will select the type and make of the metering equipment to be used for meters supplied by the company and may from time to time change or alter the equipment.

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*).

Additionally, Section 10.1 of PECO's tariff requires that PECO repair and maintain its own property installed on the premises of the customer, such as the meter. Section 10.5 of PECO's tariff states that PECO employees shall have access to the premises of the customer at all reasonable times for the purpose of reading meters, and for installing, testing, inspecting, repairing, removing or changing any or all equipment belonging to the Company. Where access to the meter is refused, the Company may terminate service on reasonable notice under PECO tariff Section 18.3. As the Commission stated in *Frompovich, supra.*, "It is well-settled that where a customer refuses a utility access to its meter, the utility may terminate service after required notice is provided." *citing* 52 Pa. Code § 56.81(3).

On April 1, 2012, and April 25, 2012, PECO sent letters to the Complainant notifying her that PECO would be installing new meters. (FOFs 8-11). On May 17, and 18, 2012, the Complainant contacted PECO and stated that she did not want the smart meter installed. By letter dated May 25, 2012, PECO notified the Complainant that there was a possibility of shut off if installation was not allowed and that the meters were being installed in accordance with Act 129 and as approved by the Commission. PECO placed DO NOT FIELD notices on the Complainant's account to stall installation of the smart meter. (FOFs 16, 24).

In May of 2017, PECO sent the Complainant what is referred to as a re-engagement letter, again advising that the smart meters were being installed, providing contact information if there were any questions and again noting that termination was possible if she did not allow installation. (FOF 25). A ten-day shut off notice was issued by PECO to the Complainant on July 12, 2017.

The Complainant refused smart meter installation. PECO acted in accordance with its tariff and the Commission-approved deployment plan when it sought to deploy the smart meters. PECO provided the Complainant with several notices that her service could be terminated. PECO did not terminate the Complainant's service and she had service at the time of the hearing. The Complainant had an AMR meter and PECO was ending its AMR system in 2017. PECO requested access to the Complainant's service address to change the meter as part of its changing system.

PECO issued a 10-day termination notice to the Complainant in July of 2017, about five years after the Complainant first refused smart meter installation. The 10-day termination notice was issued as authorized under the PECO tariff Section 18.3. Sending a shut-off notice to Ms. Gavin was not unreasonable or a violation because the Complainant refused access to PECO. The Complainant cannot prevail here.

State Representative Robert Godshall

The Complainant made several statements and averments in her Complaint concerning State Representative Godshall and his legislative duties, motivations and decisions. (Complaint at 3). This is not the forum in which to address her concerns. The Commission has general administrative power and authority to supervise and regulate all public utilities doing business within this Commonwealth. The Commission may make such regulations, not inconsistent with law, as may be necessary or proper in the exercise of its powers or for the performance of its duties. 66 Pa.C.S. § 501. It has the authorization to hear and determine complaints alleging a violation of any law or regulation that the Commission has jurisdiction to administer. 66 Pa.C.S. § 701. Claims pertaining to the legislative actions of a State Representative are not within the jurisdiction of the Commission. Therefore, any claims regarding Representative Godshall shall be dismissed.

Fourth Amendment

Ms. Gavin avers that installation of the meter will violate her 4th Amendment Rights and that she has a right not to be spied upon. Ms. Gavin contends that a smart meter can provide personal information such as when she is at home and her activity. She is also concerned about the possible hacking of the PECO AMI system and the use of information obtained. (Tr. 32, 34, 46).

The Fourth Amendment to the U.S. Constitution states:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

The fourth amendment proscribes only governmental action. *See Commonwealth v. Ellis*, 415 Pa. Super. 220, 223, 608 A.2d 1090, 1091 (1991). Whether the installation and use of smart meters constitutes government action need not be reached because no evidence supports a finding that the meters are surveillance devices that constitute search and seizure.

In response to the Complainants concern that the meters were a used for surveillance, Mr. Pritchard, a PECO engineer who was recognized as an expert in the design, operations and technology of advanced meter installations, stated that smart meters record usage but they cannot determine which appliances are being used or when someone is at home or not. He also testified that PECO uses the available technology to encrypt the usage data sent to PECO for billing. He added that the information collected is not given to the public unless authorized by the customer and it is not available to all PECO employees but only to those who require it for business purposes. (Tr. 114-116).

There was no evidence that the smart meters violate privacy or are surveillance devices. Also, the evidence presented showed that PECO acts reasonably to secure the information that it does collect by employing encryption devices. There was no evidence to the contrary to support the Complainant on this issue.

Fire Safety

The Complainant avers that smart meters cause fires. (Tr. 16). She also contends that they are not safe because they are not UL listed (Tr. 16), do not have surge protectors which will lead to a surge that will ruin appliances (Tr. 32), and do not have heatproof backs (Tr. 37). She contends that because they do not have glass domes and are made of plastic, they are less safe than analog meters. (Tr. 20).

As the Commission stated in *Frompovich, supra.*, pursuant to Section 1501 of the Code, the Commission has developed regulations governing electric safety standards. *See generally* 52 Pa. Code § 57.28. An EDC must use reasonable efforts to properly warn and protect the public from danger and to exercise reasonable care to reduce the hazards to which customers may be subjected to by reason of the EDC's provision of electric utility service and its associated equipment and facilities. 52 Pa. Code § 57.28(a)(1). *Id* at 11.

With respect to Ms. Gavin's concern that the meters do not have surge protectors, Mr. Pritchard testified that the role of the meter is not to protect the house, but the meters are designed to protect the meter circuitry itself. (Tr. 111). He also testified that the meter itself is not capable of sending a surge into the household because it does not generate or change the electricity. (Tr. 111).

Mr. Pritchard also addressed the concern of the Complainant that, unlike older meters, the smart meters do not have glass domes and Bakelite backs. (Tr. 112). He testified that the new meters have "switched to contemporary plastics that actually have higher performance in many cases than the Bakelite." (Tr. 113). He further stated that there is no need for a glass bezel on top of the meter, that it added unnecessary weight and that with the plastics, the meters meet UL standards. (Tr. 113).

The Complainant is concerned that the AMI meters are not UL listed for safety. Mr. Pritchard testified that UL is one of the laboratory's certified to test items for compliance with industry standards. (105-106). He further testified that when the company first began to look at smart meters in response to Act 129, around 2009, meters were not considered consumer equipment and therefore there was no UL standard *per se*. (Tr. 107). UL subsequently developed a standard for electric meters, UL 2735. (Tr. 108). Part of the standard is consideration of the materials the meter is made of and the EMF reading and frequency characteristics. (Tr. 109). He further explained that the UL stamp or sticker is placed on items that are reviewed during manufacturing. PECO had already installed many of its meters by the time the UL standard for such meters was developed. However, PECO subsequently had the meter brand that it used tested and the meter passed all of the UL 2735 tests. (Tr. 110). The meter that was available

through PECO at the time of the hearing, and likely to be installed at the Complainant's home, is the Aclara meter. Aclara meters used by PECO bear the UL stamp. (Tr. 111).

Mr. Pritchard acknowledged that there were problems with the brand of smart meter initially installed by PECO but testified that all such meters had been removed and replaced by Landis+Gyr and now Aclara meters. (Tr. 123-124, 128). He also testified that PECO would install either the Aclara or Landis+Gyr meter at the Complainant's home and that there have not been any problems with the Landis+Gyr or Aclara meters. (Tr. 129, 131).

No evidence was introduced showing that these newer meters cause fires or are otherwise a fire hazard. Complainant did not satisfy her burden of proving that the type of AMI meter to be installed at her home would constitute an unsafe fire hazard in violation of 66 Pa. C.S. § 1501. The Complainant cannot prevail on this issue.

Health

Ms. Gavin contends that the smart meters cause health problems and therefore are unsafe. She states that she has not slept a whole night since her neighbor had a smart meter installed approximately ten feet from where she sleeps. (Tr. 17, 23). She is concerned about electromagnetic fields, or EMFs, emitting from the smart meter. (Tr. 21). She also read that these emissions extend through the house wiring. (Tr. 21). She considers her home her "safe place" and tries to reduce her exposure to EMFs. Although she has a cell phone, she uses it mostly for text messaging and in total only about 20 minutes per day. (Tr. 33, 34). She does not use a microwave, has a landline and will not get a smart TV. (Tr. 22). She does not want a smart meter that she believes sends EMF pulses up to 25,000 times a day attached to her home. (Tr. 21-22). It is her understanding, based upon her reading of articles and studies such as those admitted as Complainant Exhibit 1, that a pulse for the smart meter is a constant pulse of radiation (Tr. 19). She also stated that if she leaves her house for 45 minutes, she feels better. (Tr. 24).

LeeAnn Gavin, the Complainant's daughter, testified that her mother takes good care of her health but that she has watched her mother's health deteriorate since Grid One, the PECO contractor, installed smart meters in the neighborhood. (Tr. 40). Seeing this change in her mother, she began researching the issue and it is her understanding that many people have this response. (Tr. 43). In conducting her research, she came upon the Bio Initiative Report 2012 and testimony before other utility commissions that refer to the smart meters as irrational, a security risk and not necessary. (Tr. 51). In much of her research, the meters were referred to as having dangerous effects on the body based on studies of the meters and their effects. (Tr. 50). The Complainant established a *prima facie* case on this issue; however, PECO presented countering and prevailing testimony.

Ms. Gavin's concerns about the meters were premised on her understanding that the meters "pulse" and emit EMFs. Mr. Pritchard testified that the smart meters used by PECO do not pulse, in the traditional scientific sense, when transmitting data and that to communicate, they use a conversation of tones. He stated that "It is not like a digital stream of data that you might think of pulses themselves." (Tr. 114). Dr. Davis concurred with Mr. Pritchard stating that the PECO meters do not "pulse." (Tr. 142). The overwhelming testimony was that, unlike other users of AMI technology, PECO chose an AMI system that is not a mesh system, which requires more frequent communication, and therefore the EMF emissions from PECO's meters do not use pulses for communication. (Tr. 103, 114).

PECO witness Dr. Christopher Davis, Ph.D., concurred with Mr. Pritchard that the PECO AMI meters do not produce pulsed fields. Dr. Davis has a Ph.D. in Physics and was accepted as an expert in physics, biophysics, chemistry, electrical engineering, electromagnetics, bioelectromagnetics and radio frequency, bioelectromagnetics and dosimetry. (Tr. 140). Among other pursuits, Dr. Davis is a university professor and researcher who has conducted experiments and studies involving EMFs. (Tr. 182).

That AMI meters produce EMFs is not in dispute. (Tr. 166). In defining radio frequency, Dr. Davis stated:

Well, radio frequencies cover a very good range of frequencies that go way up to hundreds of gigahertz. And of course, within that frequency range are the frequencies that are emitted by smart meters. And when we talk about a radio frequency field, we're talking about the influence of those fields as they propagate away from the source of the fields. In other words, the transmitter in the radio sends out this - you could call it, a field that travels out at the speed of light away from the antenna in the meter.

(Tr. 141).

With respect to radio frequency radiation, Dr. Davis stated:

It's the correct scientific term for the propagation of energy and fields away from a source. So, one could talk about radio frequency radiation as the disturbance of 2 electromagnetic waves as it travels away from a source.

(Tr. 141-142).

Dr. Davis also testified that if the Complainant replaced her current AMR meter with the PECO AMI meters, her exposure to radio frequencies would be even smaller, reduced by 79%. (Tr. 154-155). He also testified that Ms. Gavin's UHF TV exposure is, at her home, over a hundred times larger than what emits from a PECO meter. (Tr. 158). He also stated that a "very important" distinction must be made between ionizing radiation, which includes very high frequencies and x-rays, and non-ionizing radiation, which includes low frequencies, such as those emitted by smart meters.

Dr. Davis also testified that the AMI meters used by PECO comply with the Federal Communications Commission limits on EMF exposure from the meters. (Tr. 143, PECO Exhibit CD-3). He also noted that the daily average frequencies emitted by PECO AMI meters for the FlexNet radio is 5.8 million times smaller and the ZigBee radio, 164 million times smaller, than the FCC maximum permissible exposure. (Tr. 144-145, PECO Exhibit CD-5). He also underscored that even at peak, when it is transmitting, the FlexNet emissions are 37 times smaller than the FCC limits and the ZigBee radio 3,800 times smaller than the FCC maximum permissible exposure. (Tr. 149).

Ms. Gavin was also concerned about "dirty electricity," which she believed was created by the smart meter. (Tr. 168-169). Dr. Davis testified that this was a layman's term for "the natural concept of ...rotating machines generating harmonics" and that this occurs with refrigerators and hair dryers or electric razors and almost any electric appliance. (Tr. 170). There was no testimony or evidence that it was harmful.

Dr. Davis calculated that if Ms. Gavin used her phone as she testified about 20 minutes per month, it would take over 250 years of exposure to the AMI meter, sitting next to it about one meter away, to equal EMF exposure from the cell phone. (Tr. 159-160). He also testified that cellphones operate at about the same frequency as smart meters but the exposure from a cell phone is much higher because it is placed close to your body. (Tr. 173).

Dr. Mark Israel, M.D., also testified for PECO. He is a pediatric oncologist and at the time was the head of a nonprofit foundation for cancer research at Dartmouth Medical School. (Tr. 185). He also conducted medical research at the National Institute of Health and at Dartmouth Medical School. (Tr. 186). He began to focus on and developed an expertise in the research and findings regarding EMF exposure and health when pediatric cancer patient parents began to ask whether exposure to power lines, cellphones or appliances contributed to the cancer. (Tr. 188). Dr. Israel was recognized as an expert in medicine and medical research and exposure to radio frequency electro-magnetic fields and health. (Tr. 190).

Prior to the hearing, Dr. Israel was informed that Ms. Gavin had general health concerns about exposure to EMFs, in particular that the smart meters cause health problems and that radiation is cumulative and impedes natural healing. (Tr. 194). He began his usual medical evaluation methodology. He researched studies that looked at fundamental, biological problems and whether they are disordered by EMFEMFs. (Id.). He reviewed controlled laboratory experiments. He also looked at studies involving genetics, reproduction, growth and development. (Tr. 195). Dr. Israel testified that the studies did not show that EMFs cause or contribute to any of the disorders or impede natural healing. (Id.) He also consulted the findings of various health authorities and none identified or concluded that there were adverse health

effects or anything that impeded natural healing associated with EMFs from smart meters. (Tr. 197).

It was Dr. Israel's opinion that there is no medical basis to conclude that radio frequency fields from smart meters, in particular PECO's AMI smart meters, cause or will cause or contribute to any adverse health effect. (Tr. 197). Dr. Israel considered the specific symptoms and ailments of the Complainant. He also addressed concerns about sleep and memory disturbance. Dr. Israel testified that based on his research of the literature, both medical and scientific, there was no reliable medical basis upon which to conclude that radio frequency fields contribute to or exacerbate or cause sleep disorders that adversely affect memory. (Tr. 198- 200; PECO Exhibit MI-3).

Dr. Israel also found no controlled scientific studies that showed that radio frequency fields contributed to malaise. (Tr. 203). Although he did come across one investigator who found a relationship to malaise, Dr. Israel discounted that conclusion, finding that the study was based on eight individuals who claimed, or self-reported, that their malaise was caused by EMFs and also that there was no attempt to conduct an actual study or determine whether there was some other cause associated with it. (Tr. 203). He testified that malaise is a very common symptom and requires careful medical evaluation. (Tr. 141-142).

In the Complaint, the Complainant stated, and her daughter testified, that she has experienced ringing in her ears. (Tr. 41, 69; Complaint)⁶. Referring to the ringing in the ears as Tinnitus, Dr. Israel testified that there were a number of studies on this matter. He testified that the scientific studies did not consistently show that there was a reliable medical basis upon which to conclude that EMFs cause or contribute to Tinnitus.

Although Ms. Gavin and her daughter stated that they had read various articles stating that smart meters produced adverse health effects, no testimony supporting these assertions in the articles was introduced. Some of these articles were accepted into the record to show that the Complainant had researched the issue, not for the truth of the matter asserted

⁶ The Complainant did not testify regarding this claim.

therein or to support Ms. Gavin's lay opinion. They lacked authentication. See Pa. R.E., Rule 701, Rule 705 and Rule 901.

As the Commission noted in *Catherine Frompovich v. PECO Energy Co.*, C-2015-2474602 (Order and Opinion entered May 3, 2018), a lay witness's testimony is limited to opinion not based on scientific, technical or other specialized knowledge within the scope of Rule 702. A lay witness is limited to giving opinion that is rationally based on the witness's own perceptions and helpful to clearly understanding the witness's testimony or to determining a fact in issue.

The conclusion of the Commission in *Frompovich* also applies here: The evidence presented at this hearing showed that some of the emissions of concern to the Complainant do not emanate from AMI meters and that any actual emissions from AMI meters are miniscule and harmless and measure significantly less than those to which the average person is exposed daily. See *Frompovich* at 57.

The preponderant evidence was the expert opinions of Dr. Davis, Mr. Pritchard and Dr. Israel on behalf of PECO. These expert opinions outweighed the evidence presented by Ms. Gavin and therefore, in this proceeding, were more convincing than the evidence presented by the Complainant. See *Se-Ling Hosiery, Inc., supra* at 8. Therefore, the Complainant cannot prevail on her claims here.

CONCLUSIONS OF LAW

1. Claims concerning the legislative actions of a State Representative are beyond the jurisdiction of the Commission. 66 Pa.C.S. §§ 701, 501.

2. The Commission has jurisdiction over the parties and the remaining claims of this proceeding. 66 Pa.C.S. § 701.

3. A lay witness's testimony is limited to opinion not based on scientific, technical or other specialized knowledge within the scope of Rule 702. *Catherine Frompovich v. PECO Energy Co.*, C-2015-2474602 (Order and Opinion entered May 3, 2018).

4. The Complainant did not 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. A public utility's Commission-approved tariff is *prima facie* reasonable, has the full force of law and is binding on the utility and the customer. *Pennsylvania Electric Co. v. Pa. Pub. Util. Comm'n*, 663 A.2d 281 (Pa.Cmwlth. 1995); *Respond Power, LLC v. Pennsylvania Electric Company; Respond Power LLC v. West Penn Power Company*, Docket Numbers C-2016-2576287; C-2016-2576292 (Order entered July 13, 2017).

6. Utility companies are required to furnish and maintain adequate, efficient, safe, and reasonable service and facilities. 66 Pa.C.S. § 1501; 52 Pa. Code § 57.194.

7. The Complainant has not established that installation of an AMI meter at the service address would be unsafe or unreasonable. 66 Pa.C.S. § 332(a).

8. The Complainant did not establish by a preponderance of the evidence that the meter PECO wishes to install is unsafe, causes fires or would be in violation of her rights under the 4th Amendment of the United States Constitution.

ORDER

THEREFORE,

IT IS ORDERED:

1. That the claims of the Complainant in Theresa Gavin v. PECO Energy Company at Docket Number C-2017-2616249 are denied and dismissed.
2. That the Docket at C-2017-2616249 be marked closed.

Date: June 7, 2018

/s/
Darlene Heep
Administrative Law Judge