BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Patti Lynn Caesar	:	
	:	
v.	:	C-2017-2605462
	:	
PECO Energy Company	:	

INITIAL DECISION

Before
Darlene Davis Heep
Administrative Law Judge

INTRODUCTION

The Complainant has not established that installation of an AMI meter at her home would be unsafe or unreasonable in violation of 66 Pa.C.S. § 1501 or that PECO violated the Pennsylvania Public Utility Code (Code), Commission Regulations or a Commission order when it issued a shut off notice to the Complainant. The evidence also did not establish that the AMI meters PECO proposes installing violate privacy or are fire hazards. The Complaint will be dismissed.

HISTORY OF THE PROCEEDINGS

On May 17, 2017, Ms. Patti Lynn Caesar (Complainant or Ms. Caesar) filed a formal complaint against PECO Energy Company (PECO or Company) stating that PECO was threatening to shut off her service and that she was refusing to have an AMI meter, also known as a smart meter, installed in her home "because of health (electro-sensitivity[1]) and safety reasons (fires)."

[1] During the hearing, the emissions of concern to the Complainant were referred to in testimony and exhibits, interchangeably, as electromagnetic fields, radio frequency fields and electromagnetic radiation, *inter alia*. "EMF" will be used throughout to refer to such emissions.

PECO filed an Answer on June 1, 2017, denying all major allegations in the Complaint. The Answer also stated the Complainant refused a smart meter and that smart meters were being installed in accordance with Commission Orders and Act 129. The Company also stated that it provided the Complainant with notice of installation and possible termination. PECO also requested that the Complaint be dismissed.

On June 16, 2017, a hearing was scheduled for December 5-6, 2017 via hearing notice.

Ms. Caesar filed a response to the Answer on June 19, 2017, in which she stated that the Complaint should not be dismissed and should be considered in its entirety.

A pre-hearing order issued on June 21, 2017, confirmed the hearing date and set discovery and other procedural deadlines.

On November 20, 2017, Ms. Caesar filed a written request for continuance of the hearing date due to family medical matters.

An Order granting the request for continuance was issued on November 21, 2017. A Hearing Notice rescheduling the hearing for February 22, 2018 was issued on November 28, 2017.

An evidentiary hearing was held on February 22, 2018, as scheduled. Ms. Caesar represented herself and introduced one exhibit. 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; Christopher Davis, Ph.D. in Physics; and Dr. Mark Israel, Physician.

On May 9, 2018, a Briefing Order was issued, requiring the filing of Main Briefs by June 18, 2018 and Reply Briefs by July 18, 2018.

On or about June 14, 2018, the Complainant contacted the Commission and stated that she had been unable to read the transcript of the hearing. To allow the Complainant additional time to review the transcript, an extension of time for briefs was issued on June 15, 2018, requiring Main Briefs by July 2, 2018 and Reply Briefs by August 1, 2018.

In a letter dated July 1, 2018 and filed with the Secretary on July 2, 2018, Ms. Caesar requested another extension of time to file briefs. PECO did not object to the extension. A Briefing Order was issued July 2, 2018, setting July 13, 2018, as the deadline for the filing of Main Briefs and August 8, 2018, as the Reply Brief deadline.

On July 2, 2018, the undersigned received an email from the Complainant stating that she had not yet completed her brief and requesting additional time to complete and file her Main Brief. The Complainant was informed that she had until July 13, 2018, to file her Main Brief and until August 8, 2018, to file a Reply Brief.

On July 13, PECO filed its Main Brief.

On July 16, 2018, PECO filed a Motion to Admit Counsel Thomas Watson *Pro Hac Vice*. The Motion notes that Mr. Watson has previously been admitted *Pro Hac Vice* to practice before this body and that he is a member in good standing of the Washington, D.C. Bar.

In a letter dated July 14, 2018 and filed on July 16, 2018, the Complainant requested another extension of time to file her Main Brief.

The Complainant filed her Main Brief on July 16, 2018.

On August 6, 2018, the Complainant filed an Answer to the PECO Motion to Admit Counsel *Pro Hac Vice*, opposing the Motion, averring that the filing was not timely, that Mr. Watson has appeared in numerous matters before the Commission and is therefore practicing law in Pennsylvania and that any evidence presented by Mr. Watson should be dismissed.

PECO filed a Reply Brief on August 8, 2018.

Ms. Caesar filed a Reply Brief on August 9, 2018.

On August 9, 2018, PECO filed a Reply to Objection to Motion to Admit Counsel Watson Pro Hac Vice.

By Order on August 17, 2018, the Motion for Admission of Mr. Watson *Pro Hac Vice* was granted.

On August 23, 2018, Ms. Caesar filed a request for extension of time to file an interlocutory appeal of the Order admitting Mr. Watson *Pro Hac Vice*. On October 2, 2018, an Order was issued giving the Complainant until October 12, 2018 to file an interlocutory appeal. No appeal was filed.

The record was closed on October 15, 2018, as no interlocutory appeal had been filed by the Complainant. The record consists of a 176-page transcript and 27 exhibits.

FINDINGS OF FACT

1. The Complainant is Patti Lynn Caesar, a PECO residential electric customer at 212 Williamsburg Road, Ardmore, Pennsylvania (service address). (Tr. 6; Complaint).

2. The Respondent is PECO Energy Company.

3. The Complainant's meter is now outdoors but was indoors for four years. (Tr. 9, 128-129).

4. The Complainant is a psychologist and herbalist. (Tr. 12).

5. The Complainant grows her food, grows botanical medicine, and makes her own cleaning solvents and skin care products. (Tr. 12).

6. The Complainant reads labels on products because she is sensitive to chemicals in many things and avoids things that will make her ill. (Tr. 12).

7. The Complainant has a cell phone that she uses infrequently, about half an hour a day, but she keeps the phone on and with her for client contacts. (Tr. 12,40).

8. She places her cell phone as far away from her as possible when she sleeps (Tr. 12).

9. The Complainant does not have a microwave and her television is not a smart TV. (Tr. 13).

10. The Complainant has a computer, but she turns off the router when she is not using it and at night. (Tr. 13, 38).

11. Ms. Caesar spends about two hours per week using her computer for billing. (Tr. 38).

12. Ms. Caesar has spent 15 to 20 hours per week in her office for four and a half years. (Tr. 53).

13. There are four AMI meters at her office building, one electric and three gas. (Tr. 61).

14. Mr. Glenn Pritchard, PECO Manager of Advanced Grid Operations and Technology, is as an expert in the design, operations and technology of advanced meter installations.

15. PECO has 1.7 million electric meters and 530,000 gas meters. (Tr. 63).

16. Prior to installation of the AMI system, PECO had an Automatic Meter Reading (AMR) system. (Tr. 61).

17. The PECO AMR system is no longer operational as of April 2017. (Tr. 61).

18. The Complainant has an AMR meter. (Tr. 63).

19. The meter itself is an electrical mechanical or analog meter but has a transmitter that operates like an AMR meter. (Tr. 63).

20. Although the AMR system is not operational, the AMR meters are still transmitting data but with no means to receive the data. (Tr. 62).

21. PECO uses AMI meters from different manufacturers. (Tr. 67).

22. AMR meters have 288 transmissions per day for a total of 6 seconds per day. (Tr. 64).

23. AMI meters have a FlexNet radio.

24. The FlexNet radios transmit 6 or 8 times per day for a total of 0.42 to 0.56 seconds per day. (Tr. 66-67).

25. Some AMI meters also have Zigbee radios to communicate with smart appliances. (Tr. 67).

26. Zigbee radios transmit every 30 seconds to locate a smart appliance for a total transmission time of about 2 seconds per day. (Tr. 67).

27. The ACLARA meter does not have a Zigbee radio. (Tr. 68).

28. The PECO AMI system is not a mesh AMI system. (Tr. 69).

29. The PECO AMI system is a point-to-point system. (Tr. 69).

30. Dr. Christopher Davis, PhD, was accepted as an expert in the fields of physics, biophysics, chemistry, electrical engineering, electromagnetics, bioelectromagnetic, and radiofrequency module electromagnetics and dosimetry. (Tr. 109).

31. The Federal Communications Commission has EMF exposure limits. (Tr. 111; PECO Exhibit CD-3).

32. The AMI meter PECO seeks to install would reduce EMF exposure by 79% compared to the AMR meter currently installed at the Complainant's home. (Tr. 122)

33. Dr, Mark Israel, M.D. was recognized as an expert in medicine, medical research for radiofrequency, electromagnetic fields and health. (Tr. 136).

DISCUSSION

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. Ms. Caesar seeks relief from the Commission, and, therefore, has the burden of proof here.

"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).

This matter arises from efforts of PECO to install a smart meter at the residence of Ms. Caesar. 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). 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 adhere to 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.[2] The Commission approved the smart meter installation plan developed by PECO.[3] Under that plan, PECO is replacing AMR meters with AMI or "smart meters."

The Complainant contends that the state of North Carolina allows an opt out of smart meter installation for health reasons and she would like the Commission to do the same. (Caesar Reply Brief at 11). In 2013, the Commission concluded that there is no provision in the Code or the Commission's Regulations or Orders that allows a PECO customer to "opt out" of smart meter installation. *See Povacz v. PECO Energy Co.*, Docket No. C-2012-2317176 (Order and Opinion entered January 24, 2013).

However, the Commission has stated that a customer should be heard on an allegation that equipment installed by PECO may be unsafe or its installation unreasonable. In *Paul v. PECO Energy Co.*, Docket No. C-2015-2475355 (Order and Opinion entered June 14, 2018) *(Paul),* the Commission reiterated that, pursuant to Section 1501 of the Code, a public utility has a duty to maintain safe, adequate and reasonable service and facilities and to make repairs, changes, and improvements that are necessary or proper for the accommodation, convenience, and safety of its patrons, employees, and the public, referencing 66 Pa.C.S. § 1501. This provision provides:

---

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

[3] *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).

> § 1501. Character of service and facilities
>
> Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service and facilities, and shall make all such repairs, changes, alterations, substitutions, extensions, and improvements in or to such service and facilities as shall be necessary or proper for the accommodation, convenience, and safety of its patrons, employees, and the public. Such service also shall be reasonably continuous and without unreasonable interruptions or delay. Such service and facilities shall be in conformity with the regulations and orders of the commission. . . .

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.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.

In *Paul, supra.,* and *Frompovich v. PECO Energy Co.*, Docket No. C-2015-2474602 (Order and Opinion entered May 3, 2018), the Commission noted that pursuant to Section 1501 of the Code, the Commission developed regulations governing electric safety standards. Under these regulations, 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. *See* 52 Pa. Code § 57.28(a)(1).

The Commission has also stated that "[t]he ALJ's role . . . will be to determine, based on the record in this particular case, whether there is sufficient evidence to support a finding that Complainant was adversely affected by the smart meter or whether [the utility's] use of a smart meter to measure this Complainant's usage will constitute unsafe or unreasonable

service in violation of Section 1501 under the circumstances in this case." *Kreider v. PECO Energy Co.*, Docket No. P-2015-2495064 at 23 (Order entered Jan. 28, 2016). *See also Woodbourne-Heaton*, 1992 Pa. PUC Lexis 160, at *12-13; *Frompovich v. PECO Energy Co.,* Docket No. C-2015-2474602 at 10 (Opinion and Order entered May 3, 2018).

Decisions by the Commission must be supported by substantial evidence in the record. 2 Pa. C.S. § 704. "Substantial evidence" is an appellate standard of review and not a standard of evidence. *Samuel J. Lansberry, Inc. v. Pa. Pub. Util. Comm'n*, 578 A.2d 600, 602 (Pa.Cmwlth. 1990). Substantial evidence is such relevant evidence that a reasonable mind might accept as adequate to support a conclusion. *Consolidated Edison Company of New York v. National Labor Relations Board*, 305 U.S. 197, 229, 59 S.Ct. 206, 217 (1938).

Ms. Caesar filed this Complaint because, based on her findings after extensive research including a review of articles, papers and reports, she is concerned about the negative health effects of the EMFs emitted from smart meters. She is also concerned that AMI meters are possible fire hazards and that a smart meter system violates privacy. The preponderance of the evidence established, however, that the claims that there are harmful effects from the level of EMFs emitted from smart meters are not supported in the scientific community. Also, while other concerns of the Complainant may apply to some smart meter systems and devices, they do not apply to the system and meters utilized by PECO and the equipment PECO is seeking to install at her residence.

Request To Strike Testimony Of Dr. Davis And Dr. Israel

In her brief, the Complainant contests the granting of PECO's motion to admit Mr. Watson *Pro Hac Vice* and contends that the testimony of Dr. Davis and Dr. Israel should be stricken because it was presented through Mr. Watson. (Caesar Main Brief at 25-26).

The Complainant filed an opposition to PECO's motion on August 6, 2018. After full consideration of all positions, it was determined, that the admission of Mr. Watson was not

prejudicial, *inter alia*, and the motion was granted. The Order dated August 17, 2018, fully discusses the issue. There is no basis upon which to reconsider that order here. [4]

Ms. Caesar also questions the credibility of Dr. Davis and Dr. Israel. The Complainant did not object to accepting either Dr. Davis or Dr. Israel as experts during the hearing. (Tr. 136, 109). Ms. Caesar also had an opportunity to, and did, question both Dr. Davis and Dr. Israel about their qualifications and impartiality during the hearing. (Tr. 123-124; 155-157). The testimony of each was accepted, heard and made part of the record. The Complainant has presented no basis upon which to strike their testimony at this late stage of the proceedings. Therefore, the request to strike the testimony of Dr. Davis and Dr. Israel will be denied.

Evidence And Testimony From Other Proceedings

In her briefs, the Complainant references and seeks to introduce testimony and evidence from other proceedings. (See Caesar Main and Reply Briefs). The Commission's regulation at 52 Pa. Code § 5.407 allows for admission of the records of other proceedings. However, "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 and evidence from other proceedings will not be considered here.

Shut Off Notices

Although not pursued at the hearing, in her Complaint and in her briefs, Ms. Caesar objected to PECO sending her shut off notices. (Caesar Main Brief at 8; Reply Brief

[4] In *James Quigley and Teresa Mendez-Quiglev v. PECO Energy Company*, C-2017-2617558, the Complainants there also objected to an Order granting *Pro Hac Vice* admission of Mr. Watson. The Commission declined interlocutory review of the Order. *See James Quigley and Teresa Quigley v. PECO Energy Company*, Docket No. C-2017-2617558 (Opinion and Order entered September 20, 2018).

at 3; Complaint). PECO did not commit violations by sending the Complainant shut-off notices. There is no dispute that the Complainant refused the installation of an AMI meter and also informed PECO that if an AMI meter was installed, she would have it removed. (Caesar Main Brief at 5; Tr.30).

There was no violation by PECO here. The notices sent were in compliance with the PECO Tariff and Commission regulations.

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).

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. Section 10.1 of PECO's tariff requires that PECO repair and maintain its own property installed on the premises of the customer, here the electric 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 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).

The notices sent to the Complainant followed the notice requirement of Section 56.81 and were in accordance with the general notice provisions of Section 56.91, *et seq*. that

require that prior to a termination of service, the utility shall mail or deliver written notice to the ratepayer. 52 Pa. Code §§ 56.81 and 56.91, *et seq*. PECO committed no violations by issuing shut off notices and the Complainant does not prevail on this claim.

Health

Ms. Caesar testified that she is sensitive to electromagnetic radiation. (Tr. 13). She does not want an AMI meter because she is concerned about possible ill health effects caused by EMF emissions from those meters. Ms. Caesar testified that she believed that she had an analog meter at the time of the hearing and that it does not transmit radiofrequency fields. (Tr. 10, 28). She stated that if she is near where there are a lot of wireless devices, she can feel it in her body, and she will start to feel ill if overexposed. (Tr. 13). She remembers feeling ill in public buildings where there was a lot of wireless activity. (Tr. 14). The Complainant also testified that she extensively researched this issue and found a report stating that the National Institute for Occupational Safety and Health notes that scientific studies have raised questions about the possible health effects of EMFs. (Tr. 36; PECO Cross Exhibit 1).

In support of her testimony, Ms. Caesar introduced a letter from a physician. (Complainant 1). In the letter, it was stated that the Complainant suffers from Environmental Sensitivities, and that exposure to Extremely Low Frequencies and Radio Frequencies make her ill. The physician letter also stated that EMFs can cause a wide variety of health effects to the general public. Also, the physician letter contained a statement that the World Health Organization (WHO) classifies Smart Meter radiation as a Class 2B carcinogen and an extensive list of negative effects of EMF exposure. The letter also referenced The Board of the Academy of Environmental Medicine (Academy) as opposing installation of smart meters in homes and schools. (PECO Cross 3). The letter also stated that the Architectural and Transportation Barriers Compliance Board (Board) recognized electromagnetic sensitivity as a real and potential disability. (Id.).

The Complainant also testified that she is concerned because WHO classifies smart meter radiation as a class 2B carcinogen. (Tr. 19). Ms. Caesar does not want to submit to

what she considers experimentation or subject herself to something that can harm her health. She believes that WHO, the Academy and the Board are credible organizations and she does not consent to having something installed that may cause her harm. (Tr. 20-21).

The evidence presented did not support a finding that Complainant's health will be negatively affected by the installation of a smart meter at her home. Ms. Caesar testified that she spends 20 or so hours a week at her office. (Tr. 53). The building where her office is located has one electric and three gas meters, all AMI. (Tr. 61). However, Ms. Caesar reported no ill effects from the AMI meters at her office.

Also, while a physician signed a letter stating that Ms. Caesar was sensitive to EMFs and discussed claims that EMFs caused health problems, that letter and the opinion therein is not given much weight because it was established that the Complainant drafted some of the letter, parts of the letter were taken from form letters and statements of advocacy groups opposed to smart meters and the physician signing the letter was not present at the hearing for cross examination. (Tr. 45-46; PECO Cross Exhibits 1-4; Complainant 1).

Ms. Caesar's concerns were based on her general research and understanding of EMFs. There was persuasive testimony that PECO selected an AMI system that minimizes transmissions and, consequently, the EMF emissions. Mr. Glenn Pritchard, PECO Manager of Advanced Grid Operations and Technology, testified as an expert in the design, operations and technology of advanced meter installations. He explained:

> One of the principle differences is the actual architecture or how the meters send information ultimately back to the utility. PECO choose a solution that we like to call a point-to-point. So, the meters talk directly to the towers. Many of the competitive systems use an architecture called a Mesh Network. That actually creates what we can personify as a spiderweb of communications. Meters actually relay information between adjacent meters until the messages get back to a collection point. We examined several Mesh Network solutions for PECO. What we found was that it would require between 5,000 and 6,000 collection points across the PECO service territory to properly serve that. The point-to-point system we choose, the FlexNet system, has 175 or 178, specifically, collection points which is much, much less of the collection points. That is important because the number of transmissions or how active the radios are.

(Tr. 69). Mesh networks can have up to hundreds of thousands of transmissions. The PECO system does not. (Tr. 70).

Mr. Pritchard also testified that PECO previously used AMR meters, which transmitted 288 times per day for a total of 6 seconds per day. He further explained that PECO now uses different AMI meters from different manufacturers. (Tr. 67). All of the meters have FlexNet radios, which transmit 6 or 8 times a day for a total of about 0.5 seconds per day. (Tr. 66-67). He also described some PECO AMI meters as having a Zigbee radio to communicate with smart appliances in the home. (Tr. 67). The Zigbee radio transmits for a total of about 2 seconds per day. (Tr. 67). The ACLARA meter, proposed to be installed at the Complainant's home, does not have a Zigbee radio. (Tr. 68, 84). Therefore, the AMI meters PECO is seeking to install at the service address actually have fewer transmissions, and EMFs, than the AMR meter currently installed at the Complainant's home.

Dr. Christopher Davis testified on behalf of PECO and was recognized as an expert in the fields of physics, biophysics, chemistry, electrical engineering, electromagnetics, bioelectromagnetic, and radiofrequency module electromagnetics and dosimetry. Based on the data presented by Mr. Pritchard and his own calculations and knowledge, and the consensus among scientists, Dr. Davis stated that there was no basis upon which to conclude that the EMFs from PECO smart meters would be harmful. His testimony also showed that although Ms. Caesar makes efforts to reduce her exposure to EMFs (FOFs 5-10), her current exposure is significantly greater than any that would be related to installation of a smart meter.

He testified that televisions and smart meters are in the same frequencies in the electromagnetic spectrum and are not like x-rays, gamma rays and ultraviolet light, which can break bonds. (Tr. 113-114). He explained that the meters transmit information to PECO for a very short period of time, about every three hours, and then turn off. (Tr. 126). As Mr. Pritchard stated, these transmissions are for less than a second. (Tr. 66-67).

The FCC has set human exposure limits to EMFs. (Tr. 111). Dr. Davis explained that when people began to use wireless devices, the Food and Drug Administration looked at

whether high levels of exposure to the EMFs emitted by these devices were harmful. They found that while they did not harm the animals, at a certain exposure level, animals could detect feeling warm. (Tr. 131). The agencies then set the maximum human exposure to 50 times lower than that where they found effects on animals. (Tr. 131-132).

Dr. Davis stated that the EMF exposure from a Flexnet ACLARA meter is 5.8 million times smaller than the FCC maximum for human exposure. (Tr. 115; PECO Exhibit CD 5). The peak exposure, the moment when the meter is actually transmitting information, is 37.5 times smaller than the FCC maximum permissible exposure. (Tr. 116). He also noted that EMF emissions from PECO's AMI meters are also millions of times smaller than the human exposure limits set by the International Commission on Ionizing Radiation. (Tr. 116-117).

Dr. Davis also calculated and noted that the Complainant's exposure at her home from EMFs from TV transmitters is 3000 times higher than any exposure she would receive from an ACLARA smart meter. (Tr. 119). He also pointed out that, unlike the few daily, very short transmissions of PECO AMI meters, TV Transmission towers are broadcasting continuously for 24 hours a day. (Tr. 124).

In her research, Ms. Caesar came upon articles suggesting a link to EMFs and brain cancer. (Tr. 134). Dr. Davis credibly refuted this, stating that the vast majority of scientists do not accept that finding, and that if you consider worldwide incidents of brain cancer, it has not increased despite increasing widespread use of cell phones. (Tr. 135).

Noting that "we live in a wireless world," Dr, Davis calculated that it would take 2000 years sitting next to an ACLARA meter for the Complainant to have the same exposure as she does from her yearly Wi-Fi usage. (Tr. 118-119). He also testified that she is exposed to EMFs now from her AMR meter and that replacing the AMR meter with an AMI meter would reduce her EMF exposure by 79 percent. (Tr. 122). The Complainant's meter is now outdoors but was indoors for four years. (Tr. 128-129). There was no evidence the Complainant suffered ill health due to a meter that has higher EMF emissions than the meter PECO seeks to install at the service address.

Also called to testify for PECO was Dr. Mark Israel, M.D. He was recognized as an expert in medicine, medical research for radiofrequency, electromagnetic fields and health. (Tr. 136). Dr. Israel testified that most mainstream medical bodies maintain that there is not sufficient evidence to support a theory that electromagnetic fields cause the symptoms of people who claim to suffer from electromagnetic sensitivity. The symptoms are unrelated to the presence of electromagnetic fields. (Tr. 138). Controlled scientific studies have also confirmed that the symptoms are not caused by electromagnetic fields. (Tr. 139-140). Dr. Israel further testified that overall, public health authorities, both in the USA and internationally, also have concluded that studies do not show EMFs cause, contribute to or exacerbate any of the claimed sensitivity symptoms. (Tr. 142).

He also stated that studies do not provide a basis for making a conclusion that radiofrequency fields alter heart rate variability. (Tr. 144). Additionally, he questioned the reliability of single studies suggesting such a link that were not reproduced and did not follow scientific protocol. (Tr. 145-147).

Dr. Israel also testified that contrary to the understanding of the Complainant, WHO has not classified smart meter EMF emissions as class 2B carcinogens. (Tr. 147). He also noted that the categorization of EMFs from cell phones as a 'possible' carcinogen by the International Agency for Research on Cancer or any organization was not a cause for concern because it meant that there was not enough evidence to and "it couldn't actually qualify it as even a probable carcinogen." (Tr. 148-150). He concluded that there was no scientific basis on which to conclude that radiofrequency fields from PECO AMR or AMI meters could cause, contribute to or exacerbate any of the symptoms claimed as electromagnetic sensitivity. Dr. Israel was credible, and his testimony carried more weight than the physician letter introduced by the Complainant. (Complainant 1).

The evidence did not establish a *prima facie* case that installation of a PECO AMI meter at the Complainant's residence would be harmful to her health. The Complainant cannot prevail here.

Privacy And Surveillance

Ms. Caesar is concerned about an invasion of privacy and surveillance. It is her understanding that smart meters gather data about usage in the home and she is concerned about what information people have about her. She believes that data collected is a violation of her rights. She does not want PECO to survey her usage of electricity. (Tr. 15-16). Based on her research, it is her understanding that the smart meters can identify individual electrical devices and determine when they are on or off. (Tr. 32).

Mr. Pritchard testified that PECO meters only measure the amount of energy used and that information is transmitted to PECO (Tr. 75). This information is used for billing purposes. (Tr. 76). To ensure that the transmission is secure, PECO uses 250 encryption methods. (Tr. 76). PECO can also use the information for outage management so if power is lost or restored, the meter can relay that message to PECO. (Id.). Only PECO employees who require the information can access it and PECO does not provide such information to third parties unless authorized by the customer. (Tr. 76-77). PECO meters cannot determine which appliances are used or whether a home is occupied or not. (Tr. 78). The meters also cannot collect any information regarding the activities of the customers. (Id.).

The Complainant cannot prevail on this claim because there was no evidence of record that the AMI meter that PECO is seeking to install at the service address, or any meter utilized by PECO, would violate the Complainant's privacy or function as a surveillance device.

Fires

The Complainant also testified that she is concerned about the fire safety of the smart meters. It was her understanding that there have been fires related to smart meters. (Tr. 24-25).

Mr. Pritchard testified that a type of meter previously used by PECO had some problems but those meters, about 200,000, were removed and are no longer used by PECO.

(Tr. 94). Since replacement of those meters, there have been no incidents of fire attributable to PECO meters. (Tr. 95).

PECO requires that meters meet ANSI, American National Standards Institute, standards for safety. (Tr. 72). These standards include the construction of the meter, how it collects data and the energy used. (Id.). The meters used by PECO also meet Underwriter Laboratory or UL testing certification standards for smart meters. (Tr. 73-74).

As added protection, PECO has what is called a hot-socket detector in its meters, which detects heating in the customer's equipment, the meter socket, or the wiring in the premises. (Tr. 95). The AMR meter at the Complainant's home does not have this safety feature. (Tr. 101).

The evidence does not support a finding that there is a fire danger associated with the PECO meters the company is seeking to install at the service address. The evidence suggests that the meter PECO has proposed installing, the ACLARA, would actually provide more fire safety than the meter currently installed. The Complainant does not prevail on this issue.

CONCLUSIONS OF LAW

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

2. Due process is satisfied when administrative agencies, like the Public Utility Commission, provide notice and the opportunity to appear and be heard to the parties appearing before them. *Schneider v. Pa. Pub. Util. Comm'n.,* 479 A.2d 10 (Pa.Cmwlth. 1984).

3. 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).

4. 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).

5. Utility companies are required to furnish and maintain adequate, efficient, safe, and reasonable service and facilities. *Paul v. PECO Energy Company*, Docket No. C-2015-2475355 (Order and Opinion entered June 14, 2018); 52 Pa. Code § 57.194.

6. There is insufficient evidence to support a finding that Complainant will be adversely affected by the smart meter or that PECO's use of a smart meter will constitute unsafe or unreasonable service in violation of 66 Pa.C.S. § 1501. *Kreider v. PECO Energy Co.*, Docket No. P-2015-2495064 at 23 (Order entered Jan. 28, 2016) (*See also Woodbourne-Heaton*, 1992 Pa. PUC Lexis 160, at *12-13).

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).

ORDER

THEREFORE,

IT IS ORDERED:

1. That the claims of the Complainant in *Patti Lynn Caesar v. PECO Energy Company* at Docket Number C-2017-2605462 are denied and dismissed.

2. That the Docket at C-2017-2605462 be marked closed.

Date: January 11, 2019

/s/
Darlene Davis Heep
Administrative Law Judge