

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Laura Sunstein Murphy	:	
	:	
v.	:	C-2015-2475726
	:	
PECO Energy Company	:	

**INITIAL DECISION**  
**(NON-PROPRIETARY)**

Before  
Darlene D. Heep  
Administrative Law Judge

**INTRODUCTION**

Laura Sunstein Murphy filed a Complaint with the Commission seeking to prevent PECO Energy Company (PECO) from installing an AMI<sup>1</sup> meter, or "smart meter," at the service address, her residence. In the Complaint, she alleged that PECO threatened to shut off her service, that a shut off would be detrimental to her fragile health and that electricity was the only means of pumping water to her home and farm. She also alleged that an AMI meter will adversely affect her because she has several medical conditions that make her susceptible to radio frequency radiation and electromagnetic fields ("EFs")<sup>2</sup> and therefore installing the meter is not safe or reasonable and would be in violation of 66 Pa.C.S. §1501 and 52 Pa. Code § 57.194.

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<sup>1</sup> AMI is an acronym for "advanced metering infrastructure."

<sup>2</sup> Testimony during the hearing interchangeably used the terms electromagnetic fields, emissions, radio frequency fields and electromagnetic frequency to refer to the emissions of concern to the Complainant. They will be referred to herein as EFs.

This decision finds that Complainant did not meet her burden of proving that the installation of a smart meter would adversely affect her health or would be a violation of 66 Pa.C.S. §1501 and 52 Pa. Code § 57.194. Complainant's request to utilize an analog meter is denied and the Complaint is dismissed.

### HISTORY OF THE PROCEEDING

On April 7, 2015, Laura Sunstein Murphy, Ph. D., Esquire (Complainant), filed a Formal Complaint against PECO. She alleged that PECO was threatening to shut off her service because she refused to have a smart meter installed. As requested relief, Ms. Murphy stated that she wanted PECO to stop threatening to shut off her electric service because she and her husband had medical conditions that would be seriously jeopardized if the service was shut off. Ms. Murphy also averred in her Complaint that she and her husband lived in a rural area and were dependent upon electricity to pump water to their home. She also stated that they paid their bills on time and had been a customer of PECO for over 30 years.

Attached to her Complaint was a March 27, 2015, letter written by a Dr. Peter J. Prociuk, M.D., which stated that it was an unequivocal medical necessity for electric service to the Complainant's home to be maintained without interruption. Dr. Prociuk further stated that the owners were elderly and in fragile health, that their water comes from a well that is dependent on electricity and that unnecessary or prolonged interruption in electric service would seriously jeopardize their health.

Additionally, Ms. Murphy stated that she had refused PECO access to install a smart meter at her home because PECO had not proven that smart meters will be safe for medically fragile individuals or that they do not cause house fires.

PECO filed an Answer and New Matter on March 23, 2015. The Answer denied all material allegations and stated that the Company was seeking to comply with the Act 129 directive to install AMI, or smart meters, and that PECO had the right to terminate service when

access to its equipment is denied. The New Matter averred that Act 129 did not allow a customer to opt out of smart meter installation.

Complainant filed a Reply to the Answer on May 8, 2015.

On June 11, 2015, a Hearing Notice set the matter for hearing on August 19, 2015, by telephone before Administrative Law Judge Jeffrey Watson.

ALJ Watson issued a Prehearing Order on June 11, 2015.

On June 2, 2015, PECO filed a Motion for Judgment on the Pleadings.

On July 2, 2015, Complainant filed a Motion for change of venue to an in person hearing in Philadelphia.

Edward G. Lanza, Esq. filed an Entry of Appearance on behalf of Ms. Murphy on July 28, 2015.

An Amended Complaint was filed on July 28, 2015. In the Amended Complaint, Ms. Murphy alleged that she had received a ten-day shut off notice from PECO on or about March 26, 2015, threatening to shut off her service on April 3, 2015, because she had denied PECO access to the Company's equipment. She also stated that she and her husband are elderly and require uninterrupted electric service. She further averred that her various ailments make her susceptible to EFs. She alleged that smart meters emit EFs and requested that PECO not install a smart meter at her residence. She further stated that installation of a smart meter at her home would create an unsafe and unhealthy condition at her home in violation of 66 Pa.C.S. § 1501 and 52 Pa. Code § 57.194.<sup>3</sup>

An Answer to the Amended Complaint was filed on July 28, 2015.

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<sup>3</sup> The allegation that smart meters cause fires was not pursued and is not addressed herein.

The matter was transferred to Administrative Law Judges Darlene Heep and Christopher Pell on or about February 1, 2016.

A telephonic prehearing conference was held on March 15, 2016, to set deadlines and discuss procedural matters.

On March 15, 2016, a Hearing Notice set the matter for hearing on June 14-15, 2016.

On April 14, 2016, PECO filed a Motion for Partial Judgment on the Pleadings. A May 20, 2016, Order denied the Motion and determined that evidentiary hearings would be held to address whether installation of a smart meter at the complainant's residence, in light of her health concerns, constitutes unsafe and unreasonable service in violation of 66 Pa.C.S. § 1501.

A Second Amended Complaint was filed on June 6, 2016. The Second Amended Complaint contained the allegations of the First Amended Complaint but added that the Complainant is dependent on electricity to supply water to her home and her farm as well as to provide water for her horses. She also additionally averred that after attending a hearing in another smart meter matter, she learned that the AMR<sup>4</sup> meter then installed at her home emitted EFs. In this Second Amended Complaint, she contends that her health has degenerated since installation of the AMR meter and that installation of the AMR meter was a violation of Section 1501 of the Public Utility Code and Section 57.194 of the Commission's regulations. She further contended that she was "compelled" to have the PECO AMR meter removed and replaced with an analog meter. Complainant also averred that she is "willing to be billed on an estimated basis; and she is willing to call in monthly meter readings to PECO; and she is willing to submit them via email or internet connection, or use any other reasonable method suggested by PECO, with onsite visits only once per year by PECO representatives to read any analog meter which may be installed on her residence."

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<sup>4</sup> AMR is an acronym for "automatic meter reading."

On June 7-8, 2016, hearings were held in *Povacz v. PECO Energy Company*, Docket No. C-2015-2475023.

On June 9, 2016, the Complainant filed a Motion for Continuance, stating that after attending part of the evidentiary hearings in the *Povacz* matter on June 7-8, 2016, she became "severely ill due to exposure to fluorescent lights and EFs in the hearing room."

On June 16, 2016, Stephen G. Harvey, Esq. filed an entry of Appearance as co-counsel for the Complainant.

On July 1, 2016, PECO filed an Answer to the Second Amended Complaint, denying all material allegations. PECO also stated that the Complainant violated the PECO tariff by removing the PECO AMR meter and replacing it with an analog meter.

On August 16, 2016, PECO filed with the Commission a Joint Motion for An Omnibus Schedule Revision in the following proceedings:

*Povacz v. PECO Energy Company*, Docket No. C-2015-2475023  
*Randall and Albrecht v. PECO Energy Company*, Docket No. C-2016-2537666  
*Van Schoyk v. PECO Energy Company*, Docket No. C-2015-2478239  
*Murphy v. PECO Energy Company*, Docket No. C-2015-2475726

All Complainants engaged the same counsel and shared experts. PECO intended to present the same experts in each matter. The Complainants and PECO proposed that an omnibus hearing and schedule would save substantial time and resources (as many as nine hearing days) for the Commission and the parties. The Motion for Omnibus Schedule was granted, and a revised Pre-hearing Order was issued on August 26, 2017.

On August 25, 2016, Complainants Murphy and Povacz each filed a Motion for Reasonable Accommodation of Disability under the Americans with Disabilities Act (ADA). The parties sought to move the hearing to Harrisburg due to their concerns about exposure to electromagnetic fields in the courtroom in Philadelphia. On September 9, 2016, the Motion was

denied in part and granted in part and an Order issued allowing the Complainants Murphy and Povacz to participate by telephone or videoconference.

Further Omnibus Hearings were held on September 14-16, 2016.

To accommodate the averred health issues of Complainant Murphy, further Omnibus hearings involving Ms. Murphy were delayed and held December 5-8, 2016, and January 25, 2017.

The final Omnibus transcript was received on February 14, 2017.

In March of 2017, the Commission was notified that the Van Schoycks had completely removed their home from PECO service and the power grid and installed solar power and a generator. Their Petition to Withdraw from the proceedings was granted on March 13, 2017.

On February 22, 2017, a Briefing Order was issued instructing the parties to file and serve main briefs on April 21, 2017 and reply briefs on May 19, 2017.

On March 24, 2017, a Judge Change Order was issued assigning this matter solely to Administrative Law Judge Darlene Heep.

The parties requested an extension of time to file briefs and an Order requiring reply briefs by June 19, 2017, was issued on March 28, 2017.

Due to unforeseen circumstances and medical reasons, the Complainants requested further extensions of time. PECO did not object to the extensions. The final Reply Briefs were filed on November 13, 2017.

The record closed on November 13, 2017, upon receipt of the final Reply Brief. The matter is ready for a decision.

During the hearing, counsel for the Omnibus Complainants requested that all medical information and testimony be marked and kept confidential. PECO did not object, agreed to maintain the confidentiality of such information and the request was granted. Accordingly, Proprietary and Non-Proprietary Initial Decisions will be issued in each matter. . A Protective Order regarding medical information of the Complainant was issued.

### FINDINGS OF FACT

1. The Complainant in this case is Laura Sunstein Murphy
2. The Respondent in this case is PECO Energy Company.
3. Laura Sunstein Murphy resides and is a PECO customer at 1191 Telegraph Road, West Chester, PA 19380. (service address). *Direct Testimony of Laura Sunstein Murphy* at 3:14; (JA003951).<sup>5</sup>
4. In May 2002, PECO installed an AMR meter at Ms. Murphy's home. *Id.* at 4:6-7; (JA003952).
5. On May 12, 2014, PECO sent a letter to Ms. Murphy stating that the Company planned to install an AMI smart meter on her property to replace the AMR meter. *Rebuttal Testimony of Brenda Eison* at 6:18-19; (JA003954).
6. A technician arrived at Ms. Murphy's home on June 6, 2014 to install an AMI smart meter. *Id.* at 6:21-23; (JA003954).
7. Ms. Murphy denied the technician access to the meter. *Id.*; (JA003954).

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<sup>5</sup> The JA numbers are references to briefing outlines, testimony and exhibits contained in a Joint Appendix for the Omnibus cases agreed to by the parties and filed in *Murphy v. PECO Energy Company*, Docket No. C-2015-2475726

8. In March 2015, Ms. Murphy received a notice from PECO informing her that her electricity would be turned off in ten days due to her refusal to permit the installation of a smart meter. *Direct Testimony of Laura Sunstein Murphy* at 42:16-18; (JA003990).

9. On March 27, 2015, Ms. Murphy called PECO, and informed PECO that due to medical reasons, she could not have the smart meter installed on her property. *Rebuttal Testimony of Brenda Eison*, at 8:1-4; (JA004191).

10. That same day, one of Ms. Murphy's doctors, Dr. Peter J. Prociuk, called PECO and explained that Ms. Murphy's electricity could not be shut off as it would be detrimental to her health and later sent medical documentation to PECO. *Rebuttal Testimony of Brenda Eison* at 7:20-21; (JA004190); *Id.* at 8:13-20; (JA004191).

11. In response to the medical documentation supplied by Dr. Prociuk, PECO placed a thirty day hold on Ms. Murphy's account, staying termination and smart meter installation at the Murphy residence. *Id.* at 8:21-22; (JA004191).

12. Ms. Murphy filed a complaint with the Commission on April 8, 2015 seeking to enjoin the installation of the smart meter. *Id.* at 9:3-4; (JA004192).

13. Ms. Murphy has taken steps to eliminate almost all sources of EFs on her property. *Id.* at 48:5-20; (JA003996).

14. Ms. Murphy gave away her iPad and replaced it with a hardwired tablet. *Id.*; (JA003996).

15. Ms. Murphy and her husband use hard wired computers and printers and eliminated their Wi-Fi router. *Id.*; (JA003996).

16. Ms. Murphy owns a cell phone and keeps it in airplane mode while at home, and only uses it in the case of an emergency when she is away from home. *Id.*; (JA003996).

17. Ms. Murphy has taken the following additional measures to limit her exposure to EFs: she does not use fluorescent lights in her home; she ceased use of all wireless devices, such as cordless phones; she installed special drapes made with electromagnetic energy shielding fabric on her windows; she had two outside walls of her home painted with electromagnetic energy shielding paint; she asks visitors to her home to turn off their cell phones; she wears electromagnetic energy shielding clothing such as a vest, cap, scarf, and amber glasses when she ventures out of her home; she requests that fluorescent lights, cell phones, and other sources of electromagnetic energy be turned off when she is at her physician's office.

18. Ms. Murphy also purchased a German manufactured EF monitor to analyze EF levels in her house. *Direct Testimony of Laura Sunstein Murphy*, at 48:21-49:21; (JA003996-JA003997).

19. Ms. Murphy sleeps in her guest bedroom because she believes that it has the lowest level of EFs in her home. *Id.*; (JA003996-JA003997).

20. Ms. Murphy [**Begin Confidential**]

**[End Confidential].**

21. [**Begin Confidential**]

**[End Confidential].**

22. [**Begin Confidential**]

**[End Confidential].**

23. Ms. Murphy's **[Begin Confidential]** **[End Confidential]** were present before 2002. *Id.* at 5:5-6, 10; (JA004058, JA004063).

24. In 2002, Ms. Murphy was first **[Begin Confidential]**  
**[End Confidential]**.

25. In 2005, Ms. Murphy was diagnosed **[Begin Confidential]**  
**[End Confidential]**.

26. Beginning in 2007, Ms. Murphy began to suffer **[Begin Confidential]**  
**[End Confidential]**.

27. In the fall of 2012, Ms. Murphy was diagnosed **[Begin Confidential]**  
**[End Confidential]**.

28. Ms. Murphy underwent various surgeries required by her health condition in 2010, 2013, 2014, 2015 and 2016. *Id.* at 31:12-15; (JA003979); *Id.* at 34:9; (JA003982); *Id.* at 34:17-18; (JA003982); *Direct Testimony of Dr. Peter J. Prociuk*, 14:2-16:3; (JA004067-004069); *Direct Testimony of Laura Sunstein Murphy*, at 46:14-17; (JA003994; 26:18-22; (JA003974).

29. After attending a Commission hearing involving PECO smart meters in March of 2016, the Complainant had her AMR meter removed and replaced with an analog meter. *Surrebuttal Testimony of Laura Sunstein Murphy*, at 22:5-6; (JA004368).

30. The AMR meter was reinstalled on May 9, 2016. *Testimony of Glenn Pritchard* at 1003 (JA001262).

31. The AMR meter was removed by the Complainant approximately an hour after it was reinstalled. *Id.*

32. Glenn Pritchard is an expert in design, operation, and technology of advanced grid installations. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 3:14-16; (JA004257); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 3:14-16; (JA002810).

33. The system that utilized the AMR meters utilized radio frequency communications to transmit meter information from each customer's meter to a network of "cell masters." *Murphy Rebuttal Testimony of Glenn Pritchard*, at 4:8-16; (JA004258); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 4:13-22; (JA002811).

34. The information was then sent to PECO from the "cell masters" over a fiber optic system and phone lines. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 4:8-16; (JA004258); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 4:13-22; (JA002811).

35. The AMR meters send information via radio frequency transmissions from the meter assembly to the utility once every five minutes for a 20-millisecond duration. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 4:18-21; (JA004258); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 5:1-2; (JA002812).

36. This transmission utilizes a maximum of one watt of power. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 4:18-21; (JA004258); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 5:2-3; (JA002812).

37. The new AMI smart meter system also utilizes radio frequency communication. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 5:6-14; (JA004259); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 5:11-19; (JA002812).

38. With the AMI smart meter system, the wireless communications from the smart meters are received by technology known as "tower gateway base stations." *Murphy Rebuttal Testimony of Glenn Pritchard*, at 5:6-14; (JA004259); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 5:11-19; (JA002812).

39. The “tower gateway base stations” then transfer the information to PECO via a fiber optic network or over phone lines. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 5:6-14; (JA004259); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 5:11-19; (JA002812).

40. The AMI meters also include a second transmitter called a “ZigBee Radio.” *Murphy Rebuttal Testimony of Glenn Pritchard*, at 5:15-17; (JA004259); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 5:20-22; (JA002812).

41. The ZigBee radio utilizes radio frequency transmissions to communicate with devices within the home. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 5:15-17; (JA004259); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 5:20-22; (JA002812).

42. The new smart meters utilize two-way wireless EF transmissions, allowing communication from the smart meter to the tower gateway base stations, and from the tower gateway base stations to the smart meter. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 5:19-20; (JA004259); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 6:1-2; (JA002813).

43. PECO’s smart meters communicate on reserved, private frequency bands, allowing the meters to communicate with PECO without using a “mesh” system. *Murphy Rebuttal Testimony of Glenn Pritchard*, at 6:11-7:6; (JA004260); *see also Povacz Rebuttal Testimony of Glenn Pritchard*, at 6:16-7:11; (JA002813).

44. PECO did not perform any tests on humans to evaluate the safety of smart meters. *Cross Examination of Glenn Pritchard, December 6, 2016 Hearing*, at 1031:25-1032:20; (JA001290-001291).

45. PECO ensured that smart meters were compliant with the FCC's EF maximum exposure limits. *Cross Examination of Glenn Pritchard, December 6, 2016 Hearing*, at 1031:25-1032:20; (JA001290-001291).

46. The customer decides where to put the meter socket, as long as that location meets the guidelines established in PECO's Electric Service Tariff. *Rebuttal Testimony of Glenn Pritchard* at 115-16, PECO Exh. GP-3.

47. PECO would install an AMI meter in a relocated meter socket if the Complainant chose to relocate her meter socket. *Murphy Rebuttal Testimony of Glenn Pritchard* at 10; *Povacz Rebuttal Testimony of Glenn Pritchard* at 16; PECO Exh. GP-3.

48. Dr. Andrew Marino, Ph.D., whose Ph.D. is in biophysics, was presented as a witness by the Complainants. Dr. Marino was a professor at the Louisiana State University Medical School for approximately 33 years. At the time of the hearing, he was retired from the medical school and worked developing software intended to diagnose neurological and neuropsychiatric diseases. *Testimony of Dr. Andrew Marino* at 554 - 576 (JA00554 - JA00576).

49. Dr. Marino was recognized as an expert witness in physics and biophysics as they relate to the biological effects and risks of man-made electromagnetic energy from Smart Meters. *Testimony of Dr. Andrew Marino* at 576 (JA00576).

50. Dr. Christopher Davis was presented as a witness by PECO. Dr. Davis is a professor of electrical and computer engineering at the University of Maryland in College Park who studies, researches, teaches, and serves on national and international panels related to physics, biophysics, electrical engineering, electromagnetics, radiofrequency exposure and dosimetry. *Murphy Rebuttal Testimony of Christopher Davis* at 1-7; *Povacz Rebuttal Testimony of Christopher Davis* at 1-7.

51. Dr. Davis was recognized as an expert witness in physics, biophysics, electrical engineering, electromagnetics, radiofrequency exposure and dosimetry. *Hearing Testimony of Dr. Christopher Davis* at 1078 (JA001337).

52. The Federal Communications Commission (FCC) has promulgated limits for the maximum permissible exposure to radiofrequency fields emitted by a Smart Meter as 0.6

mW/cm<sup>2</sup>, calculated as an average exposure over time. *Murphy Rebuttal Testimony of Christopher Davis* at 13; *Povacz Rebuttal Testimony of Christopher Davis* at 13-14.

53. The average exposure from PECO's electric AMI meters is millions of times less than the FCC maximum permissible exposure levels. *Murphy Rebuttal Testimony of Christopher Davis* at 15-16; *Povacz Rebuttal Testimony of Christopher Davis* at 16; PECO Exh. CD-2.

54. The peak exposure from PECO's electric AMI meters is approximately 40 times smaller than the FCC limit for 30-minute average exposure. *Murphy Rebuttal Testimony of Christopher Davis* at 16; *Povacz Rebuttal Testimony of Christopher Davis* at 17. PECO Exh. CD-3.

55. The exposure from PECO's electric AMI meters is also millions of times less than the guidelines published by the International Commission on Non-Ionizing Radiation Protection. *Murphy Rebuttal Testimony of Christopher Davis* at 16-17; *Povacz Rebuttal Testimony of Christopher Davis* at 17; PECO Exh. CD-4.

56. In everyday life, people are exposed to radiofrequency field levels from many sources that are much higher than the radiofrequency fields associated with PECO's AMR or AMI meters. *Murphy Rebuttal Testimony of Christopher Davis* at 17; *Povacz Rebuttal Testimony of Christopher Davis* at 17-18; PECO Exh. CD-5.

57. The background exposure from UHF broadcasting is hundreds of times higher than the exposure from PECO's AMI meters. *Murphy Rebuttal Testimony of Christopher Davis* at 17; *Povacz Rebuttal Testimony of Christopher Davis* at 18. PECO Exh. CD-6.

58. Given the reported cell phone use of the Complainant, her exposure to radiofrequency fields from cell phones is thousands of times greater than from AMI meters. *Murphy Rebuttal Testimony of Christopher Davis* at 18.

59. The electric AMI meter will emit 83% less radiofrequency fields than the existing electric AMR meter at Ms. Murphy's residence. *Murphy Rebuttal Testimony of Christopher Davis* at 18; *Povacz Rebuttal Testimony of Christopher Davis* at 18-19; PECO Exh. CD-8.

60. PECO's AMI meters do not produce "pulsed" fields. *Murphy Rebuttal Testimony of Christopher Davis* at 21-22; *Povacz Rebuttal Testimony of Christopher Davis* at 21-23.

61. Dr. Mark Israel attended the Albert Einstein College of Medicine, had an internship and residency at Harvard Medical School, has worked at the National Institutes of Health and has been a professor of medicine and medical research at numerous medical schools. He has studied radiofrequency fields and health effects. *Murphy Rebuttal Testimony of Mark Israel* at 3-5; *Povacz Rebuttal Testimony of Mark Israel* at 3-5.

62. Dr. Israel began to examine the research on electromagnetic fields, including radiofrequency fields and health effects during his tenure at the National Cancer Institute more than 25 years ago. He has continued to follow the research literature on this subject since that time. *Murphy Rebuttal Testimony of Mark Israel* at 5-6; *Povacz Rebuttal Testimony of Mark Israel* at 5-6.

63. Dr. Israel conducted an evaluation of whether exposure to radiofrequency fields from PECO's AMI meters can cause, contribute to or exacerbate the conditions described by the Complainant. *Murphy Rebuttal Testimony of Mark Israel* at 7; *Povacz Rebuttal Testimony of Mark Israel* at 6-7.

64. In that evaluation, Dr. Israel used the same methodology that he uses in the usual course of his medical work, which included searching medical and scientific databases, analyzing studies identified through that research, evaluating as a whole all of the studies that he determined were relevant to the claimed symptoms, including both studies that showed an effect and studies that did not show an effect. *Id.*

65. Dr. Israel also reviewed the findings of public health agencies and organizations to see if they provided any insights he missed and to see if their conclusions were inconsistent with his initial determinations. *Id.*

66. Dr. Israel conducted the above-described evaluation for each of the symptoms or conditions identified by the Complainant and concluded, for each such symptom, that there is no reliable medical basis to conclude that radiofrequency fields from PECO's electric AMI meters caused, contributed to, or exacerbated, or will cause, contribute to, or exacerbate, any of the symptoms identified by the Complainant. *Murphy Rebuttal Testimony of Mark Israel* at 11-31; *Povacz Rebuttal Testimony of Mark Israel* at 11-26; *December 8, 2016 Povacz Transcript* at 1470-1516.

67. Dr. Israel's overall medical opinion is that exposure to electromagnetic fields from PECO's smart meters has not been and will not be harmful to Complainant's health and he holds both his symptom-specific and overall medical opinions to a reasonable degree of medical certainty. *Murphy Rebuttal Testimony of Mark Israel* at 31-32; *Povacz Rebuttal Testimony of Mark Israel* at 26.

## DISCUSSION

Laura Sunstein Murphy contends that: 1) forcing her to be exposed to EFs from PECO meters is a violation of due process; 2) her health degenerated after installation of the AMR meter and therefore its installation was a violation of 66 Pa.C.S. § 1501 and 52 Pa. Code § 57.194; and 3) as to her, the installation of an AMI smart meter at her home will have an adverse health effect and is neither "safe" nor "reasonable" under 66 Pa.C.S. § 1501 and 52 Pa. Code § 57.194. Ms. Murphy is seeking an Order from the Commission that would compel PECO to cease attempting to install a smart meter on her property, provide an accommodation for her based on her medical history and allow her to utilize an analog meter.

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 Pennsylvania Code Provides:

§ 57.194. Distribution system reliability.

(a) An EDC (“electric distribution company”) shall furnish and maintain adequate, efficient, safe and reasonable service and facilities, and shall make repairs, changes, alterations, substitutions, extensions and improvements in or to the service and facilities necessary or proper for the accommodation, convenience and safety of its patrons, employees and the public.

52 Pa. Code § 57.194.

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.

The party seeking relief from the Commission has the burden of proof. Section 332(a) of the Public Utility Code, 66 Pa.C.S. § 332(a). The Complainant seeks relief from the Commission, and, therefore, has the burden of proving that PECO violated 66 Pa.C.S. § 1501 and 52 Pa. Code § 57.194 and due process.

“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.

The parties offered differing views regarding the standard of proof applicable to this issue. The Complainant contends:

PECO proceeds from the absolutely incorrect premise that in order to prevail in these proceedings, the Complainants must prove medical causation, *i.e.*, that PECO’s AMR or AMI smart meter caused health conditions for them or will interfere with their health. To be sure, as the Commission recognized in the *Kreider* case, Complainants bear the burden of proving “by a preponderance of the evidence, that PECO is responsible or accountable for the problem described in the complaint,” and this includes proof “that the complainant was adversely affected by the smart meter” and that PECO’s use of a smart meter “will constitute unsafe or unreasonable services in violation of Section 1501 under the circumstances in this case.” *Susan Kreider v. PECO Energy Company*, No. P-2015-2495064, Opinion and Order (September 3, 2015) (JA007462-7481).

See Murphy Main Brief, p. 75.

PECO contends that *Letter of Notification of Philadelphia Electric Company Relative to the Reconstructing and Rebuilding of the Existing 138 kV Line to Operate as the Woodbourne-Heaton 230 kV Line in Montgomery and Bucks Counties*, 1992 Pa. PUC Lexis 160, controls, arguing as follows:

*Woodbourne-Heaton* thus provides a dispositive framework for the burden and standard of proof in the instant proceeding: If the Complainants prove that there is a body of conflicting and inconclusive science, or that the science is “undecided,” then the Complainants have failed to meet their burden of proof, and cannot prevail. And that is what the Complainants claim to have demonstrated. Moving on from the implications of *Woodbourne-Heaton*, the *Kreider Order* provides a separate, independent basis for concluding that, in order to prevail, the Complainants must prove that PECO’s AMI meters will cause, contribute to, or exacerbate their adverse health conditions. The *Kreider Order* states (emphasis added) that the Complainants “will have the burden of proof during the proceeding to demonstrate, by a preponderance of the evidence, that PECO is responsible or accountable *for the problem described in the Complaint*” – and each of these Complainants alleged in their respective Complaint that PECO’s AMI would cause, contribute to, or exacerbate their specific health conditions.

PECO Main Brief at 17-18.

The burden of the Complainant is clear. As the Commission held, in smart meter matters, “[t]he ALJ’s role in the proceedings will be to determine based on the record in this particular case, whether there is sufficient evidence to support a finding that the Complainant was adversely affected by the smart meter or whether PECO’s use of a smart meter will constitute unsafe or unreasonable service in violation of Section 1501 under the circumstances in this case.” *Kreider v. PECO Energy Company*, Docket No. P-2015-2495064 (Opinion and Order, January 28, 2016) at 23. While the Commission also stated that a complainant “may” be required to present evidence in the form of medical documentation and/or expert testimony, such evidence is not the sole means. As the Commonwealth Court has recognized, a customer may establish a *prima facie* case with circumstantial evidence. See *Milkie v. Pa. Pub. Util. Comm’n*, 768 A.2d 1217 (Pa. Cmwlth. 2001).

Under 66 Pa.C.S. § 1501 and 52 Pa. Code § 57.194, PECO must provide adequate, efficient, safe and reasonable service and facilities. The Complainant contends that

installing AMR and AMI meters is unsafe and unreasonable. As the Commonwealth Court held in *Romeo v. Pa. PUC*, 154 A.3d 422, 430 (2017), a Complainant can make out his or her claim through the testimony of others as well as other evidence that goes to the issue of safety and reasonableness. To prevail, the Complainant must prove this by a preponderance of the evidence.

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).

#### Due Process

Complainant asserts that a government actor does not have the authority to expose a person to electromagnetic energy against her wishes and against the recommendation of her physician and to do so would violate the due process clause of the 14<sup>th</sup> Amendment of the Federal Constitution as well as the due process protections in Article 1, Section 11 of the Pennsylvania State Constitution. She contends that installation of a smart meter will force exposure to EFs on the Complainant’s residential property, which violates due process. There is no support for a finding that the Complainant was not provided due process here.

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.<sup>6</sup> The Commission approved the smart meter installation plan developed by PECO.<sup>7</sup> Under that plan, PECO is replacing AMR meters with AMI or “smart meters.”

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 Maria Povacz v. PECO Energy Company*, Docket No. C-2012-2317176 (Order and Opinion entered January 24, 2013).

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<sup>6</sup> *See Smart Meter Procurement and Installation*, Docket No. M-2009-2092655 (Implementation Order entered June 24, 2009) (*Smart Meter Procurement and Installation Order*).

<sup>7</sup> *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).

By seeking to install a smart meter at the service address, including sending a shut off notice for failure to allow access to the meter (*Direct Testimony of Laura Sunstein Murphy* at 42:16-18; (JA003990)), PECO was and is attempting to comply with Act 129, the orders of the Commission and PECO's tariff. 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.Cmwlt. 1997); and *Stiteler v. Bell Telephone Co. of Pennsylvania*, 379 A.2d 339 (Pa.Cmwlt. 1977).

PECO Tariff Electric Section 6.4 provides that the Company owns and maintains the meters. Section 14.5 provides that 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 Commission-approved tariff provides that the Company shall keep in repair and maintain its own property installed on the premises of the customer. Section 10.5 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.

Section 18.3 provides that the Company may terminate on reasonable notice if entry to the meter is refused, or if access to the meter is obstructed or hazardous. Specifically, PECO's tariff provides:

The Company may terminate on reasonable notice if entry to the meter or meters is refused or if access thereto is obstructed or hazardous; or if utility service is taken without the knowledge or approval of the Company; or for other violation of these Rules and Regulations and/or applicable Commission rules, including those found at Pennsylvania Public Utility Code or the Commission's regulations.

By refusing to allow PECO access to its meter and by removing the PECO AMR meter and replacing it with an analog meter, the Complainant acted contrary to the PECO tariff and PECO began the process to terminate the Complainant's service in accordance with its tariff.

"The due process requirements of the Pennsylvania Constitution are indistinguishable from the 14<sup>th</sup> Amendment to the Federal Constitution, and therefore, the same analysis applies to both provisions." *Caba v. Weaknecht*, 64 A.3d 39 (2013), citing *Turk v. Dep't of Transp.*, 983 A.2d 805, 818 (Pa. Cmwlth. 2009). The U.S. Constitution requires that administrative agencies, like the Public Utility Commission, are required to provide due process to the parties appearing before them. This requirement is satisfied when the parties are afforded notice and the opportunity to appear and be heard. *Schneider v. Pa. Pub. Util. Comm'n.*, 479 A.2d 10 (Pa.Cmwlth. 1984).

The Commission has specifically recognized the right of customers to be heard regarding smart meters. In *Kreider v. PECO Energy Company*, Docket No. P-2015-2495064 (Order entered September 3, 2015), the Commission held that customers "should have the opportunity to be heard on [ ] averments regarding the 'deleterious health symptoms' related to the smart meter." *Id.* at 18.

There is no dispute that the Complainant refused PECO access to and removed the PECO meter and replaced it in violation of the PECO tariff. PECO did not terminate her service. Ms. Brenda Eisen, the Manager of the Customer Service group addressing AMI installation matters, wrote to Ms. Murphy and provided additional information about the meter and the installation. After making additional efforts to contact Ms. Murphy and receiving a letter from Dr. Pocuik, PECO removed Ms. Murphy from the AMI deployment list. PECO then again began its efforts to contact Ms. Murphy, making additional contacts, including sending shut off notices. (*Testimony of Brenda Eisen* at 3-7; JA004185-JA004223). Ms. Murphy eventually filed the instant Complaint contesting PECO's installation of a smart meter and its warnings that her service would be terminated because she did not allow PECO access.

A review of the history in this matter shows that the Complainant has had the opportunity to be heard during several weeks of administrative procedures and hearings spread over a year. That opportunity continued with briefs submitted by her attorneys and the instant decision addressing her concerns about PECO meters. There is no violation of Complainant's due process rights here.

### Meter Installation

It is the position of Ms. Murphy that installation of an AMR meter was, and installation of an AMI meter would be, unsafe and unreasonable in violation of 66 Pa.C.S. § 1501 and 52 Pa.Code § 57.194 because these meters emit EFs that are detrimental to her health. She would like to utilize the analog meter that she installed at her home.

Ms. Murphy contends that she first became ill after installation of the AMR meter in 2002. There was testimony from one of her physicians, Dr. Prociuk, that Ms. Murphy was a very high functioning individual, and her health **[Begin Confidential]**

**[End Confidential]** did not interfere with her ability to function on a day to day basis before 2002. *Cross Examination Testimony of Peter J. Prociuk, M.D., December 5, 2016 Hearing Transcript* at 100:14-18; (JA001080). He further stated that in 2002, her health began to deteriorate at a noticeably increased rate. *Id.* at 80:13-15; (JA00106). He also testified that it was in 2002 that Ms. Murphy was **[Begin Confidential]**

**[End Confidential]**. Also in 2002, Ms. Murphy testified that she began suffering from **[Begin Confidential]**

**[End Confidential]**.

Dr. Prociuk testified that due in large part to Ms. Murphy's genetic makeup, she has always been **[Begin Confidential]**

**[End Confidential]**. According to Dr. Prociuk, the presence of any EF emitting device on Ms. Murphy's property is medically contraindicated. *Id.* at 20:17-18; (JA004073).

Dr. Prociuk also stated that there was a dramatic improvement of Ms. Murphy's health, mood and mental acuity when the Complainant hired an electrician in early May of 2016 to remove the AMR meter and replace it with an analog meter. PECO reinstalled the AMR meter on May 9, 2016 and the Complainant had it removed again, about an hour later. *Surrebuttal Testimony of Laura Sunstein Murphy*, at 16:15-16; (JA004362); *Testimony of Glenn Pritchard* at 1003 (JA001262); *Redirect Testimony of Peter J. Prociuk, M.D., December 5, 2016 Hearing Transcript*, at 112:12-116:9; (JA001092-001096). Dr. Prociuk also noted that Ms. Murphy had improved attitude and outlook about her health and that approximately two weeks after removing the AMR meter from her home, **[Begin Confidential]**

**[End Confidential]** all improved. *Id.* at 115:15-23; (JA001095). Additionally, Dr. Prociuk testified that shortly after removal of the AMR meter on Ms. Murphy's residence, testing that Ms. Murphy had been undergoing **[Begin Confidential]** **[End Confidential]** for about a year showed that Ms. Murphy was able to complete far more mental tasks and do so more quickly than she had been able to previously and without any exhaustion; her performance in these tasks "was notably better" *Redirect Testimony of Peter J. Prociuk, M.D., December 5, 2016 Hearing Transcript*, at 113:7-114:3; (JA001093-001094).. *Id.* at 114:8-24 (JA001094); 116:3-9 (JA001096); 123:5-8 (JA001103).

Dr. Prociuk also testified that when the AMR meter was reattached to her house, Ms. Murphy began to feel ill immediately. *Id.*; (JA004361); *see also Redirect Testimony of Peter J. Prociuk, M.D., December 5, 2016, Hearing Transcript*, at 115:3-6; (JA001095).

Dr. Prociuk testified that "I can say with a high degree of clinical certainty that I have good reason to believe that she has an extraordinary sensitivity to EFs[.]" *Redirect Testimony of Peter J. Prociuk, December 5, 2016, Hearing Transcript* at 116:16-22; (JA001096).

Ms. Murphy also contends that installation of an AMI meter at her home would be unsafe and unreasonable. In support of that assertion, the Complainant asks the Commission to adopt the testimony of expert witness, Andrew Marino, Ph.D. Dr. Marino, who was accepted as an expert in this proceeding, was a professor at the Louisiana State University Medical School

for approximately 33 years. At the time of the hearing, he was retired from the medical school and worked developing software intended to diagnose neurological and neuropsychiatric diseases. During his career, he focused on the biological effects of electromagnetic energy and the electrical properties of tissue as they are influenced by that energy. His Ph.D. is in biophysics. *Direct Testimony of Dr. Andrew Marino, September 15, 2016, Hearing Transcript*, at 565-575).

The Complainant points to two opinions of Dr. Marino, particularly, (1) that there is a basis in established science to conclude that the Complainant could be exposed to harm from the radiation emitted by PECO AMI or AMR smart meters, *Direct Testimony of Dr. Andrew Marino Hearing Transcript, September 15, 2016*, at 578:13-16; (JA000578); and (2) because the PECO smart meters have not been proved safe, it is unreasonable to force the Complainant to accept the exposure to the radiation emitted by the smart meters on her residence. *Id.* at 578:23-579:1; (JA000578-000579).

Dr. Marino's opinions are based on a premise that the Complainant otherwise lives in an electromagnetically quiet household. Given that environment, Dr. Marino concluded that the introduction of the EFs from a smart meter will cause the Complainant harm. *Direct Testimony of Dr. Andrew Marino, September 15, 2016, Hearing Transcript*, at 662:11-16. Dr. Marino's conclusion that such EFs could be harmful is based on his 15 years of documenting the existence of health effects from EFs and his own scientific study of EFs. *Id.* at 609:8-9. He also testified that pulsed EFs are released from the AMR meter at one watt of energy each time it emits or the AMI meter at two watts of energy each time it emits. Marino Direct 1. *Id.* at 584:10-14. *Rebuttal Testimony of Dr. Andrew Marino, January 25, 2017, Hearing Transcript*, at 1874:25-1875:15. It is asserted that this would be a material addition of EFs to the Complainant's environment and could be harmful. *Direct Testimony of Dr. Andrew Marino, September 15, 2016 Hearing Transcript*, at 639:21-640:6. Also in support of his conclusion, Dr. Marino referenced a May 2016 Report of the National Toxicology Program (NTP)<sup>8</sup> which he

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<sup>8</sup> The NTP is a government agency that studies toxicological effects in the general public due to environmental factors. *Andrew Marino, January 25, 2017 Hearing Transcript*, at 1854:4-8 (JA002179).

contends showed that rats developed tumors when exposed to EFs. *Rebuttal Testimony of Dr. Andrew Marino, January 25, 2017, Hearing Transcript*, at 1854:4-8 (JA002179).

A *prima facie* case was established by the Complainant.

In rebuttal, PECO presented the testimony of three experts. Mr. Glenn Pritchard is a PECO Engineer with an expertise in the design and operation of AMI meter systems. Ms. Murphy's concerns are in large part based upon her belief that PECO utilizes a "mesh" meter communication system with meters that "pulse." *See Rebuttal Testimony of Laura Murphy* at 42-44; (JA004389-004390); *Id.* at 54; (JA004400). Mr. Pritchard testified that unlike other meter systems, PECO does not have a mesh system, its meters do not pulse, and its smart meter system transmits on a band reserved for PECO, allowing for less in EF transmission than typical smart meter systems. *Rebuttal Testimony of Glen Pritchard*, 5-7; (JA00259-004261).

Mr. Pritchard also testified that as far as an accommodation, the customer determines the location of the customer's meter socket and PECO will connect to that location. *Id.* at 10-11; (JA004264-004265). He also testified that although PECO itself did not perform any tests on humans to evaluate the safety of smart meters, PECO ensured that the smart meters were compliant with FCC safety limits. *Cross Examination of Glenn Pritchard, December 6, 2016, Hearing*, at 1031:25-1032:20; (JA001290-001291).

Dr. Christopher Davis, Ph.D., testifying as an expert for PECO, concurred with Mr. Pritchard. Dr. Davis is a professor of electrical and computer engineering at the University of Maryland in College Park who studies, researches, teaches, and serves on national and international panels related to physics, biophysics, electrical engineering, electromagnetics, radiofrequency exposure and dosimetry. *Murphy Rebuttal Testimony of Christopher Davis* at 1-7; *Povacz Rebuttal Testimony of Christopher Davis* at 1-7. Dr. Davis noted that the FCC has promulgated limits for the maximum permissible exposure to radiofrequency fields emitted by a smart meter as  $0.6 \text{ mW/cm}^2$ , calculated as an average exposure over time. *Murphy Rebuttal Testimony of Christopher Davis* at 13; *Povacz Rebuttal Testimony of Christopher Davis* at 13-14. According to Dr. Davis, the average exposure from PECO's electric AMI meters is millions of

times less than the FCC maximum permissible exposure levels. *Murphy Rebuttal Testimony of Christopher Davis* at 15-16; *Povacz Rebuttal Testimony of Christopher Davis* at 16; PECO Exh. CD-2.

Dr. Davis also testified that the peak exposure from PECO's electric AMI meters is approximately 40 times smaller than the FCC limit for 30-minute average exposure. *Murphy Rebuttal Testimony of Christopher Davis* at 16; *Povacz Rebuttal Testimony of Christopher Davis* at 17. PECO Exh. CD-3. He also added that the exposure from PECO's electric AMI meters is also millions of times less than the guidelines published by the International Commission on Non-Ionizing Radiation Protection. *Murphy Rebuttal Testimony of Christopher Davis* at 16-17; *Povacz Rebuttal Testimony of Christopher Davis* at 17; PECO Exh. CD-4.

Dr. Davis also persuasively dismissed the NTP study referenced by Dr. Marino. He stated that the study was a non-peer-reviewed draft that may never be published. *Cross Examination of Dr. Christopher Davis, December 7, 2016, Hearing Transcript*, at 1274:14-1278:11; (JA001598-001602). He also did not find the study applicable to the EFs from smart meters because the study involved EFs at "a relatively high-power density that's not relevant." *Cross Examination of Dr. Christopher Davis, December 6, 2016, Hearing Transcript*, at 1090:22-24 (JA001349).

Dr. Davis also challenged the basis upon which Dr. Marino made his conclusions and questioned his calculations regarding EF exposure. Particularly, Dr. Davis did not find that the Complainant has an electromagnetically quiet home. He stated that in everyday life, people are exposed to radiofrequency field levels from many sources that are much higher than the radiofrequency fields associated with PECO's AMR or AMI meters. *Murphy Rebuttal Testimony of Christopher Davis* at 17; *Povacz Rebuttal Testimony of Christopher Davis* at 17-18; PECO Exh. CD-5. As an example, he noted that background exposure from UHF (Ultra High Frequency) broadcasting, such as television broadcasting, is hundreds of times higher than the exposure from PECO's AMI meters. *Murphy Rebuttal Testimony of Christopher Davis* at 17; *Povacz Rebuttal Testimony of Christopher Davis* at 18. PECO Exh. CD-6. He also testified that given even the limited cell phone use of the Complainant, her exposure to radiofrequency fields

from cell phones is thousands of times greater than from AMI meters. *Murphy Rebuttal Testimony of Christopher Davis* at 18.

As far as whether the EFs from the AMI meter PECO seeks to install would worsen or trigger adverse biological effects, Dr. Davis testified that the electric AMI meter will emit 83% less radiofrequency fields than does the existing electric AMR meter at her residence. *Murphy Rebuttal Testimony of Christopher Davis* at 18; *Povacz Rebuttal Testimony of Christopher Davis* at 18-19; PECO Exh. CD-8. It was the expert opinion of Dr. Davis, that to a reasonable degree of scientific certainty, there is no reliable scientific basis to conclude that exposure to radio frequency fields from PECO's AMI meters is capable of causing any adverse biological effects. *Murphy Rebuttal Testimony of Christopher Davis* at 24-25; *Povacz Rebuttal Testimony of Christopher Davis* at 24-25.

Dr. Mark Israel, M.D. also testified on behalf of PECO. Dr. Israel attended the Albert Einstein College of Medicine, had an internship and residency at Harvard Medical School, has worked at the National Institutes of Health and has been a professor of medicine and medical research at numerous medical schools. He has studied radiofrequency fields and health effects. Dr. Israel began to examine the research on electromagnetic fields, including radiofrequency fields, and health effects during his tenure at the National Cancer Institute more than 25 years ago. He has continued to follow the research literature on this subject since that time. *Murphy Rebuttal Testimony of Mark Israel Hearing Transcript* at 3-6; *Povacz Rebuttal Testimony of Mark Israel Hearing Transcript* at 3-6.

It is the expert opinion of Dr. Israel that to a reasonable degree of scientific certainty, there is no reliable scientific basis to conclude that exposure to radio frequency fields from PECO's AMI meters is capable of causing any adverse biological effects in people, including the Complainant. *Murphy Rebuttal Testimony of Mark Israel Hearing Transcript* at 3-5; *Povacz Rebuttal Testimony of Mark Israel Hearing Transcript* at 3-5; *Murphy Rebuttal Testimony of Mark Israel* at 31-32. Dr. Israel further noted that, although the World Health Organization classifies EFs as possible carcinogens, he did not give much weight to that "possible" classification. Dr. Israel finds the classification particularly unhelpful in the treatment

of patients. He noted that "anything is possible" and that as a practitioner and expert in this area, such a classification means that there "just isn't evidence to identify this as even a 'probable' carcinogen." December 9, 2016, *Rebuttal Testimony of Mark Israel Hearing Transcript* at 1630-31.

Dr. Israel conducted an evaluation of whether exposure to radiofrequency fields from PECO's AMI meters can cause, contribute to or exacerbate the conditions described by the Complainant. In that evaluation, he used the same methodology that he uses in the usual course of his medical work, which included searching medical and scientific databases, analyzing studies identified through that research, evaluating as a whole all of the studies that he determined were relevant to the claimed symptoms, including both studies that showed an effect and studies that did not show an effect. He also reviewed findings of public health agencies and organizations to see if they provided any insights he may have missed and to see if their conclusions were inconsistent with his initial determinations. He then made his final medical evaluation. *Murphy Rebuttal Testimony of Mark Israel* at 7; *Povacz Rebuttal Testimony of Mark Israel* at 6-7.

Dr. Israel conducted the above-described evaluation for each of the symptoms or conditions identified by the Complainant and concluded, for each such symptom, that there is no reliable medical basis to conclude that radiofrequency fields from PECO's electric AMI meters caused, contributed to, or exacerbated, or will cause, contribute to, or exacerbate, any of the symptoms identified by Complainant. *Murphy Rebuttal Testimony of Mark Israel* at 11-31. It is Dr. Israel's overall medical opinion that exposure to electromagnetic fields from PECO's smart meters has not been and will not be harmful to Complainant's health. He holds both his symptom-specific and overall medical opinions to a reasonable degree of medical certainty. *Murphy Rebuttal Testimony of Mark Israel* at 31-32; *Povacz Rebuttal Testimony of Mark Israel* at 26.

This was effective rebuttal by PECO. The burden then is upon the Complainant to rebut the utility's evidence by a preponderance of the evidence. Complainant did not meet this burden.

A review of the evidence overall does not support a finding that Ms. Murphy's medical condition is related to or worsened by the PECO AMR meter that was installed at her residence in 2002. The preponderance of the evidence does not support a finding that the Complainant was adversely affected by the smart meter or that PECO's use of a smart meter to measure the Complainant's usage will constitute unsafe or unreasonable service in violation of Section 1501.

Ms. Murphy clearly established that she unfortunately suffers from various ailments and illnesses. However, neither the Complainant's testimony nor Dr. Pociuk's testimony, seeking to link her illnesses to installation of the PECO AMR meter, overcomes the testimony of Dr. Davis and Dr. Israel that EFs from AMR meters or smart meters do not have such effects.

Dr. Prociuk testified that he believes that the Complainant's mental and consequently physical health improved upon removal of the AMR meter. However, while he properly relied upon representations by the Complainant that her illnesses were affected by the AMR meter and that she was in better health prior to its installation in 2002, he had no independent knowledge because the Complainant first saw him in 2005. *Cross Examination Testimony of Peter J. Prociuk, M.D., December 5, 2016, Hearing Transcript at 99-100; (JA001079 - 1080)*. Also, Dr. Prociuk's first letter to PECO on behalf of the Complainant after she refused access for smart meter installation made no mention of EFs, further suggesting that his testimony at the hearing relied upon representations made by the Complainant. (JA004222). Also, upon cross examination of Dr. Prociuk, it was made clear that before the 2002 installation of the smart meter, Ms. Murphy did not have generally good health and had significant health problems beginning years earlier. *Cross Examination Testimony of Peter J. Prociuk, M.D., December 5, 2016, Hearing Transcript at 100-102; (JA001080-1081)*.<sup>9</sup>

As for the AMI meter, PECO selected and installed smart meters that meet FCC maximum exposure to EFs limits. In fact, the amount of EFs that emanate from the PECO smart

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<sup>9</sup> The Complainant raised a claim about the AMR in her Second Amended Complaint after attending another hearing regarding Smart Meters. See *Second Amended Complaint*.

meters is millions of times smaller than the limit allowed by the FCC. It was not and is not unreasonable for PECO to seek to install these meters in accordance with the Act 129 installation plan approved by the Commission.

Additionally, the expert testimony weighed in favor of finding that smart meter EF exposure would not be harmful. Dr. Prociuk acknowledged that with respect to any harm from EFs, "clinical science is not well established." *Cross Examination of Dr. Prociuk* at 82-83; (JA001062-0163). Also, Dr. Marino, though knowledgeable and proficient in his field, would not say definitively that the EFs from the PECO smart meters would cause harm. *Direct Testimony of Dr. Andrew Marino, September 15, 2016, Hearing Transcript*, at 644-645. Dr. Davis and Dr. Israel were definitive that they would not.

Dr. Davis testified that any scientific evidence purporting to show that EFs from smart meters causes biological harm was ambiguous and unproven. *Murphy Rebuttal Testimony of Christopher Davis* at 14-15, *Povacz Rebuttal Testimony of Christopher Davis* at 14-16. Dr. Israel considered each symptom and condition of Ms. Murphy and looked at studies of any effects from EFs that pertain to those conditions and symptoms. It was his opinion as a physician with a focus on the effects of EFs on health, supported by his exploration of peer reviewed journals and valid studies, that EFs, at the level emitted by PECO smart meters, do not cause, exacerbate or contribute to the illnesses and symptoms of Ms. Murphy. *Murphy Rebuttal Testimony of Mark Israel* at 7-31; (JA004229-4266).<sup>10</sup>

Complainant did not meet her burden of proving that the installation of a smart meter would adversely affect her health or otherwise constitute unreasonable or unsafe service. Therefore, the Complainant cannot prevail here.

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<sup>10</sup> Since the hearing, PECO has changed the type of meter that it is installing at the residences and that meter, the Aclara, does not have a ZigBee radio and consequently, the ZigBee radio EF emissions. See *Ottaviano v PECO*, Docket Number F-2016-2542081 hearing transcript at 120-124.

## CONCLUSIONS OF LAW

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

2. Administrative agencies, like the Public Utility Commission, are required to provide due process to the parties appearing before them, which is satisfied when the parties are afforded notice and the opportunity to appear and be heard. *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. 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.

6. 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 Maria Povacz v. PECO Energy Company*, Docket No. C-2012-2317176 (Order and Opinion entered January 24, 2013).

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

8. 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; 66 Pa.C.S. § 1501.

9. There is not sufficient evidence to support a finding that the Complainant was adversely affected by the AMR meter or will be adversely affected by the AMI meter or that PECO's use of a smart meter will constitute unsafe or unreasonable service in violation of Section 1501 under the circumstances in this case. *Kreider v. PECO Energy Company*, Docket No. P-2015-2495064 (Opinion and Order, January 28, 2016).

ORDER

THEREFORE,

IT IS ORDERED:

1. That the formal Complaint filed by Laura Sunstein Murphy versus PECO Energy Company at Docket C-2015-2475726 is denied and dismissed;
2. That the record in this matter be closed.

Date: February 21, 2018

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/s/  
Darlene D. Heep  
Administrative Law Judge