

**BEFORE THE PENNSYLVANIA  
PUBLIC UTILITY COMMISSION**

Laura Sunstein Murphy,

v.

Docket No. C-2015-2475726

PECO Energy Company

**SECOND AMENDED COMPLAINT**

**I. INTRODUCTION**

Pursuant to Section 701 of the Public Utility Code, 66 Pa. C.S. § 701 and Sections 5.91, and 1.81 of the Commission's Regulations, 52 Pa. Code §§ 5.91 and 1.81, the Complainant in the above-captioned matter respectfully submits this Second Amended Complaint. This submittal further amends the Formal Complaint filed with the Pennsylvania Public Utility Commission ("PUC" or "Commission") on or about April 2, 2015 and docketed at the Commission on April 7, 2015 and the Amended Complaint filed with the Commission on or about July 28, 2015. In support of her Second Amended Complaint, the Complainant sets forth the following.

1. The Complainant is:

Laura Sunstein Murphy  
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West Chester, PA 19380  
(610) 431-1984

2. Complainant's Counsel is:

Edward G. Lanza, Esq.  
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3. Respondent is PECO Energy Company ("PECO"), an Electric Distribution Company ("EDC") regulated by the Commission.

4. Complainant is an electric customer of PECO receiving residential service at the address above under account number 2346901005.

## II. REASON FOR COMPLAINT

5. On or about March 26, 2015, Complainant received from PECO a 10-day shut-off notice threatening to cut off service to Complainant's residence on April 3, 2015. The shut-off notice is attached as Exhibit A.

6. The shut-off notice claimed that the reason for the threatened termination was Complainant's failure to provide PECO access to the Company's meter. *See*, Exhibit A.

7. Complainant is an elderly disabled customer who has a number of serious medical conditions that require her to have uninterrupted electric service to her home.

8. Complainant's residence is a farm, which has well water furnished through an electric pump located at a great distance from Complainant's residence. Without electricity, no running water is available on the farm.

9. Complainant's horses are reliant on a continuous supply of water furnished through electric automatic waterers in the barn and in their turnout field.

10. Complainant's residence and farm have no other source of power to cook or maintain refrigeration: there are no natural gas lines servicing Complainant's farm.

11. The Complainant's medical conditions include Ehlers Danlos Syndrome, lipedema and post-concussion syndrome, among other ailments, which make Complainant uniquely susceptible to Electro Magnetic Field (EMF) and Radio Frequency (RF) radiation.

12. Complainant's health has degenerated considerably over the space of the last fourteen years, since PECO's deployment of its AMR wireless meter on her home, so that she has become an invalid, not being able to enjoy most activities of daily living she enjoyed in the previous fourteen years, and she has been forced to undergo many tests, operations and procedures each year to maintain even a modicum of health.

13. Exposure to certain bursts of low level EMF radiation is known to exacerbate certain medical conditions, including the rare ailments suffered by Complainant.

14. Wireless smart meters, such as the AMR meter on the Murphy home and the wireless AMI meter deployed by PECO, have and will continue to cause grievous bodily harm to Complainant.

15. PECO admits that its AMR meter, deployed in the Murphy home and PECO customer base since at least 2002, and the PECO AMI meter, deployed by PECO since at least 2012, are known to emit bursts of low level EMF radiation, according to PECO's answers to Murphy Interrogatory Set I, I-1 and I-14 and I-16. and I-17. Attached as Exhibit B.

16. In 2015, Complainant requested that PECO abstain from installing a wireless AMI smart meter at her residence because the device would adversely affect her fragile health, and she was concerned with safety issues of the AMI deployment on her house, due to reports of many house fires shortly after installation of the wireless AMI meters.

17. In 2015, Complainant made a request to PECO for a reasonable accommodation under the Americans with Disabilities Act ("ADA"); Complainant was concerned about the safety of the AMI meter to herself. PECO rejected Complainant's request.

18. PECO ignored Complainant's requests to abstain from installing a wireless AMI smart meter at her premises and did not accept Complainant's doctor's recommendation to PECO to abstain from installing an AMI meter at the residence.

19. Since the initial filing of her Formal Complaint, Complainant has researched additional safety concerns regarding the AMI meter.

20. PECO has submitted responses to Complainant's Interrogatoris Set I in the instant action, responding at I-1 (Exhibit B), *inter alia*, that (1) the AMR meter which PECO installed on the Murphy residence in May of 2002 was originally programmed to emit peaked pulses of EMF every five minutes, or 288 times per day, each with a length of 20 milliseconds, and, at I-6, that (2) the AMR meter on the Murphy property has never been serviced by PECO since it was installed on the Murphy residence in May 2002, and at I-8 (3) the PECO Murphy AMR meter cannot be reprogrammed "to change the number of transmissions made by its communications module." Therefore, the residents at the Murphy household have no method of turning off or adjusting the EMF emitted by the AMR meter day and night.

21. PECO filed responses to Complainant's Interrogatories Set I at I-14 and I-16 (Exhibit B) state that the AMI smart meter PECO intends to install on the Murphy residence is programmed to emit EMF spikes, each for 70 milliseconds in duration, (twenty-four hours a day) once every 90 minutes through its FlexNet Module but "once installed, the frequency of transmission from the Flexnet communication module will be remotely" modified, and "can be tuned to transmit [pulsed EMF] as frequently as once every 15 minutes or as seldom as once every 240 minutes."

22. PECO submitted responses to Complainant's Interrogatories, Set I at I-16 and I-17 (Exhibit B) in which Respondent states that the Zigbee Wi-Fi radio module contained in the

PECO AMI meter PECO intends to install on the Murphy residence is programmed to emit spikes of EMF every thirty (30) seconds, or 120 times per hour, and 2880 times per day) with each spike of EMF emission lasting 0.7 milliseconds, until it pairs with "any known device" in the residence household, after which, its "duty cycle will decrease."

23. Glenn Pritchard, PECO's expert engineer has testified under oath in a Commission proceeding that that he was not aware of any technology which used fiber optics to transmit data to meet Act 129 mandates. *Kreider v PECO* (Docket No. C-2015-2469655) TR 113 lines 20-25, TR 114, lines 1-6.

24. Mr. Pritchard testified that he "evaluates the meters for their technical capabilities, not on consumers." *Kreider* TR 119, lines 24-25.

25. In PECO's answer to Murphy Interrogatories Set I at I-27, the Company states that "PECO has not conducted any study regarding or resulting in findings pertaining to electromagnetic fields or radio frequency emissions migrating to or emanating from residential wiring or household appliances as a result of, or from, a smart meter." (Exhibit B).

26. Complainant therefore avers that PECO has never tested its AMR nor its wireless AMI meters for their biological effects on humans or households *in situ*, but only for their technical capabilities to get PECO's required information to PECO, and, in the case of the AMI meter, to get electrical consumption information to the consumer if the consumer so desires.

27. Complainant was unaware in 2016, before she attended the *Kreider* hearing, and before she received PECO's answers to Interrogatories that the PECO AMR meter was installed on her home in 2002, and was emitting continual spikes of EMF, without any ability of her to mitigate these spikes, which, upon reasonable investigation, Complainant believes has greatly increased the morbidity of her genetic diseases which she suffers from, and also greatly

contributed to her inability to recover from the effects of a motor vehicle accident she was involved in two years ago.

28. Complainant was unaware at the time of the initial filing of her Formal Complaint, and at the time of filing of her Amended Complaint that all wireless electric meters contain a switched mode power supply element, an element which is not contained in analog meters, which may pose additional deleterious health effects in sensitive or disabled individuals such as Complainant through its effect of causing so called "dirty electricity" or harmonics on the household wiring.

29. Since the filing of her Formal Complaint and the filing of her Amended Complaint, Complainant has been made aware of alternative methods of deploying smart meters without using wireless modalities and without emitting EMF in the process, through the use of fiber optics or wired connections.

30. Since the filing of her Formal Complaint, Complainant has carried out measurements of the pulsed EMF emissions coming from the AMR meter on her home, and also coming from an AMI meter on another PECO customer residence which PECO installed in 2015. Complainant has averred in her Surrebuttal testimony that PECO's answers to Interrogatory Set I may be in error as to at least two PECO customers at this time, because both the AMR meter on her home, and the AMI meter on another PECO customer residence emitted pulsed EMF far more frequently than PECO stated in its answers to Murphy Interrogatory Set I.

31. Complainant believes, and therefore avers, that the continual deployment of any wireless device by PECO on her premises constitutes unsafe service to her, and deployment of any other wireless device by PECO on her premises would constitute PECO's ongoing creation

and perpetuation of an unsafe and unhealthy condition at the Murphy home and surrounding property in violation of Section 1501 of the Public Utility Code.

32. The Public Utility Code and the Commission's regulations require that regulated utilities like PECO "furnish and maintain adequate, efficient, *safe*, and *reasonable* service and facilities." 66 Pa. C.S. § 1501; 52 Pa. Code § 57.194 (emphasis added).

33. The Public Utility Code and the Commission's regulations further require that PECO make all "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." 66 Pa. C.S. § 1501; 52 Pa. Code § 57.194 (emphasis added).

34. PECO's installation of the wireless AMR smart meter in Complainant's home has already constituted a violation of Section 1501 of the Public Utility Code and Section 57.194 of the Commission's regulations, because it has created unsafe and unreasonable service for Complainant, a PECO customer.

35. PECO's installation of an AMI wireless smart meter on Complainant's home would constitute a continuing violation of Section 1501 of the Public Utility Code and Section 57.194 of the Commission's regulations, because (1) the Zigbee whole-house Wi-Fi portion of the AMI wireless smart meter would subject the entire Murphy household, (which contains no so-called "smart" appliances or equipment), to constant pulsed EMF at least every 30 seconds of the day at 0.7 milliseconds per pulsed transmission, constituting 120 pulses of EMF per hour or 2,280 pulses of EMF per day, in addition to (2) the initial FlexNet Module pulsations of at least 96 times per day at 70 milliseconds per transmission, with all these pulsed EMF emissions continuing twenty four hours a day, day and night. See, Exhibit B.

36. Neither PECO's continued deployment of the wireless AMR meter, nor PECO's deployment of a wireless AMI meter at the Murphy residence is necessary or proper for the accommodation, convenience and safety of Complainant.

37. Complainant has been compelled to purchase and install an analog meter which poses no safety or health threat to Complainant's house structure as certified by a licensed electrician.

38. PECO claims it is obligated by Act 129 to install smart meters for all its customers. *See*, 66 Pa. C.S. § 2807(f) and *Smart Meter Plan*, Docket No. M-2009-2123944 (Order issued May 6, 2010).

39. PECO is not obligated to install *wireless* smart meters, nor is PECO permitted to create unsafe, unhealthy or unreasonable conditions at a customer's premises. In fact, creating an unsafe condition at Complainant's residence is a violation of Section 1501 of the Public Utility Code and Section 57.194 of the Commission's regulations.

40. The wireless AMR meter that PECO installed on Complainant's residence in 2002 contributed to Complainant's debilitated medical condition, as shown by medical records provided to PECO, and testimony submitted by Complainant.

41. A PECO AMI wireless meter as currently universally deployed by PECO also cannot be tolerated by Complainant due to medical reasons, unless it, too, can be deployed without any EMF emissions, in a safe manner for Complainant.

42. Complainant 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.

43. Complainant has lived at the same address since 1990, and therefore, PECO has a sufficient history of electricity consumption data upon which to generate an estimated electricity bill for the Murphy household each month.

44. The use of an analog meter in Complainant's property will not negatively affect power outage reporting, a primary objective of Act 129, because there is always someone at the property who can report outages. Complainant's horses, dogs and cats live on her farm and require constant monitoring from human caretakers. In addition, all buildings in Complainant's neighborhood have AMI meters installed, and presumably, power outages in the area are being monitored and reported already.

45. PECO's installation of a wireless AMR meter on Complainant's residence in 2002 without fully informing the Complainant of the possible dangers of the AMR meter to Complainant's health constitutes a violation of Section 1501 of the Public Utility Code.

46. PECO's wireless AMI meters have not been proven to be safe for customers' homes and the installation of such devices constitutes unsafe service in violation of Section 1501 of the Public Utility Code.

47. PECO's continued insistence on deployment of any wireless EMF-emitting meter at Complainant's residence under threat of termination prevents Complainant from access to safe and reasonable electrical service.

48. Electric service is essential to the health and well-being of residents of the Commonwealth. 66 Pa. C.S. § 2802(9).

49. PECO's threatened termination of electrical service, if allowed, would constitute a denial of essential electric service to a disabled customer who needs electricity to maintain whatever level of health and well-being she has been left with since the introduction of continuous wireless EMF transmissions into her home and onto her property by PECO.

50. PECO has presented Complainant, through its actions in the instant case, through its actions in the *Kreider* case, and through its inconceivable ignorance of the availability of technology which complies with Act 129 while not emitting spikes of EMF which have harmed Complainant and is harmful to disabled customers such as Complainant, with three unacceptable choices: namely: (1) having her electrical service terminated; (2) moving away from her farm which has been her home and her family's and her animals' home for 26 years ,or (3) accepting a metering device that is exceedingly harmful to her health.

### **III. RELIEF SOUGHT**

51. Complainant respectfully requests that the Commission compel PECO to abide by the requirements of Section 1501 of the Public Utility Code and Section 57.194 of the Commission's regulations to provide safe and reasonable service to Complainant.

52. Complainant respectfully requests that the Commission compel PECO to make an accommodation for Complainant based on her disabilities, and desist from deploying or attempting to deploy any wireless equipment that is harmful or which would exacerbate Complainant's medical conditions.

53. Complainant respectfully requests that the Commission:

- (1) allow her to retain the analog meter, which is safe for Complainant's health,
- or, in the alternative,

(2) allow PECO to install an alternate wired or fiber optic connected meter which emits no EMF and which is safe for Complainant, taking into consideration her unique medical vulnerabilities as explained in her testimony and that of her expert witness and her physician.

54. The Commission should compel PECO to provide metering that is safe for Complainant, considering her unique medical conditions which the AMR meter has worsened.

55. The Commission should compel PECO to cease and desist from any attempts to install a wireless smart meter or other harmful equipment at Complainant's premises, as such an action is a violation of Section 1501 of the Public Utility Code and Section 57.194 of the Commission's regulations as they pertain to Complainant's unique medical conditions.

56. Complainant asks that the Commission order a permanent stay of any termination on the part of PECO against Complainant for any alleged denial of access to the meter at the subject premises.

57. In the alternative, and pursuant to 52 Pa. Code § 1.91, Complainant respectfully requests that the Commission order the waiver of any rule, regulation or Commission Order that the Commission believes requires PECO to deploy a wireless EMF-emitting meter at the Complainant's premises.

**IV. CONCLUSION**

Based on the foregoing, Complainant respectfully requests that the Commission sustain her Formal Complaint and issue an Order granting the relief requested and any other remedy that the Commission deems just and appropriate.

Respectfully submitted,



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Date: June 6, 2016

Counsel for Complainant

**VERIFICATION**

I, Laura Sunstein Murphy, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect to be able to prove the same at a hearing held in this matter.

I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

A handwritten signature in black ink, appearing to be 'LSM', is written over a horizontal line. The signature is stylized and cursive.

Laura Sunstein Murphy  
Complainant

Date: June 5, 2016



**PECO Energy Company's Answers to  
Interrogatories Complainant Laura  
Sunstein Murphy, Set I**

Murphy I-1: With regard to the AMR meter currently installed at the Murphy residence ("Murphy AMR Meter"),

- a. When was the Murphy AMR Meter installed?
- b. What is the make, model and specifications of the Murphy AMR Meter?
- c. How many times per day does it transmit remotely?
- d. How long is each transmission?
- e. How far does it transmit remotely?
- f. What are its peak emissions?
- g. Does it transmit EMF to the electric wires inside the Murphy household?

PECO Answer to Murphy I-1:

- a. May 8, 2002
- b. Siemens/L+G/Duncan electro-mechanical meter with a Landis + Gyr AMR Communications Transmit Only Meter Module (TOMM)
- c. 288 times per day for its scheduled transmissions (every 5 minutes)
- d. 20 milliseconds. Total daily on-air time transmitting is 5.76 seconds
- e. The expected useful distance is less than 1 mile
- f. 1 watt or 33 dBm
- g. No transmissions are made to communicate with facilities, devices, or wires inside the household

Responsible Witness: Glenn Pritchard

**PECO Energy Company's Answers to  
Interrogatories Complainant Laura  
Sunstein Murphy, Set I**

**Murphy I-6: When was the last time the Murphy AMR Meter was checked by PECO on site?**

**PECO Answer to Murphy I-6:**

The Murphy AMR meter was tested for accuracy on April 15, 2002, prior to installation. PECO has not identified any onsite checks.

**Responsible Witness: Glenn Pritchard**

**PECO Energy Company's Answers to  
Interrogatories Complainant Laura  
Sunstein Murphy, Set I**

**Murphy I-8: Is the Murphy AMR Meter able to be reprogrammed? If yes, what possible changes can be made to the Murphy AMR Meter programming as to its emissions?**

**PECO Answer to Murphy I-8:**

**No. It is not possible to reprogram the Murphy AMR meter to change the number of transmissions made by its communication module.**

**Responsible Witness: Glenn Pritchard**

**PECO Energy Company's Answers to  
Interrogatories Complainant Laura  
Sunstein Murphy, Set I**

**Murphy I-14: With regard to the Murphy Intended Smart Meter,**

- a. What is the instantaneous peak radiofrequency/microwave power output of the wireless transmitter in the Wireless Smart Meter as presently programmed, and
- b. What is the instantaneous peak radiofrequency/microwave power output possible to be programmed remotely?
- c. How long does each of the peaks last?

**PECO Answer to Murphy I-14:**

- a. The instantaneous peak radio frequency power output of the wireless transmitter in the FlexNet Communication modules is 2 watts/30dBm. The peak radio frequency power output for the ZigBee Radio is 130.92 milliwatts/20dBm.
- b. The instantaneous peak power output cannot be reprogrammed remotely.
- c. Each transmission of the FlexNet module is 70 milliseconds in duration. Each transmission of the Zigbee radio is 0.7 milliseconds in duration.

**Responsible Witness: Glenn Pritchard**

**PECO Energy Company's Answers to  
Interrogatories Complainant Laura  
Sunstein Murphy, Set I**

Murphy I-16: With regard to the Murphy Intended Smart Meter, what is the total number of transmissions of radiofrequency/microwave radiation per day:

- a. as currently programmed and
- b. as could possibly be programmed for any purpose, both on average and at a maximum, at their respective frequency of operation?

PECO Answer to Murphy I-16:

- a. The FlexNet communication module is programmed by the manufacturer to transmit once every ninety minutes. The Zigbee is programmed to transmit once every thirty seconds until it pairs with an enabled device.
- b. Once installed, the frequency of transmission from the FlexNet communication module will be remotely tuned to reflect how well the specific module communicates with the nearest Tower Gateway Basestation. Theoretically, the module can be tuned to transmit as frequently as once every 15 minutes or as seldom as once every 240 minutes. The system average tuning to date is approximately once every 145 minutes, or just under 10 (9.63) times a day on average. However, PECO has reviewed the communication tuning of the installed FlexNet modules in the immediate neighborhood of the Murphy residence, and they have been tuned to 240 minutes (6 times a day). PECO therefore expects that the Murphy Intended Smart Meter will be tuned to transmit once each 240 minutes (6 times a day).

The ZigBee radio is currently programmed to transmit once every thirty seconds (2880 times per day) until it is paired to any known device(s) in the household. Under the existing programming, once the Zigbee radio is paired to any known device(s) in the household, the duty cycle will decrease.

Responsible Witness: Glenn Pritchard

**PECO Energy Company's Answers to  
Interrogatories Complainant Laura  
Sunstein Murphy, Set I**

Murphy I-17: With regard to the Murphy Intended Smart Meter, what is

- (a) the current average length of transmission time per day and
- (b) the maximum total transmission time per day possible for any purpose from the meter's respective frequency of operation?

PECO Answer to Murphy I-17:

- (a) For the FlexNet Module, the current average length of transmission time per day is 0.7 seconds (10 transmissions at 70 milliseconds per transmission). For the ZigBee radio, the current average length of transmission time per day is 2.016 seconds (2880 transmissions at 0.7 milliseconds per transmission).
- (b) The maximum total transmission time per day of the Flex Net Module is 6.72 seconds per day (96 transmissions at 70 milliseconds per transmission). However, at the expected tuning of the Murphy meter, the maximum total transmission time per day will be 0.42 seconds (6 transmissions at 70 milliseconds per transmission). The maximum total transmission time per day for the Zigbee radio is the programmed level described in subpart (a) to this answer; the actual transmission time will be less once the Zigbee radio is paired with a device.

PECO notes that, during outages, events of remote connect/disconnect, or other occasional events, there may be short periods during which the communication module will make additional transmissions for the duration of those occasional events.

Responsible Witness: Glenn Pritchard

**PECO Energy Company's Answers to  
Interrogatories Complainant Laura  
Sunstein Murphy, Set I**

**Murphy I-27: Has PECO studied the impact of Smart Meter technology on residence wiring and on each of the appliances found in the home of PECO residents? If yes, please provide copies of any and all such studies.**

**PECO Answer to Murphy I-27:**

**PECO has a pending objection to this Interrogatory.**

**Responsible Witness: Prepared by counsel.**

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Laura Sunstein Murphy

v.

PECO Energy Company

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Docket No. C-2015-2475726

**CERTIFICATE OF SERVICE**

I hereby certify that true and correct copies of the Second Amended Complaint in this matter have been served upon the person listed below, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.55 (relating to service upon an attorney).

Via Electronic Mail

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Shawane Lee, Esq.  
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June 6, 2016



Edward G. Lanza

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