

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Debra S. and Bruce K. Zimmerman	:	
	:	
v.	:	C-2017-2615038
	:	
PPL Electric Utilities Corporation	:	

**INITIAL DECISION**

Before  
Elizabeth H. Barnes  
Administrative Law Judge

**INTRODUCTION**

Two residential customers filed a complaint seeking to prevent an electric distribution company (EDC) from installing a smart meter a/k/a “Advanced Metering Infrastructure (AMI) meter” or “Radio Frequency (RF) meter” at their residence. The complaint will be dismissed for failure to prove by a preponderance of evidence that the installation of this smart meter constitutes unsafe or unreasonable service under 66 Pa. C.S. § 1501.

**HISTORY OF THE PROCEEDING**

On July 19, 2017, Debra S. and Bruce K. Zimmerman (Complainants) filed a formal complaint against PPL Electric Utilities Corporation (PPL, PPL Electric, Company or Respondent) averring PPL was threatening to shut off their service. Complainants reject the installation of an AMI Smart Meter citing medical reasons and medical opt-out conditions including: cancer, Electromagnetic Hypersensitivity (EHS), Idiopathic Environmental Intolerance (IEI), Fibromyalgia, Chronic Fatigue Syndrome (CFS), neuropathies, and chronic diseases. Complaint ¶ 4. Complainants request they be allowed to maintain the analog meter on their home at 2610 Gateway

Drive, Harrisburg, PA, and not be threatened with service termination for refusing an AMI Smart Meter.

On July 20, 2017, the Complaint was served upon PPL.<sup>1</sup> On August 9, 2017, Respondent filed a timely Answer with New Matter. The Answer admitted that the Respondent provides electric service to the Complainants and intends to install a smart meter at the address shown on the Complaint. The Answer contends that Respondent is required to install AMI or smart meters and that it has the right to terminate service for failure of the customer to permit access to the meter.

On August 15, 2017, a Hearing Notice was issued scheduling a hearing for October 12, 2017 and assigning the case to me as presiding officer. A Prehearing Order was issued on August 24, 2017. On September 21, 2017, PPL filed an unopposed letter requesting the hearing be rescheduled. On October 4, 2017, a Second Prehearing Order was issued rescheduling the hearing to January 29, 2018 and directing the parties to exchange all exhibits, reports and statements by January 15, 2018. On October 5, 2017, a Hearing Rescheduling Notice was issued rescheduling the hearing to January 29, 2018.

On December 18, 2017, PPL filed a Motion to admit Curtis S. Renner, Esquire, *pro hac vice* and represent PPL as additional counsel. On January 8, 2018, an Interim Order was issued admitting Mr. Renner *pro hac vice*. On January 22, 2018, PPL filed a second request for continuance, which was granted. On February 21, 2018, a Hearing Rescheduling Notice was issued rescheduling the hearing to June 22, 2018.

On May 24, 2018, PPL served its exhibits, reports and statements on Complainants. On June 22, 2018, the in-person evidentiary hearing was held. Complainants appeared *pro se*.

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<sup>1</sup> PPL signed a waiver of the Section 702 requirement for registered or certified mail service of formal complaints, 66 Pa. C.S. § 702, and agreed to electronic service under the Commission's waiver of 702 program. *See In Re: Electronic Service of Formal Complaints*, Secretarial Letter Dated December 22, 2014, at Docket Nos. M-2013-2398153 *et al.* Service is listed in the electronic Audit History of the case as entered by the Secretary's Bureau as having been affected on September 26, 2017 because an attempt to e-serve on August 25, 2017 was unsuccessful. Additionally, in its Main Brief, PPL stated it was served the Complaint on September 26, 2017. Thus, PPL's Answer filed on October 16, 2017 is deemed timely filed.

Devin Ryan, Esquire and Curtis Renner, Esquire appeared on behalf of Respondent with four witnesses: William Hennegan, Scott Larson, Christopher Davis, Ph.D., and Mark Israel, M.D. Admitted into the record was Complainants' Exhibit No. 1 (Mrs. Zimmerman's Notice). Also admitted were PPL Electric Exhibits Nos. 1 and 2 (Direct Testimony of Dr. Davis and Dr. Israel), as well as PPL Electric Exhibits Nos. 3-7. At the hearing, I gave the parties until July 27, 2018 to file Main Briefs and until August 7, 2018 to file Reply Briefs. Tr. 56. A 58-page transcript was filed on July 16, 2018. Respondent filed a Main Brief on July 27, 2018. To date, no Reply Briefs have been filed. The record closed on August 7, 2018. This case is ripe for a decision.

### FINDINGS OF FACT

1. Complainants in this proceeding are Debra and Bruce Zimmerman, who reside at 2610 Gateway Drive, Harrisburg, Pennsylvania. Tr. 6-10. PPL Exhibit No. 2, Complainants Exhibit No. 1.<sup>2</sup>

2. Respondent in this proceeding is PPL Electric Utilities Corporation, an electric distribution company. Tr. 11.

3. On June 30, 2014, PPL filed its new Smart Meter Plan intended to comply with all the requirements of Act 129 and the Commission's Smart Meter Implementation Order. PPL Electric Exhibit No. 3.

4. PPL selected Radio Frequency (RF) Mesh meters and metering system because the Company determined that the RF Mesh system would support the 15 capabilities required by Act 129 and the Smart Meter Implementation Order. PPL Electric Exhibit No. 3 at 5-6.

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<sup>2</sup> Hereinafter "Complainants Exhibit" will be referred to as "C Exhibit."

5. The RF Mesh system allows the Company to receive data from the customer's meter wirelessly, unlike PPL's previous powerline carrier (PLC) system that used the customer's actual wires. Tr. 29-32.

6. The individual RF Mesh meters are used as relay points to transmit data back to PPL. Tr. 31-32.

7. Under the Smart Meter Plan, the RF Mesh meters are to be deployed between 2017 and 2019 for all of PPL's 1.4 million customers. PPL Electric Exhibit No. 3 at 3, 32, Tr. 33.

8. On April 25, 2017, PPL sent Complainants a letter notifying them that it intended to install the new AMI meter on their property within approximately the next three weeks. PPL Electric Exhibit No. 2, Tr. 15.

9. PPL had deployed approximately 840,000 RF Landis + Gyr meters as of the June 22, 2018 hearing.

10. Of the meters deployed, there have been only two reported fires. Tr. 37-38, 42-43, PPL Electric Exhibit No. 3.

11. The two meter fires were caused by installation and manufacturing problems with a class 480 RF meter, typically installed with commercial/industrial accounts. Tr. 41-42.

12. The root cause of the fires with a class 480 RF meter has been discovered. Tr. 41-42.

13. PPL has redesigned the class 480 RF meter and has reviewed the torquing and installation of that meter. Tr. 41-42.

14. The RF Mesh meter to be installed for the Complainants' residential account is the Landis + Gyr Focus AX meter. Tr. 31.

15. There have been no reports of fires regarding the Landis + Gyr Focus AX meter within PPL's service territory. Tr. 40-43.

16. Complainants do not currently have an AMI meter at 2610 Gateway Drive. Tr. 6-10, C Exhibit 1.

17. PPL Witness Davis has a Ph.D. in Physics and is a fulltime Professor with an endowed Chair at the University of Maryland, where for over 30 years he has taught Physics, Electrical Engineering, Electromagnetics, and RF Electromagnetics to undergraduate and graduate students. PPL Electric Statement No. 1 at 1-2.

18. In addition to his teaching, Dr. Davis is an active scientific researcher in the fields of Physics, Biophysics, Electrical Engineering, Bioelectromagnetics and RF Bioelectromagnetics, conducting many scientific studies in these fields and publishing over 250 studies in peer-reviewed scientific journals. PPL Electric Statement No. 1 at 2.

19. Dr. Davis conducted a substantial amount of research on RF fields of the type produced by the AMI meters being used by the Company. PPL Electric Statement No. 1 at 3.

20. RF fields are part of the lower energy, non-ionizing portion of the electromagnetic spectrum which consists of lower frequency signals that do not have enough energy to break chemical bonds in cells or DNA. PPL Electric Statement No. 1 at 5-6.

21. RF fields come from many sources in our everyday environments, including AM/FM radio, television broadcast, cell phones and their communication networks, portable phones, garage door openers and Wi-Fi networks. PPL Electric Statement No. 1 at 5-6, 12-17.

22. The Federal Communications Commission (FCC) has determined safe public exposure levels for RF fields from devices that transmit RF signals, such as the AMI meters. PPL Electric Statement No. 1 at 8.

23. The FCC safe public exposure limits are based on evaluations of the body of scientific research on RF fields and were adopted in consultation with other federal agencies, including the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA). PPL Electric Statement No. 1 at 8-9.

24. The levels of RF fields from the Landis + Gyr Focus AX AMI meters are 98,000 times lower than the RF exposure safety limits established by the FCC. PPL Electric Statement No. 1 at 9, 14, PPL Electric Exhibit CD2.

25. RF signals from the AMI meter are of very short duration and will occur for only a total of 84 seconds over a 24-hour period. PPL Electric Statement No. 1 at 7.

26. There are seven television broadcast towers within a 50 mile radius of Complainants' location in Harrisburg, Pennsylvania. PPL Electric Statement No. 1 at 14.

27. Based on the locations of each tower and their RF power outputs, the constant background level of RF fields at Complainant's residence are 36.6 times higher than the RF signals from the AMI meter. PPL Electric Statement No. 1 at 14, PPL Electric Exhibit CD-5.

28. The RF exposure from a cell phone used at a person's head is 260,000 times higher than the average RF levels 1 meter away from the Company's new smart meter. C Introduction at 2, PPL Electric Statement No. 1 at 11, PPL Electric Exhibit CD-4.

29. PPL Witness Israel received his undergraduate degree from Hamilton College and his medical degree from the Albert Einstein College of Medicine, and he completed his medical training at Harvard Medical School. PPL Electric Statement No. 2 at 1.

30. Dr. Israel is a Professor of Medicine, Pediatrics, and Molecular and Systems Biology at the Dartmouth Medical School and the Executive Director of the Israel Cancer Research Fund in New York, an international charitable fund for medical and scientific research programs. PPL Electric Statement No. 2 at 1.

31. Dr. Israel is board certified and licensed to practice medicine. PPL Electric Statement No. 2 at 3.

32. Dr. Israel has conducted medical research for 40 years in a wide variety of areas, including systems biology, biochemistry, cell biology, cancer, molecular biology, and molecular genetics and has published over 245 medical research studies in leading peer-reviewed scientific journals. PPL Electric Statement No. 2 at 3-4.

33. Dr. Israel also has taught medicine and science for more than 30 years to medical students, graduate students, interns, residents, and practicing physicians in a number of fields, including endocrinology, immunology, hematology, neurology, cardiology, biochemistry, cell biology, genetics, molecular genetics, medical oncology, and radiation oncology. PPL Electric Statement No. 2 at 3.

34. Claimed symptoms related to electromagnetic hypersensitivity (EHS) are more accurately described as “Idiopathic Environmental Intolerance” (IEI), in which “idiopathic” means “cause unknown,” rather than electromagnetic hypersensitivity. PPL Electric Statement No. 2 at 11-12.

35. There are no established medical criteria for the diagnosis or treatment of IEI. PPL Electric Statement No. 2 at 13-16.

36. IEI and the variety of symptoms attributed to it are not caused by exposure to RF fields. PPL Electric Statement No. 2 at 13-16.

37. The World Health Organization and a number of other public health authorities have concluded that the scientific research on RF exposures from cell phone use, which are far higher than the RF from PPL's smart meters, has not shown that RF fields cause adverse health effects. PPL Electric Statement No. 2 at 10-11.

38. Several U.S. state public health authorities also have investigated claims about health effects from smart meters and have concluded that there is no credible scientific evidence that RF fields from smart meters will cause or contribute to any adverse health effects. PPL Electric Statement No. 2 at 11.

39. There is no reliable medical basis to conclude that RF fields from the AMI meters being used by PPL will cause or contribute to the development of illness or disease. PPL Electric Statement No. 2 at 15.

40. There is no reliable medical basis to conclude that RF fields from the AMI meter being used by PPL would cause, contribute to, or exacerbate any of the symptoms claimed by the Complainants, or any other adverse health effects. PPL Electric Statement No. 2 at 15.

41. PPL's new AMI meters are equipped with software and mechanisms that alert the Company if there is an issue with overheating. Specifically, there is a heat alarm set within the meter software program, so when the temperature of the meter reaches an established level, the Company is alerted of the issue. Tr. 35-37.

42. PPL takes 15-minute interval temperature readings from the meter, so it can track the meter's temperature and identify any current issues or problematic trends. Tr. 35.

43. If the Company detects an issue with the meter's temperature, at 85 degrees Celsius, PPL will dispatch a technician to investigate. Tr. 35-36.

44. PPL has conducted substantial research and taken many steps to prevent fire incidents. Tr. 36.



45. The majority of overheating with AMI meters is due to the customer's meter base having broken or a faulty meter jaw of the meter base. Tr. 34-37.

46. PPL has taken several steps to mitigate the risk of these worn out meter bases, including analyzing the materials utilized for meter bases, enhancing its inspection criteria so that its service technicians are better able to identify loose jaws in the field, and ensuring the new AMI meters meet the American National Standards Institute ("ANSI") and Institute of Electrical and Electronics Engineers ("IEEE") requirements. Tr. 35-38.

47. Grid One Solutions is PPL's contractor for installing the Landis + Gyr AX meters. Tr. 38.

48. Grid One Solutions takes pictures of the meter base and performs a physical inspection prior to removal of the old meters. Tr. 38-44.

49. PPL's Agent Grid One Solutions looks for gaps within the jaws and pitting within jaws. Tr. 39-44.

50. PPL or its Agent do not currently use equipment to test for retention force on the jaws prior to installing the new smart meters. Tr. 39-44.

51. PPL's protocol is to replace and repair loose or broken jaws, substantially corroded jaws, rusty meter sockets, leaking or otherwise compromised sockets during deployment and to accept financial responsibility for those repairs/replacements. Tr. 40-41.

52. PPL had two meter overheating incidents in mid-2017 involving other RF Landis + Gyr meters (class 480, k-based bolt-in meters), a commercial/industrial meter capable of reading electrical loads of 600 amperes. Tr. 41-43.

53. These two incidents of overheating were due to installation and manufacturing problems with bolted busbar connections involving three phase service and a different model meter, Landis + Gyr class 480. Tr. 41-44.

54. The Landis + Gyr Class 480 meter requires a higher level of technician to install the meter to ensure proper placement. Tr. 44.

55. PPL selected the Landis + Gyr Focus AX meter for residential service as it met PPL's requirements on the overheating and thermal breakdowns, which are higher than the national standard. Tr. 35-38.

56. The Landis + Gyr AMI meter meets all national standards, including those issued by the ANSI and is certified by Underwriters Laboratories. Tr. 34, 43-44.

57. The Landis + Gyr AMI meter is similar to the model PECO Energy Company is deploying for residential service. Tr. 45.

58. As a part of its Smart Meter Plan proceeding, PPL filed a detailed AMI Customer Privacy Policy, which sets forth the data PPL will collect through the new smart meter, the steps the Company will take to protect the data, and the ways in which PPL will use the data. Tr. 18-19, PPL Electric Exhibit No. 5.

59. PPL is collecting data on the amount of electricity used and significant event information, such as outages, voltage, heat alarms, and meter tampering alerts. Tr. 18-20, PPL Electric Exhibit No. 5, Section 1.2.

60. PPL protects customer data from public disclosure through the use of firewalls, encryption, digital signatures, authentication and access controls. Tr. 19.

61. PPL's personnel use a user ID and password that change on a regular basis. Tr. 20-21.

62. PPL's steps to protect data are consistent with recognized industry standards including those issued by the National Institute of Standards and Technology. Tr. 19, PPL Electric Exhibit No. 3.

63. PPL has not issued a notice of termination to Complainants. PPL Electric Exhibit No. 2.

## DISCUSSION

### Legal Standards

Under Section 332(a) of the Public Utility Code, 66 Pa. C.S. § 332(a), “the proponent of a rule or order has the burden of proof.” It is well-established that “[a] litigant’s burden of proof before administrative tribunals as well as before most civil proceedings is satisfied by establishing a preponderance of evidence which is substantial and legally credible.” *Samuel J. Lansberry, Inc. v. Pa. Pub. Util. Comm’n*, 578 A.2d 600, 602 (Pa. Cmwlth. 1990). The preponderance of evidence standard requires proof by a greater weight of the evidence. *Commonwealth v. Williams*, 557 Pa. 207, 732 A.2d 1167 (1999). This standard is satisfied by presenting evidence more convincing, by even the smallest amount, than that presented by another party. *Brown v. Commonwealth*, 940 A.2d 610, 614 n.14 (Pa. Cmwlth. 2008).

If the party seeking a rule or order from the Commission sets forth a *prima facie* case, then the burden shifts to the opponent. *MacDonald v. Pa. R.R. Co.*, 348 Pa. 558, 36 A.2d 492 (1944). Establishing a *prima facie* case requires either evidence sufficient to make a finding of fact permissible or evidence to create a presumption against an opponent which, if not met, results in an obligatory decision for the proponent. Once a *prima facie* case has been established, if contrary evidence is not presented, there is no requirement that the party seeking a rule or order from the Commission must produce additional evidence to sustain its burden of proof. *See Replogle v. Pa. Elec. Co.*, 54 Pa. PUC 528, 1980 Pa. PUC LEXIS 20 (Order entered Oct. 9, 1980); *see also Application of Pennsylvania-American Water Co. for Approval of the Right To*

*Offer, Render, Furnish or Supply Water Serv. to the Pub. in Additional Portions Of Mahoning Twp., Lawrence County, Pa.*, Docket No. A-212285F0148, 2008 Pa. PUC LEXIS 874 (Order entered Oct. 29, 2008).<sup>3</sup>

In addition, a person does not sustain his or her burden of proof in an electric and magnetic field exposure case when the record evidence, “taken as a whole, leads to the ultimate finding and conclusion that the scientific studies at present are inconclusive.” *Letter of Notification of Phila. Elec. Co. 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, at \*210-11 (June 29, 1992) (Initial Decision) (“*Woodbourne-Heaton*”). Rather, the person must demonstrate by a preponderance of the evidence that such exposure actually causes adverse health effects. *Id.* at \*211. Specifically, in AMI meter-related matters, the Commission has held that “[t]he Complainant will have the burden of proof during the proceeding to demonstrate, by a preponderance of the evidence, that [the utility] is responsible or accountable for the problem described in the Complaint.” *Kreider v. PECO Energy Co.*, Docket No. P-2015-2495064, p. 18 (Order entered Sept. 3, 2015); *see also Romeo v. Pa. Pub. Util. Comm’n*, 154 A.3d 422, 429 (Pa. Cmwlth. 2017) (finding that the smart meter complainant should have a hearing to try to prove his claim through “the testimony of others as well as other evidence that goes to that issue”).

Section 701 of the Public Utility Code provides that “any person . . . having an interest in the subject matter . . . may complain in writing, setting forth any act or thing done or omitted to be done by any public utility in violation, or claimed violation, of any law which the commission has jurisdiction to administer, or of any regulation or order of the commission.” 66

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<sup>3</sup> In addition, any finding of fact necessary to support an adjudication of the Commission must be based upon substantial evidence. *Met-Ed Indus. Users Grp. v. Pa. Pub. Util. Comm’n*, 960 A.2d 189, 193 n.2 (Pa. Cmwlth. 2008) (citing 2 Pa.C.S. § 704). Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. *Borough of E. McKeesport v. Special/Temporary Civil Serv. Comm’n*, 942 A.2d 274, 281 n.9 (Pa. Cmwlth. 2008) (citation omitted). Although substantial evidence must be “more than a scintilla and must do more than create a suspicion of the existence of the fact to be established,” *Kyu Son Yi v. State Bd. of Veterinary Med.*, 960 A.2d 864, 874 (Pa. Cmwlth. 2008) (citation omitted), the “presence of conflicting evidence in the record does not mean that substantial evidence is lacking.” *Allied Mech. and Elec., Inc. v. Pa. Prevailing Wage Appeals Bd.*, 923 A.2d 1220, 1228 (Pa. Cmwlth. 2007) (citation omitted).

Pa. C.S. § 701. Therefore, a complainant must generally demonstrate that the public utility violated the Public Utility Code or a Commission regulation or order.

Section 1501 of the Public Utility Code states, in pertinent part, that:

Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service and facilities, and shall make all such repairs, changes, alterations, substitutions, extensions, and improvements in or to such service and facilities as shall be necessary or proper for the accommodation, convenience, and safety of its patrons, employees, and the public. Such service also shall be reasonably continuous and without unreasonable interruptions or delay. Such service and facilities shall be in conformity with the regulations and orders of the commission. Subject to the provisions of this part and the regulations or orders of the commission, every public utility may have reasonable rules and regulations governing the conditions under which it shall be required to render service. . .

66 Pa. C.S. § 1501. The Commission has exclusive jurisdiction to adjudicate “issues involving the reasonableness, adequacy, and sufficiency” of a public utility’s facilities and services. *See Elkin v. Bell Telephone Co. of Pa.*, 420 A.2d 371, 374 (Pa. 1980) (citations omitted).

When presented with a challenge to an AMI meter installation, the Commission has pronounced that “[t]he ALJ’s role . . . will be to determine based on the record in this particular case, whether there is sufficient evidence to support a finding that the Complainant was adversely affected by the smart meter or whether [the utility’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 Co.*, Docket No. P-2015-2495064 at 23 (Order entered Jan. 28, 2016) (citing *Woodbourne-Heaton*, 1992 Pa. PUC Lexis 160, at \*12-13). *Frompovich v. PECO Energy Co.*, Docket No. C-2015-2474602 (Opinion and Order entered May 3, 2018 at 10).

## Health and Safety Concerns

Complainants wish to maintain the current meter on their property at 2610 Gateway Drive, Harrisburg with continued electric service and no additional fees or penalties. Tr. 8-10. I infer from the Complaint and Complainants' testimony and exhibit (Notice) that they claim to have medical reasons and medical opt-out conditions including: cancer, EHS, IEI, Fibromyalgia, CFS, neuropathies and chronic diseases, all of which they allege would be exacerbated by an AMI meter. Complaint at Par. 4, Tr. 6-10, C Exhibit No. 1. Complainants offered no evidence other than their assertion that they suffer from these medical conditions.

Conversely, PPL contends radiofrequency fields are part of the lower energy, non-ionizing portion of the electromagnetic spectrum, which consists of lower frequency signals that do not have enough energy to break chemical bonds in cells or DNA. PPL Electric Statement No. 1 at 5-6. PPL contends RF fields come from many sources in our everyday environments, including AM/FM radio, television broadcast towers, cell phones and their communications networks, portable phones, garage door openers and wi-fi networks. PPL Electric Statement No. 1 at 5-6, 13-17, PPL Electric Exhibit CD1.

## Disposition

The assertions of Complainants that they suffer from EHS, cancer, IEI, CFS, fibromyalgia, neuropathies and chronic diseases that will become exacerbated by radiofrequency fields emitted by an AMI meter are bald assertions, which do not constitute evidence.

*Pennsylvania Bureau of Corrections v. City of Pittsburgh*, 532 A.2d. 12 (Pa. 1987).

Even if there was sufficient evidence to find Complainants suffered from these medical conditions, there is insufficient evidence to show RF fields emitted from an AMI meter will exacerbate such medical conditions. I am persuaded by the credible testimony of Dr. Davis, who testified the levels of RF fields from AMI meters are 98,000 times lower than the RF exposure safety limits established by the FCC. PPL Electric Statement No. 1 at 12, PPL Electric Exhibit CD2. These levels are well below the standard and the RF signals are of a short

duration, occurring for a total of 84 seconds over a 24-hour period. PPL Electric Statement No. 1 at 7. Additionally, RF fields from television towers in the Harrisburg area are 36.6 times higher than RF signals from an AMI meter attached to 2610 Gateway Drive, Harrisburg, would be. Thus, the background level of RF fields weighs in favor of a finding that an AMI RF mesh meter would not exacerbate cancer, EMH, IEI, fibromyalgia or other chronic disease. PPL Electric Statement No. 1 at 14, PPL Electric Exhibit CD-5.

I am also persuaded by the credible testimony of Dr. Israel, who testified he examined scientific studies and opined RF fields have no adverse effects on genetics, fertility, reproduction, growth or development in animals exposed to RF fields. PPL Electric Statement No. 2 at 8-9.

In forming his medical opinion, Dr. Israel relied upon studies from the United Kingdom Health Protection Agency (2012), the Royal Society of Canada (2013), the New Zealand Ministry of Health (2015), and the European Commission's Scientific Committee on Emerging and Newly Identified Health Risks (2015). These entities concluded there is no reliable scientific evidence that exposure to RF fields causes claimed IEI symptoms. The World Health Organization has found that "no adverse health effects have been established as being caused by mobile phone use." PPL Electric Statement No. 2 at 10. There is little scientific evidence to support the idea of electromagnetic hypersensitivity. These findings from public health entities and expert panels show that the theory of IEI caused by exposure to RF fields has not been generally accepted in the medical community. PPL Electric Statement No. 2 at 10-12.

Dr. Israel also evaluated scientific research on RF fields and adverse health effects generally. He examined controlled animal laboratory studies, which provide a reliable basis for determining whether RF fields have the capability to cause or contribute to adverse health effects in animals, such as cancer or adverse effects on growth, development, or reproduction. PPL Electric Statement No. 2 at 9-13. These studies found no such adverse health effects. PPL Electric Statement No. 2 at 9-13. Dr. Israel further reported that the World Health Organization and a number of other public health authorities have concluded that the scientific

research on RF exposures from cell phone use, which are far higher than the RF from PPL's smart meters, has not shown that RF fields cause adverse health effects.

Overall, as an expert in medicine and medical research, particularly as related to RF fields and health, Dr. Israel found, based on his medical education, training and experience, and his evaluation of the scientific research, that to a reasonable degree of medical certainty there is no reliable medical basis to conclude that RF fields from the AMI meter intended to be used by PPL at the Zimmerman residence will cause, exacerbate or contribute to any adverse health effects. PPL Electric Statement No. 2 at 15.

### Fire Concerns

Complainants produced no evidence to show the AMI meter to be installed is unsafe or a fire hazard. Although PPL Witness Larson admitted there were two fires related to the installation of the Landis + Gyr 480 meter, that meter is a different type of meter for a commercial three phase system and involves k-based bolt-in meters, and a meter capable of reading electrical loads of 600 amperes. Tr. 41-43. These two incidents were due to installation and manufacturing problems with bolted busbar connections involving three phase service and a different model meter, Landis + Gyr class 480. Tr. 41-44. The Landis + Gyr Class 480 meter requires a higher level technician to install the meter to ensure proper placement. Tr. 44.

PPL selected the Landis + Gyr Focus AX meter for residential service as it met PPL's requirements on the overheating and thermal breakdowns, which are higher than the national standard. Tr. 35-38. The Landis + Gyr AMI meter meets all national standards, including those issued by the American National Standards Institute (ANSI) and is certified by Underwriters Laboratories. Tr. 34, 43-44. The Landis + Gyr AMI meter is similar to the model PECO Energy Company is deploying for residential service. Tr. 45. The meter to be deployed to the Zimmerman's property is the Landis + Gyr Focus AX meter. Tr. 44-46.

The Landis + Gyr Focus AX meters are not a fire hazard because they are equipped with software and mechanisms that better alert the Company if there is an issue with



overheating. Additionally, the Company has conducted substantial research and has taken many steps to prevent fires involving loose “jaws” at the customer’s meter base, which could cause the micro-arcing of electricity between the jaw and blade of the AMI meter. Tr. 35-44.

In the *Frompovich* case, *supra*, the Commission recognized PECO Energy Company did have an issue with the initial deployment of Sensus smart meters. The Commission held:

Specifically, as to the Complainant’s fire hazard claim, PECO satisfied its burden of production, or the burden of going forward with the evidence, to show that the brand of AMI to be installed at the Complainant’s home – the Landis + Gyr meter – does not present a fire hazard. PECO presented evidence in this case that previously there was a fire hazard problem with a particular brand of meter PECO had initially used in the AMI deployment. However, in approximately 2012, those meters were all removed and replaced with the Landis + Gyr Focus meters. PECO showed that since the installation of over 1.2 million of Landis + Gyr Focus meters, there have been no reports of fire incidents related to the meters. Tr. at 143. PECO showed that a Landis + Gyr meter would be installed at Ms. Frompovich’s home.

Additionally, we take judicial notice here that the fire hazard issue involving the prior brand of AMI meter was raised to our attention during PECO’s Smart Meter Phase II Plan proceeding at Docket No. M-2009-2123944, discussed *supra*, fn 3. In the Recommended Decision for that case, it was noted that PECO had experienced several meter events involving overheating during the Phase I deployment. PECO initiated corrective action including replacement of the installed smart meters with meters manufactured by a different contractor, Landis + Gyr. PECO had completed replacing the meters on or before January 18, 2013, the date PECO filed its Smart Meter Phase II Plan. *See* Phase II R.D. at 9.

Moreover, the Complainant did not present any competent evidence in this record to show that the Landis + Gyr brand of meters causes fires or otherwise presents a fire hazard. Therefore, we agree with the ALJ’s conclusion that the Complainant did not satisfy her burden of proving that the type of AMI meter to be installed at her home would constitute an unsafe fire hazard in violation of 66 Pa. C.S. § 1501.

*Frompovich* at 56-57.

PECO had an overheating issue with its initial deployment of Sensus AMI meters; however, these Sensus AMI meters were eventually removed by PECO and replaced with Landis + Gyr Focus AXR-SD meters, a similar make and model to the AX model PPL intends to install at the instant service property. *Id.* at 56, Tr. 35-44. I am persuaded by PPL Witness Larson who testified the communications systems between PECO and PPL will be different; however, the metrology (the system of measurement) between the meters currently being deployed in both service territories is the same. Tr. 45.

The Commission has already deemed it to be reasonable and not a fire hazard within the meaning of 66 Pa. C.S. § 1501 to allow another electric distribution company to install the Landis + Gyr Focus AXR-SD meter on residential dwellings within its service territory. Tr. 45. The Commission has held that since the installation of over 1.2 million Landis + Gyr Focus meters, there have been no reports of fire incidents related to the meters. *Frompovich* at 56-57. Similarly, there is no evidence to show PPL has had any fire incidents related to a similar make and model meter after deploying approximately 840,000 such meters. Tr. 37-38.

In the instant case, PPL showed that there is a heat alarm set within the meter software program, so when the temperature of the meter hits an established level, the Company is alerted of the issue. Tr. 35. Further, PPL takes 15-minute interval temperature readings from the meter, so it can track the meter's temperature and identify any current issues or problematic trends. Tr. 35-36. If the Company detects an issue with the meter's temperature, PPL will dispatch a technician to investigate. Tr. 36.

PPL is "randomly auditing" its installed meters. Tr. 43. PPL and/or its Agents are not currently routinely using equipment to test for insertion force on the jaws. Tr. 39. PPL and/or its Agents are taking pictures of the meters as they are removed and then also after the meter is replaced. PPL and/or its Agents are performing a visual inspection looking for gaps or pitting within jaws. Tr. 39-40.

Since there is evidence of some fires in the past due to micro-arcing from loose jaws per the testimony of Mr. Larson, (Tr. 36) and since PPL had two fire incidents involving the

Landis + Gyr 480 meter, I encourage PPL and/or its Agents (i.e. Grid One Solutions) to perform a statistically relevant sample audit on its past meter installations and going forward to perform certain customer meter base checks (if it is not already doing so) prior to setting any meters as an added precaution against fires caused by micro-arcing. I am taking judicial notice of ANSI/UL 414 (Safety Standards for Meter Sockets), which defines maximum allowable insertion force at Section 17; UL 2735, Standard for Electric Utility Meters, ANSI C12.7 American National Standard Requirements for Watthour Meter Sockets; ANSI Z535.4 Product Safety Signs and Labels, and ANSI C12.10, American National Standard for Electromechanical Watthour Meters. Also, I am taking judicial notice of a White Paper entitled TESCO Hot Socket Gap Research and the use of this data in the development of tools for the early detection and handling of dangerous field conditions. <http://www.tesco-advent.com/pdf/TESCO-hot-sockets-white-paper.pdf>. 52 Pa. Code § 5.40 (relating to official and judicial notice of fact). The article addresses the deployment of new AMI meters and the need for early detection devices and inspection processes to identify dangerous field conditions prior to catastrophic failure. The article recommends testing jaws for insertion force and replacing jaws with tested forces less than a threshold of 3-5 pounds of force per jaw. I am not directing PPL to use any particular equipment as Mr. Larson had some misgivings about “new types of devices that lack calibration standards.” Tr. 40. However, I have some recommendations for the Company’s consideration.

Based upon these above-standards and White Paper article, I recommend PPL and its Agents consult with other peer EDCs to determine and adopt the best practices regarding customer meter base inspections. At a minimum, customer meter base checks should include the following tests. First, verify conductor terminals are tight. Second, identify and address any defects during installation, i.e., loose or broken socket jaws, significantly corroded and rusty socket jaws, and compromised meters that leak or are degraded by rodent or insect infestation. Third, check that the common neutral is common to all exposed metal surface. Fourth, employ a jaw tension test to ensure proper socket jaw tension force prior to connecting a meter into a customer’s meter base. Fifth, replace a customer’s equipment at PPL’s cost if the customer’s meter base socket jaws have an unsafe low socket jaw retention force. A hot socket gap indicator device may be used for such tests and socket safety clips(s) might be used to temporarily restore a safe retention force on socket jaw(s) until the customer’s meter base can be

replaced. Load side socket jaws should be tested to ensure there is no voltage or continuity indicated. In summary, PPL should perform tests that serve to minimize any potential fires due to micro-arcing.

### Privacy Concerns

The Complainants also have raised privacy issues with the new AMI meter, specifically they seek an injunction from “trespassing technology.” C Exhibit No. 1, Tr. 8. Specifically, Complainants believe the smart meter has “technology with capabilities of a mini microwave frequencies and/or transmitting detailed data of in home activities relating to consumption” and is a “trespassing technology” on their property. Tr. 6-10. C Exhibit 1.

I am persuaded to find credible the testimony of PPL Witness Hennegan, who testified that the meter does not collect “detailed data of in-home activities” relating to electric, water and gas usage as alleged by Complainants. The only electric usage data that the Company collects is for the entire premises. Tr. 19-21. As part of its Smart Meter Plan proceeding, PPL filed a detailed AMI Customer Privacy Policy, which sets forth the data PPL will collect through the new smart meter, the steps the Company will take to protect the data, and the ways in which PPL will use the data. Tr. 18-19, PPL Electric Exhibit No. 5. Consistent with that policy, the Company claims that it will collect data on the total amount of electricity used at the premises as well as significant event information, such as outages, voltage, heat alarms, and meter tampering alerts. Tr. 18-20; PPL Electric Exhibit No. 5, Section 1.2.

PPL has taken steps to protect data from public disclosure including: firewalls, encryption, digital signatures, authentication and access controls. Tr. 19. These steps are consistent with recognized industry security standards, including those issued by the National Institute of Standards and Technology. Tr. 19. For these reasons, I find in favor of PPL on the privacy issue.

## Termination of Service

Complainants claim PPL has no right to terminate their electric service if they deny PPL access to replace their existing meter. C Exhibit No. 1, Tr. 8. PPL has not yet issued a notice of termination of service. PPL Electric Exhibit No. 2. However, if the Commission denies and dismisses this Complaint, PPL will have a legal right to initiate termination procedures if it is denied reasonable access to the Company's meter per its tariff, the Commission's Regulations, and Chapter 14 of the Public Utility Code. *See* 66 Pa. C.S. § 1406(a)(4); 52 Pa. Code § 56.81(3). PPL Electric Exhibits Nos. 6, and 7.

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

Rule 10(B)(2)(g) of PPL Electric's tariff states that the Company is authorized to terminate service when: (1) its representatives cannot gain admittance or are refused admittance to the premises for the purpose of reading meters, making repairs, making inspections, or removing Company property; (2) the customer interferes with Company representatives in the performance of their duties; or (3) the meters or other equipment of the Company are not accessible during reasonable hours. PPL Electric Exhibit No. 7 at 2, Tr. 23, 46. Similarly, Rule 2F of PPL's Tariff, Supplement No. 42, Electric Pa. PUC No. 201 provides that PPL "shall have access at all reasonable hours to customer's premises, without charge for the purpose of inspecting, installations, installing meters, reading, testing, removing, replacing, or otherwise maintaining or disposing of any of Company's property." PPL Electric Exhibit No. 6, Tr. 21, 46.

It is well-settled that where a customer refuses a utility access to its meter, the utility may terminate service after required notice is provided. The Commission's Regulations, at 52 Pa. Code § 56.81(3), provide, in pertinent part, the following:

A public utility may notify a customer and terminate service provided to a customer after notice as provided in §§ 56.91-56.100 (relating to notice procedures prior to termination) for any of the following actions by the customer . . . Failure to permit access to meters, service connections or other property of the public utility for the purpose of replacement, maintenance, repair or meter reading.

52 Pa. Code § 56.81(3). Additionally, the Commission held in *Frompovich*,

Based on our adjudication of Ms. Frompovich's claims herein, we find that PECO's proposed termination of electric service to the Complainant's service address for the Complainant's refusal to permit PECO access to its meter, so that PECO's employees can replace the existing AMR meter with an AMI meter, to be consistent with and authorized under Section 1501 of the Code, the Commission's Regulations at 52 Pa. Code § 56.81(3), and the Company's Tariff. We remind PECO, however, that prior to taking any steps related to such termination of service, it must adhere to the applicable provisions of the Commission's Regulations relating to Notice Procedures Prior to Termination at 52 Pa. Code §§ 56.91-100. In the applicable written notice(s) required under the Commission's Regulations, PECO is requested to inform or instruct Ms. Frompovich as to how she may avoid termination related to the meter.

*Frompovich* at 59. Accordingly, given this *stare decisis* precedent, I find in favor of PPL on this issue.

#### Opting Out of Smart Meter Installation

The Commission has ruled that there is no provision in the Code, the Commission's Regulations or Orders that allows a PECO customer to "opt-out" of smart meter installation. 66 Pa.C.S. § 2807(f); *See Frompovich v. PECO Energy Co.*, Docket No. C-2015-2474602, (Opinion and Order entered May 3, 2018); *Povacz v. PECO Energy Company*, Docket No. C-2012-2317176 (Order adopted January 24, 2013 at 10); *Povacz v. PECO Energy Company*, Docket No. C-2015-2475023 (ALJ Heep Initial Decision dated January 26, 2018). Moreover, the Commonwealth Court has held that federal law does not preempt the Commission's interpretation. *See Romeo v. Pa. Pub. Util. Cmm'n*, 154 A.3d 422 (Pa. Cmwltth.

2017). The Commonwealth Court did not expressly address whether Mr. Romeo could opt-out of a smart meter installation. The Court held that Mr. Romeo's claim that smart meters cause safety and fire hazards and have a negative health impact is not legally insufficient pursuant to 66 Pa. C.S. § 1501, which requires utilities to maintain adequate, efficient, safe and reasonable service and facilities for their customers. *Id.*

I infer from the *Romeo* decision, that it is legally sufficient to plead the injunctive relief requested in the instant case and claim that smart meters are generally unsafe, unhealthy, and the installation of them is unreasonable service in violation of 66 Pa. C.S. § 1501. However, the Commonwealth Court did not expressly address the opt-in versus opt-out argument. Although Complainants similarly situated to Mr. Romeo are entitled to an evidentiary hearing, there is still horizontal *stare decisis* precedent at the Commission level to hold there is no opt-out provision in the current law in Pennsylvania. Accordingly, given this *stare decisis* precedent, I find in favor of PPL on this issue.

### CONCLUSION

For all of these aforementioned reasons, the complaint will be dismissed for failure to prove by a preponderance of evidence that the installation of this smart meter constitutes unsafe or unreasonable service under 66 Pa. C.S. § 1501. Although the Complainants are genuine in their concerns, the Commission's decisions cited above are controlling.

### CONCLUSIONS OF LAW

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

2. PPL Electric Utilities Corporation's smart meter procurement and installation plan, which was approved by Commission Order in the case of *Petition of PPL Electric Utilities Corp. for Approval of Its Smart Meter Technology Procurement and*

*Installation Plan*, Docket No. M-2014-2430781, p. 24 (Order Entered Sept. 3, 2015) does not contain a provision for customers to opt out of smart meter installation.

3. Neither Act 129 of 2008 nor any Commission or Commonwealth Court orders expressly provide for the ability of customers to opt out of having a smart meter installed.

4. Under Section 332(a) of the Pennsylvania Public Utility Code, the proponent of a rule or order has the burden of proof. 66 Pa. C.S. § 332(a). It is well established that “[a] litigant’s burden of proof before administrative tribunals as well as before most civil proceedings is satisfied by establishing a preponderance of evidence which is substantial and legally credible.” *Samuel J. Lansberry, Inc. v. Pa. Pub. Util. Comm’n*, 578 A.2d 600, 602 (Pa. Cmwlth. 1990).

5. The preponderance of evidence standard requires proof by a greater weight of the evidence. *Commonwealth v. Williams*, 557 Pa. 207, 732 A.2d 1167 (1999). This standard is satisfied by presenting evidence that makes the existence of a contested fact more likely than its nonexistence. *Brown v. Commonwealth*, 940 A.2d 610, 614 n.14 (Pa. Cmwlth. 2008) (citation omitted).

6. A person does not sustain his or her burden of proof in an electric and magnetic field exposure case when the record evidence, “taken as a whole, leads to the ultimate finding and conclusion that the scientific studies at present are inconclusive”; rather, the person must demonstrate by a preponderance of the evidence that such exposure actually causes adverse health effects. *Letter of Notification of Phila. Elec. Co. 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, at \*210-11 (June 29, 1992) (Initial Decision) .

7. In AMI meter-related matters, the Commission has held that “[t]he Complainant will have the burden of proof during the proceeding to demonstrate, by a preponderance of the evidence, that [the utility] is responsible or accountable for the problem



described in the Complaint.” *Kreider v. PECO Energy Co.*, Docket No. P-2015-2495064, p. 18 (Order entered Sept. 3, 2015).

8. Section 701 of the Public Utility Code provides that “any person . . . having an interest in the subject matter . . . may complain in writing, setting forth any act or thing done or omitted to be done by any public utility in violation, or claimed violation, of any law which the commission has jurisdiction to administer, or of any regulation or order of the commission.” 66 Pa. C.S. § 701.

9. Complainants have failed to sustain their burden of proof that Respondent violated Section 1501 of the Public Utility Code. 66 Pa. C.S. § 1501.

10. The Commission has exclusive jurisdiction to adjudicate “issues involving the reasonableness, adequacy, and sufficiency” of a public utility’s facilities and services. See *Elkin v. Bell Telephone Co. of Pa.*, 420 A.2d 371, 374 (Pa. 1980) (citations omitted).

11. When presented with a challenge to an AMI meter installation, the Commission has pronounced that “[t]he ALJ’s role . . . will be to determine based on the record in this particular case, whether there is sufficient evidence to support a finding that the Complainant was adversely affected by the smart meter or whether [the utility’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 Co.*, Docket No. P-2015-2495064, p. 23 (Order entered Jan. 28, 2016) (citing *Woodbourne-Heaton*, 1992 Pa. PUC Lexis 160, at \*12-13).

12. Complainants have failed to sustain their burden of proof that installing the new AMI meter would violate the Public Utility Code or any Commission regulation or order. See 66 Pa. C.S. § 332(a), 701.

13. PPL is legally required to install the RF Mesh meter on the Complainants’ property by Act 129 and Commission orders. See 66 Pa. C.S. § 2807(f); Smart Meter

Procurement and Installation, Docket No. M-2009-2092655, pp. 9, 14 (Order entered June 24, 2009).

14. Nothing in Act 129 permits a customer to “opt-out” of a smart meter installation. See, e.g., *Starr v. PECO Energy Co.*, Docket No. C-2015-2516061, p. 11 (Order Entered Sept. 1, 2016).

15. Under the Company’s Commission-approved Smart Meter Plan, PPL must replace all of the PLC meters with the RF Mesh meters, which the Commission declared as meeting all of the requirements of Act 129 and the Commission’s Smart Meter Implementation Order. See *Petition of PPL Electric Utilities Corp. for Approval of Its Smart Meter Technology Procurement and Installation Plan*, Docket No. M-2014-2430781, p. 24 (Order Entered Sept. 3, 2015).

16. If the Company does not install the new RF Mesh meter on the Complainants’ residence in accordance with the Commission-approved deployment schedule, PPL may violate the Commission’s 2010 Smart Meter Order, 2015 Smart Meter Order, and Smart Meter Implementation Order.

17. The Complainants have failed to demonstrate that the new AMI meter causes, contributes to, or exacerbates any adverse health effect.

18. The Complainants have failed to sustain their burden of proof that installing the new AMI meter would constitute unsafe or unreasonable service in violation of 66 Pa. C.S. § 1501.

19. PPL Electric is permitted under Rule 2F of its Commission-approved tariff to access the Complainants’ property for the purpose of installing the new AMI meter. PPL Electric Exhibit No. 6.

20. Public utilities' tariffs have the full force and effect of law and are binding on the utilities and their customers. *See PPL Elec. Utils. Corp. v. Pa. Pub. Util. Comm'n*, 912 A.2d 386, 402 (Pa. Cmwlth. 2006) (citing 66 Pa. C.S. § 1303 and *Pa. Elec. Co. v. Pa. Pub. Util. Comm'n*, 663 A.2d 281, 284 (Pa. Cmwlth. 1995)).

21. The Public Utility Code, the Commission's regulations, and PPL's tariff expressly permit the Company to terminate service if a customer fails to provide the Company with access to the property in order to replace the meter. *See* 66 Pa. C.S. § 1406(a)(4); 52 Pa. Code § 56.81(3); PPL Electric Exhibit No. 7.

ORDER

THEREFORE,

IT IS ORDERED:

1. That the Formal Complaint filed by Debra S. and Bruce K. Zimmerman against PPL Electric Utilities Corporation at Docket No. C-2017-2615038 is denied and dismissed.
2. That the docket in this proceeding be marked closed.

Date: August 16, 2018

\_\_\_\_\_/s/  
Elizabeth H. Barnes  
Administrative Law Judge