

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

John Codella	:	
	:	
v.	:	C-2019-3010437
	:	
PPL Electric Utilities Corporation	:	

INITIAL DECISION

Before
Joel H. Cheskis
Deputy Chief Administrative Law Judge

INTRODUCTION

This decision denies a formal complaint filed by a customer of an electric distribution company who averred that the radio frequency emissions from his AMI or “smart” meter have caused him adverse health effects and therefore the smart meter should be removed and his analog meter reinstalled. The complainant failed to satisfy his burden of demonstrating that the company violated the Public Utility Code, a Commission order or regulation or a Commission-approved tariff of the company by installing the smart meter.

HISTORY OF THE PROCEEDING

On June 3, 2019, John Codella filed a formal complaint with the Pennsylvania Public Utility Commission (Commission) against PPL Electric Utilities Corporation (PPL), docket number C-2019-3010437. In his complaint, Mr. Codella averred that he has been experiencing fatigue, insomnia, headaches and hearing a high-pitched sound ever since a smart meter was installed at his residence and he is concerned that radio frequency (RF) radiation exposure can lead to cancer. Mr. Codella averred that he is seeing a doctor for his symptoms and requested that his old meter be put back on. Mr. Codella attached to his complaint a letter from a doctor regarding his request to have

the smart meter removed.

On July 1, 2019, PPL filed an answer to Mr. Codella's complaint admitting or denying the various averments Mr. Codella made in his complaint. PPL admitted it installed a new automated metering infrastructure (AMI) meter at Mr. Codella's service address but denied that the meter poses any health hazards. PPL further added, among other things, that it is legally required to install new AMI meters by the Public Utility Code, Commission orders and the company's smart meter plan and that none of those state that a customer can opt out of a smart meter installation. PPL denied that Mr. Codella is entitled to the relief he requested and requested that the complaint be dismissed in its entirety and with prejudice.

On July 8, 2019, the Commission issued a hearing notice scheduling an initial call-in telephonic hearing for Tuesday, October 29, 2019 and assigning me as the presiding officer. A prehearing order dated July 9, 2019 was issued setting forth various procedural rules that would govern that hearing.

On September 3, 2019, PPL filed a motion to compel responses to discovery propounded on Mr. Codella Set I. In its motion, which was accompanied by a notice to plead, PPL argued that Mr. Codella has not provided complete responses to interrogatories 3, 4, 5 and 6 in Set I. Mr. Codella did not file an answer to PPL's motion to compel. PPL's motion to compel was denied via order dated September 13, 2019.

The hearing convened on October 29, 2019, as scheduled. Mr. Codella appeared *pro se* and provided oral testimony. Devin Ryan, Esquire and Curtis Renner, Esquire appeared on behalf of PPL and presented four witness who each presented pre-served testimony and accompanying exhibits that were admitted into the record. A transcript of 74 pages was created.

Prior to the hearing, Mr. Codella preserved 13 exhibits, but it was discovered during the hearing that he did not serve all of those exhibits on PPL. As a result, a discussion was held during the hearing wherein the parties agreed that PPL would be sent a copy of all of Mr. Codella's exhibits and have 20 days after the hearing to state any objection to the admission of those exhibits into the record. To the extent that PPL had objections, Mr. Codella would then have 10 days to file

a response to those objections and the objections would be resolved prior to the issuance of the decision.

On November 18, 2019, PPL filed objections to the admission of Mr. Codella's hearing exhibits. PPL argued that Mr. Codella's exhibits should be excluded because they are hearsay and also because they are irrelevant, lack authenticity and are inherently unreliable. Mr. Codella did not file a response to PPL's objections. By order dated December 5, 2019, PPL's objections were denied.

The record in this case closed on December 5, 2019 when the order denying PPL's objections to the admission of Mr. Codella's hearing exhibits was issued. For the reasons discussed below, Mr. Codella's complaint will be denied.

FINDINGS OF FACT

1. The Complainant in this case is John Codella.
2. The Respondent in this case is PPL Electric Utilities Corporation.
3. The service address is 107 Cindy Court, Newfoundland, Pennsylvania.
4. Codella Exhibit Number 1 is a one-page letter from Mr. Codella to the presiding officer wherein Mr. Codella explains the reason for his complaint, i.e., that he believes he has been experiencing health problems since his smart meter was installed, and discusses his various reasons why he believes that his health issues are related to the installation of his smart meter. Codella Ex. No. 1.; Tr. 16.
5. Codella Exhibit Number 2 is a one-page letter entitled "My Finding #1" claiming that smart meters are not a legal requirement and purporting various side effects of smart meters. Codella Ex. No. 2; Tr. 16.
6. Codella Exhibit Number 3 is a one-page letter entitled "My Findings #2"

raising additional averments that smart meters cause health effects and discussing “a NASA technical report.” Codella Ex. No. 3; Tr. 16.

7. Codella Exhibit Number 4 is a one-page letter entitled “My Findings #3” wherein Mr. Codella avers issues regarding privacy and provides answers to discovery previously served on him by PPL. Codella Ex. No. 4; Tr. 16.

8. Codella Exhibit Number 5 is a one-page document with a chart purporting to compare smart meter wireless radiation to items such as cell towers, wi-fi exposure and other items and raises additional averments regarding health issues purportedly caused by smart meters. Codella Ex. No. 5; Tr. 17.

9. Codella Exhibit Number 6 is a one-page document identifying countries and states that have banned smart meters or taken precautions regarding their wireless exposure stating in part that smart meters pose security and other risks. Codella Ex. No. 6; Tr. 17.

10. Codella Exhibit Number 7 is a letter from Martha Turnberg, M.D., dated May 21, 2019, and addressed to “To whom it may concern” that discusses medical issues related to the smart meter. Codella Ex. No. 7; Tr. 17.

11. Codella Exhibit Number 8 is two videos made by Mr. Codella of Mr. Codella attempting to measure the RF emissions from his analog meter and then his smart meter by waiving a detector around the meters. Codella Ex. No. 8; Tr. 17.

12. Codella Exhibit Number 1-R is a one-page letter from Mr. Codella to Devin Ryan, Esquire, counsel for PPL, regarding PPL’s objections to Mr. Codella’s discovery and that the smart meter in question is not being referred to by its appropriate name. Codella Ex. No. 1-R; Tr. 18.

13. Codella Exhibit Number 2-R is a one-page response of Mr. Codella to the written direct testimony of PPL witness Christopher Davis, contesting the testimony that smart meters do not produce RF fields all the time and that smart meters do not produce “dirty

electricity.” Codella Ex. No. 2-R; Tr. 18.

14. Codella Exhibit Number 3-R is a two-page response of Mr. Codella to the pre-served written testimony of PPL witness Mark Israel contesting Dr. Israel’s assertion that smart meters do not cause adverse health effects by relying on an article from the American Cancer Society and a study from Ronald Powell, M.D., a retired career government scientist. Codella Ex. No. 3-R; Tr. 18.

15. Codella Exhibit Number 4-R is a one-page document written by Mr. Codella responding to the pre-served written testimony of PPL witness Kevin Durkin regarding security issues related to smart meters. Codella Ex. No. 4-R; Tr. 19.

16. Codella Exhibit Number 5-R is a two-page document written by Mr. Codella as a response to the pre-served written testimony filed by PPL witness Donald Vinciguerra wherein Mr. Codella addresses the fire safety issues related to smart meters and whether smart meters can be hacked. Codella Ex. No. 5-R; Tr. 19.

17. Mr. Codella does not have any advanced education or work experience in the medical field or engineering field. Tr. 23.

18. Mr. Codella takes steps to limit his exposure to radio frequencies. Tr. 23-24.

19. Mr. Codella purchased an Electromagnetic Radiation Detector DT-130 from the internet for approximately \$170. Tr. 25.

20. It is not possible to have electric power delivered to a residence and be used in the residence without the creation of power frequency electromagnetic fields because the currents that deliver power to a home themselves carry with them the production of electric and magnetic fields. Tr. 48.

21. The meter through which the electric current passes on the outside of the home itself does not produce electric and magnetic fields. Tr. 48.

22. The smart meter transmits information back to PPL using radio frequency fields. Tr. 48-49.

23. PPL uses sophisticated, expensive equipment to capture the radio frequency emissions from smart meters. Tr. 49.

24. Christopher Davis is a scientific researcher and teacher in Physics and Electrical Engineering and is an endowed professor at the University of Maryland. PPL St. 1 at 1.

25. Dr. Davis earned a Ph.D. in Physics at the University of Manchester. PPL St. 1 at 1.

26. Dr. Davis has authored 255 articles published in peer-reviewed scientific journals, two books and 324 papers presented at scientific conferences. PPL St. 1 at 2.

27. Dr. Davis has conducted a substantial amount of research on RF fields of the type produced by the AMI meters being used by PPL and has served on scientific committees that evaluate research related to electromagnetic fields. PPL St. 1 at 3.

28. An RF field is an area around an object where an electric and magnetic component can be detected. PPL St. 1 at 5.

29. PPL Exhibit CD-1 is a representation of the electromagnetic spectrum which shows sources of different types of electromagnetic fields along the spectrum. PPL Exh. CD-1.

30. Radiation is a scientific term that describes how energy travels from a source, i.e., it radiates out from the source, like when a stone is tossed in a pond. PPL St. 1 at 6.

31. The frequency range for RF fields is from 3 kilohertz (kHz) to 300 gigahertz (GHz) and microwaves are part of the RF range between 300 MHz and 3 GHz. PPL St. 1 at 6.

32. The AMI meters being used by PPL send low level radio signals and produce

RF fields which are a natural result of sending radio signals but the RF fields are only produced when the meter sends a radio signal. PPL St. 1 at 7.

33. The total daily time of RF signaling from AMI meters used by PPL is 84 seconds over the course of 24 hours with individual signal durations of only 46 to 63 milliseconds. PPL St. 1 at 7.

34. When the AMI meter is not sending an RF signal, the RF signal does not remain near the meter. PPL St. 1 at 8.

35. RF fields do not have the energy to break chemical bonds in DNA and therefore are non-ionizing. PPL St 1 at 8.

36. Dirty electricity is a non-scientific term that sometimes is used to refer to electrical characteristics that can be found in household wiring. PPL St. 1 at 8.

37. AMI meters do not generate dirty electricity. PPL St. 1 at 8-9.

38. The Federal Communications Commission (FCC) has determined safe maximum permissible exposure limits for non-portable devices, including smart meters, which transmit RF signals. PPL St. 1 at 9-10.

39. There is no reliable scientific basis for a mechanism by which RF fields could cause effects in the human body other than through heating, i.e., a thermal effect, but the RF fields from the AMI meter being used by PPL are too low to cause a heating effect. PPL St. 1 at 12-14.

40. PPL Exhibits CD-2 and CD-3 are charts comparing an average RF field level from a PPL AMI meter to the FCC RF exposure limit. PPL Exh. CD-2 and CD-3.

41. The RF levels from the AMI meters being used by PPL comply with the applicable FCC RF exposure limit. PPL St. 1 at 13; PPL Exh. CD-2.

42. The peak RF field level from the AMI meters being used by PPL is 95 times

lower than the FCC exposure limit for 30-minute average exposure. PPL St. 1 at 13; PPL Exh. CD-3.

43. The 30-minute RF average exposures shown in PPL Exhibit CD-2 are 98,000 times lower than the FCC limits. PPL St 1 at 13; PPL Exh. CD-3.

44. PPL Exhibit CD-4 shows the RF fields from a number of sources that people are commonly exposed to. PPL St. 1 at 14; PPL Exh. CD-4.

45. There is nothing unusual about the RF fields from the AMI meters being used by PPL but are the same types of RF fields that are used for radio communication in many common everyday devices. PPL St. 1 at 14; PPL Exh. CD-4.

46. PPL Exhibit CD-5 shows that RF fields at three meters from the AMI meter being used by PPL are 18.8 times smaller than the background RF exposure from the UHF television broadcasting at the Codella residence in Newfoundland, PA. PPL St. 1 at 15; PPL Exh. CD-5.

47. Mark Israel is a medical doctor, researcher, the Executive Director of an international non-profit medical research foundation and Professor Emeritus of Medicine, Pediatrics and Molecular and Systems Biology at Dartmouth Medical School. PPL St. 2 at 1.

48. Dr. Israel has extensive experience as a medical doctor. PPL St. 2 at 2.

49. Dr. Israel has been conducting medical research for 40 years in a variety of areas, including systems biology, biochemistry, cell biology, cancer, molecular biology and molecular genetics. PPL St. 2 at 3.

50. Dr. Israel has published 250 medical research studies in peer-reviewed scientific journals and has reviewed scientific literature on topics on which he does not personally conduct research. PPL St. 2 at 3-4.

51. Dr. Israel's evaluation of the body of scientific research found no reliable medical basis to conclude that non-thermal RF fields cause or contribute to the development of any diseases or illnesses, including the effects alleged by Mr. Codella. PPL St. 2 at 8-11.

52. Neither the International Agency for Research on Cancer nor the World Health Organization (WHO) conclude that the RF fields from smart meters cause cancer. PPL St. 2 at 12.

53. The symptoms of headaches, dizziness, body aches, buzzing in the ears, eye floaters, difficulty concentrating, memory loss, sleep disturbance, nausea, abdominal issues, palpitations, nervousness, fatigue and lethargy are known as Idiopathic Environmental Intolerance (IEI) and are not caused by exposure to RF fields. PPL St. 2 at 13-14.

54. It is not generally accepted in the medical community that IEI and the variety of symptoms attributed to IEI are caused by exposure to RF fields. PPL St. 2 at 15; PPL Exh. MI-3.

55. 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 the development of illness or disease. PPL St. 2 at 19.

56. Kevin Durkin is a project manager on PPL's meter replacement project and is responsible for interacting with PPL customers who have specific meter replacement questions or concerns. PPL St. 3 at 1.

57. PPL Exhibit KD-1 is PPL's account contact history for Mr. Codella's account. PPL Exh. KD-1; PPL St 3 at 4-5.

58. PPL Exhibit KD-2 is PPL's AMI program communication plan. PPL Exh. KD-2; PPL St 3 at 5-6.

59. PPL Exhibit KD-3 is PPL's AMI customer privacy policy. PPL Exh. KD-3; PPL St 3 at 6-8.

60. PPL's smart meters collect usage data and significant event information, such as outages, voltage, heat alarms and meter tampering but does not collect any personally identifiable information such as customer's name, account number, phone number, address or appliances. PPL St. 3 at 7.

61. The AMI data transmitted over the AMI network is secured from intrusion by third parties through firewalls, encryption, digital signatures, authentication and access controls. PPL St. 3 at 7.

62. PPL Exhibit KD-4 is Rule 2(F) of PPL's tariff regarding access to meters. PPL Exh. KD-4.

63. PPL Exhibit KD-5 is Rule 10(B)(2)(g) of PPL's tariff regarding disconnection and reconnection of service. PPL Exh. KD-5.

64. PPL is permitted by tariff Rules 2(F) and 10(B)(2)(g) to issue a termination notice if the company is denied reasonable access to its meter. PPL St 3 at 9; PPL Exh. Nos. KD-4 and KD-5.

65. PPL Exhibit KD-6 is Rule 4(I)(2) of PPL's tariff regarding relocation of facilities. PPL Exh. KD-6.

66. PPL will relocate the new AMI meter to an alternate location if there is a location that is mutually acceptable to both PPL and Mr. Codella and Mr. Codella bears the expenses associated with relocating the meter. PPL St. 3 at 10; PPL Exh. KD-6.

67. Donald Vinciguerra is a project manager for PPL primarily responsible to oversee the construction and installation of the AMI RF network and removal of PPL's old power line carrier (PLC) system. PPL St. 4 at 1-2.

68. PPL Exhibit DV-1 is PPL's Commission-approved smart meter plan dated June 30, 2014. PPL St. 4 at 3; PPL Exh. DV-1.

69. The RF meters transmit for only approximately 84 seconds per day with durations of individual transmissions lasting only millisecond. PPL St. 4 at 5.

70. Mr. Codella's meter is the Landis + Gyr E350 FOCUS AXR-SD meter. PPL St. 4 at 6.

71. PPL takes several steps to protect against unauthorized public disclosure or access to AMI data including use of firewalls, encryption, digital signatures, authentication, access controls, proprietary-based applications and five levels of password protection. PPL St. 4 at 7.

72. The AMI meters installed by PPL meet the safety and fire standards issued by the American National Standards Institute (ANSI) and the Underwriters Laboratories (UL). PPL St. 4 at 8-10.

73. PPL has deployed over one million AMI meters in its service territory and none of them have caused a fire. PPL St. 4 at 10.

74. AMI meters are more accurate than analog meters because they use a digital process to record usage which does not deteriorate over time like the mechanical dials used in the analog meters. PPL St. 4 at 11.

75. The AMI meters are equipped with a ZigBee radio which, if activated, enables the meter to connect to the customer's ZigBee enabled devices through a home area network but can only be activated upon customer request and does not detect which specific appliance is being used if activated. PPL St. 4 at 11-12.

DISCUSSION

Legal Standard

Section 332(a) of the Public Utility Code provides that the party seeking relief from the Commission has the burden of proof. 66 Pa.C.S. § 332(a). As a matter of law, a complainant

must show that the named utility is responsible or accountable for the problem described in the complaint in order to prevail. Patterson v. Bell Tel. Co. of Pa., 72 Pa. PUC 196 (1990). “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) (Se-Ling Hosiery). The offense must be a violation of the Public Utility Code, the Commission’s regulations or an outstanding order of the Commission. 66 Pa.C.S. § 701. In this proceeding, Mr. Codella averred in his complaint that he experienced fatigue, insomnia, headaches and hearing a high-pitched sound after his analog meter was replaced with an AMI meter. Mr. Codella has also raised concerns regarding safety and privacy of the smart meters. Mr. Codella requests that PPL put his analog meter back on. Mr. Codella, therefore, has the burden of proof in this proceeding.

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, the complainant will prevail. If the utility rebuts the complainant's evidence, the burden of going forward with the evidence shifts back to the 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. Milkie v. Pa. Pub. Util. Comm’n, 768 A.2d 1217 (Pa.Cmwlth. 2001)(Milkie); *see also*, Burleson v. Pa. Pub. Util. Comm’n, 443 A.2d 1373 (Pa.Cmwlth. 1982).

The decision of the Commission must be supported by substantial evidence. 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, 166 A.2d 96 (Pa.Super. 1961); and Murphy v. Comm., Dept. of Public Welfare, White Haven Center, 480 A.2d 382 (Pa.Cmwlth.1984).

More specifically pertaining to smart meters, the Commission has issued various orders regarding smart meter cases. In those orders, the Commission established that 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). Rather, the person must demonstrate by a preponderance of the evidence that such exposure actually causes adverse health effects. Id. at *211. 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.”)

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.” Id., *citing*, 66 Pa.C.S. § 1501. Section 1501 of the Public Utility Code provides, in pertinent part:

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. . . .

66 Pa.C.S. § 1501.

Health Issues

In his testimony and through exhibits, Mr. Codella argued “that smart meters are dangerous, because they utilize radio frequencies, meaning microwaves. These frequencies can

cause cancer, anxiety, insomnia and other complications.” Tr. 13. Mr. Codella added that he voiced these concerns with his doctor because “it’s causing me physical and mental issues with this new meter that’s been put on the home, my home.” Tr. 14; *see also*, Codella Exh. 1 (“when the new meter was installed on my home I started hearing a high pitched sound, and over a short period of time I also started experiencing headaches, trouble sleeping, fatigue and tremors.”). Mr. Codella submitted a note from his doctor in support of his argument and requested that the smart meter be removed from his home and the old meter be put back on. As discussed further below, Mr. Codella made several comments in his testimony and exhibits regarding various reports that he contends support his argument that smart meters cause adverse health issues.

In response, PPL provided substantial evidence that the RF fields from smart meters do not cause any adverse health effects. PPL presented the testimony of two expert witnesses, Dr. Chris Davis and Dr. Mark Israel, on this issue. Dr. Davis is a scientific researcher and teacher in physics and electric engineering at the University of Maryland who has authored 255 articles published in peer-reviewed scientific journals and has conducted a substantial amount of research on RF fields of the type produced by the AMI meters being used by PPL. PPL St. 1 at 1-3. Dr. Israel is a medical doctor, research, Executive Director of an international non-profit research foundation and professor emeritus at Dartmouth Medical School. PPL St. 2 at 1-4.

Dr. Davis testified that the AMI meters being used by PPL send low level radio signals and produce RF fields which are only produced a total daily time of 84 seconds per 24 hours with the individual signal durations of only 46 to 63 milliseconds. PPL St. 1 at 7. Dr. Davis added that the RF fields do not have the energy to break chemical bonds in DNA and are therefore non-ionizing. *Id.* at 8. Dr. Davis also noted the FCC safe maximum permissible exposure limits for non-portable devices which transmit RF signals and testified that there is no reliable scientific basis for a mechanism by which RF fields could cause effects in the human body other than through heating but the RF fields from the AMI meter being used by PPL are too low to cause a heating effect. *Id.* at 9-12. Dr. Davis also presented exhibits demonstrating that the RF fields from AMI meters being used by PPL comply with the applicable FCC RF exposure limit and also showing the RF fields from a number of sources that people are commonly exposed to, such as television transmissions. *Id.* at 13-14 and PPL Exh. Nos. CD-2, CD-3 and CD-4.

Dr. Israel testified that his evaluation of the body of scientific research found no reliable medical basis to conclude that non-thermal RF fields cause or contribute to the development of any diseases or illnesses, including the effects alleged by Mr. Codella. PPL St. 2 at 8-11. Dr. Israel added that neither the International Agency for Research on Cancer nor the WHO conclude that the RF fields from smart meters cause cancer. Id. at 12. Dr. Israel testified that the symptoms of headaches, dizziness, body aches, buzzing in the ears, eye floaters, difficulty concentrating, memory loss, sleep disturbance, nausea, abdominal issues, palpitations, nervousness, fatigue and lethargy are known as Idiopathic Environmental Intolerance (IEI) and are not caused by exposure to RF fields. Id. at 13-14. Dr. Israel concluded that 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 the development of illness or disease. Id. at 19.

Mr. Codella responded to the testimony of Dr. Davis and Dr. Israel by noting that other states have allowed consumers to keep their analog meters in part because of the health problems associated with smart meters. Codella Exh. 2-R. Mr. Codella also noted an article from the American Cancer Society that notes that RF radiation is a possible carcinogenic to humans and that other surveys have shown that people become ill after exposure to the RFs emitted by smart meters. Codella Exh. 3-R.

Mr. Codella's arguments are without merit and will be rejected. Mr. Codella has failed to provide substantial evidence demonstrating that the smart meter installed by PPL cause him any adverse health effects or in any way violate the Public Utility Code, a Commission order or regulation or a Commission approved tariff of the company.

Notably, the note from Mr. Codella's doctor does not support his argument that the smart meter is causing him adverse health effects. In particular, the letter states that Mr. Codella has indicated that his anxiety level has escalated dramatically since PPL put the smart meter on his home and that "he definitely is responding to his belief that the meters are dangerous." Codella Exh. 7. The letter concludes "anything you can do to help him would be appreciated." Id. This letter does not indicate that the smart meter is, in fact, causing Mr. Codella's increased anxiety; only that Mr. Codella is "definitely responding *to his belief* that the meters are dangerous." (emphasis added). The letter makes no causal connection between the installation of the smart meter and Mr.

Codella's anxiety level and, therefore, does not demonstrate that the smart meter is causing Mr. Codella adverse health effects in violation of the Public Utility Code, a Commission order or regulation or a Commission-approved tariff of the company. The letter only indicates that Mr. Codella believes that to be the case – not that it is the case.

Similarly, the videos in Codella Exhibit 8 also do little to support Mr. Codella's argument that the smart meter is causing him adverse health effects. Codella Exhibit 8 includes two videos which Mr. Codella purports demonstrate that his new smart meter emits more RF emissions than his old meter. Codella Exh. 8. The first video is 2 minutes and 37 seconds in duration and shows Mr. Codella waving a radiation detector around the original meter. The meter has a reading of "000" as Mr. Codella starts to wave it around the meter. When he touches the device to the meter, the device starts to register a reading that goes as high as 1200. The reading is the highest when the detector is directly touching the meter and reaches 1200 when it is held at the bottom of the meter. The second video is 2 minutes and 5 seconds in duration and shows Mr. Codella waving the detector around the newly installed smart meter. The meter first begins to register a reading even before the detector touches the glass on the meter. When the detector touches the glass, the readings on the detector go as high as 1377. The readings are again the highest when Mr. Codella holds the detector at the bottom of the meter. Mr. Codella states in the video that the new meter is giving off "a lot more radiation."

Aside from the substantial argument made by the parties regarding the value of Mr. Codella's tests given the process and equipment he used, the videos in fact demonstrate no significant change in the levels emitted from the two meters because the first meter records a reading as high as 1200 and the second meter records a reading as high as 1377. These two readings are not sufficiently different to demonstrate that the smart meter emits that much more RF than the analog meter to cause Mr. Codella adverse health effects for a determination to be made that PPL violated the Public Utility Code, a Commission order or regulation or a Commission approved tariff of the company.

Furthermore, it is relevant to the weight to be given to the videos in Codella Exhibit 8 that Mr. Codella used a detector that cost \$170 that he purchased off the internet. Tr. 25. Certainly, any results must be viewed in a skeptical light as opposed to results that would be

obtained from higher quality equipment. As PPL witness Davis testified during the hearing, there are concerns whether Mr. Codella's meter is accurate and could have been detecting RF emissions from other sources. Tr. 49. I agree. Therefore, less weight should be given to Codella Exhibit 8.

Overall, however, the weight of evidence presented by PPL that the RF emissions from the smart meters do not cause adverse health effects outweighs the evidence presented by Mr. Codella that the RF from smart meters does cause adverse health effects. As noted above, Dr. Davis and Dr. Israel have presented substantial evidence from their own extensive experiences studying this issue, as well as the results of various reputable organizations that have also examined whether RF emissions from smart meters cause adverse health effects. As Dr. Israel testified, "there is no reliable medical basis to conclude that the RF fields from the AMI meter being used by PPL would cause, contribute to or exacerbate the development of illness or disease." PPL St. 2 at 19. This evidence must be balanced against the statement from Mr. Codella's doctor when referring to Mr. Codella's anxiety that "he definitely is responding *to his belief* that the meters are dangerous." Codella Exh. 7. When balancing the evidence of record in this case, it is clear that Mr. Codella has failed to meet his burden of proof that the smart meters cause him adverse health effects. *See, Se-Ling Hosiery, supra*, ("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).

As such, Mr. Codella's argument that PPL has violated the Public Utility Code, a Commission order or regulation or a Commission-approved tariff of the company because his smart meter causes him adverse health effects will be rejected.

Safety Issues

In addition to his averments in his complaint that his smart meter causes him adverse health effects, in his initial set of exhibits, Mr. Codella referenced smart meter malfunctions causing fires. *See*, Codella Exh. No. 1. Additionally, in response to the testimony presented by PPL witness Vinciguerra, Mr. Codella noted that a Landis & Gyr smart meter caused an apartment building fire in Bensalem, Pennsylvania that displaced 14 families and injured one firefighter. Codella Exh. 5-R. Mr. Codella added that the Bensalem Fire Marshall was quoted as stating that "the meter itself is the

cause of the Bensalem fire, not arcing and not the wires.” Id. Mr. Codella also referenced “an article from California” that mentions a Landis & Gyr meter “flying off an apartment building and catching fire” that killed one person. Id.

In response to Mr. Codella’s arguments regarding fire safety concerns, PPL witness Vinciguerra testified that the AMI meters installed by PPL meet the safety and fire standards issued by the American National Standards Institute (ANSI) and the Underwriters Laboratories (UL). PPL St. 4 at 8-10. Mr. Vinciguerra further testified that when Met-Ed selected the new AMI meter, it conducted independent testing with a third party of the potential new AMI meters and that the Landis + Gyr RF Mesh meter was selected because it was the best performer. Id. at 8. Mr. Vinciguerra testified that the meter capacity can withstand temperatures equal to or greater than 160 degrees Celsius. Id.

Mr. Vinciguerra testified regarding PPL’s testing that determined the root cause of the vast majority of overheating issues was caused by a loose or broken connection within the customer-owned meter base but that the company has expanded its inspection criteria and trained its installers to perform enhanced inspections to address the issue. Id. at 9. Mr. Vinciguerra also testified that the AMI meters being deployed by PPL are equipped with software or mechanisms that address issues of overheating. Id. at 10. Mr. Vinciguerra added that the temperature of the meters is sent to the company in 15-minute intervals so that any problems can be detected. Id. Mr. Vinciguerra noted that a heat alarm can be triggered to alert the company to dispatch personnel to investigate. Id. Mr. Vinciguerra concluded that PPL has deployed over one million of the Landis +Gyr E350 Focus AXR-SD meters in its service territory and is unaware of any of them causing any fires. Id.

In light of this record evidence, Mr. Codella’s arguments regarding safety of the AMI meter are without merit and will be rejected. The evidence presented by PPL outweighs the evidence presented by Mr. Codella. Mr. Codella presented evidence of one fire caused by a smart meter in Bensalem and one fire caused by a smart meter in California. However, the evidence is hearsay and is given little weight. Hearsay is an out of court statement offered for the truth of the matter asserted. Pa.R.E. 801. Although the rules of evidence in an administrative setting are relaxed, hearsay evidence, properly objected to, is not competent evidence to support a finding.

Walker v. Unemployment Compensation Board of Review, 367 A.2d 366, 370 (Pa. Cmwlth. 1976) (Walker). The quote from the Bensalem Fire Marshal and the article from California were objected to and were not corroborated. The Fire Marshal and the author of the article were not available for cross-examination or for an evaluation to be made of their credibility. In contrast, Mr. Vinciguerra pre-served written testimony, spoke of his first-hand experiences with PPL testing the safety of the meters and was available for cross-examination during the hearing.

Mr. Vinciguerra explained in detail regarding the efforts PPL undertook, and continues to undertake, to ensure that the smart meters it installs do not cause a fire or otherwise present a safety risk. It is particularly significant that Mr. Vinciguerra testified that PPL has deployed over one million of the Landis +Gyr E350 Focus AXR-SD meters in its service territory and that he is unaware of any of them causing any fires. This evidence outweighs Mr. Codella's hearsay evidence regarding two fires he believes were caused by the smart meter.

As such, Mr. Codella has failed to present substantial record evidence sufficient to demonstrate that the smart meters installed by PPL cause fires or are otherwise unsafe or in any way violate the Public Utility Code, a Commission order or regulation or a Commission approved tariff of the company. As noted above, the burden of going forward with evidence may shift from one party to another but the burden of proof never shifts; it always remains on the complainant. Milkie, *supra*. Mr. Codella has failed to meet his burden on this issue.

Data Privacy Issues

Similar to Mr. Codella's arguments regarding safety issues, Mr. Codella only provided minimal argument with regard to his concerns of data privacy pertaining to smart meters. In Codella Exhibit Number 4, Mr. Codella stated "in this day and age, privacy is a concern. Any type of WIFI (smart meter) can be used to steal information." Codella Exh. 4. Mr. Codella also asserted in his exhibits that "we constantly hear on the news about information being hacked and stolen by cyber criminals" and that the "precautionary actions stated by PPL will not guarantee that information wont be stolen by a third party due to the use of WIFI." Codella Exh. 4-R. Mr. Codella then provided information from a Google search that "security experts warn that the smart meters can be infected with a virus that can be spread between different devices. And cutting some

individual energy supplies off. Others warn that they could even be hacked and used for terrorism.” Codella Exh. 5-R. Mr. Codella provided additional information regarding his position that “anything connected to a WIFI connection has the potential to be hacked and reverse-engineered.” Id.

In contrast, both PPL witnesses Durkin and Vinciguerra provided testimony regarding protection of customer data. For example, Mr. Durkin testified that PPL filed an “AMI customer privacy policy” as part of its 2016 smart meter plan. PPL St. 3 at 6; *see also*, PPL Exh. KD-3. Mr. Durkin testified that “PPL collects electric usage data and significant event information such as outages, voltage, heat alarms and meter tampering alerts” but “the AMI data does not contain any personally identifiable information, such as the customer’s name, account number, phone number or address.” Id. at 7. Mr. Durkin added that “the company only collects information about the total electric usage at the premises. The information does not differentiate between the use of any specific appliance or appliances.” Id. Mr. Durkin also explained that there are several technologies and practices, such as firewalls, encryption, digital signatures, authentication, and access controls PPL uses to protect the AMI data from unauthorized access or public disclosure. Id. Mr. Durkin concluded by testifying regarding the ways PPL uses the AMI data it collects, including to calculate customers’ bills, providing necessary information to authorized electric generation suppliers and/or third-party representatives and sharing the data with customers, among other things. Id. at 8.

Similarly, Mr. Vinciguerra testified that it was his responsibility to ensure the meters and communication protocols meet or exceeded all national standards and the cybersecurity was one of the cornerstones of PPL’s smart meter plan. PPL St. 4 at 6-7. Mr. Vinciguerra testified regarding additional information beyond Mr. Durkin’s testimony about the steps that PPL takes to protect customer data through the AMI meters. Id. at 7-8.

As a result, the evidence presented by Mr. Codella that there are data or privacy concerns with the smart meters is outweighed by the evidence presented by PPL that there are no data or privacy concerns with the smart meters it deploys. Therefore, Mr. Codella’s arguments will again be dismissed.

Mr. Codella's argument that "in this day and age privacy is a concern. Any type of WIFI (smart meter) can be used to steal information" is Mr. Codella's own personal opinion and is not supported by any factual evidence. Personal opinions or perceptions do not constitute substantial evidence sufficient to permit a complainant to sustain their burden of proof. Kirby v. PPL Electric Utilities Corporation, Docket No. C-20066297 (Final Order entered November 16, 2006) (citing, Pa. Bureau of Corrections v. City of Pittsburgh, 532 A.2d 12 (Pa. 1987)). Similarly, Mr. Codella's arguments regarding what he has heard on the news or Google searches he has done suffer from the same hearsay flaws as Mr. Codella's reliance on articles regarding fire safety – the evidence was objected to and not corroborated. See, Walker, *supra*. Yet, the testimony of Mr. Durkin and Mr. Vinciguerra regarding PPL's AMI customer privacy policy and the multiple specific steps that the company undertakes to protect customer data are reliable and afforded substantial weight.

On balance, Mr. Codella has failed to satisfy his burden of demonstrating that PPL's use of the AMI smart meters creates data privacy issues or otherwise violates the Public Utility Code, a Commission order or regulation or a Commission-approved tariff of the company and, therefore, must be rejected.

Conclusion

In conclusion, Mr. Codella has failed to satisfy his burden that the AMI meter that PPL installed at his home causes any adverse health effects, creates safety concerns, creates data privacy concerns or otherwise violates the Public Utility Code, a Commission order or regulation or a Commission-approved tariff of the company. The letter from Mr. Codella's doctor that Mr. Codella believes smart meters are dangerous is outweighed by the substantial record evidence presented by PPL from two expert witnesses that the radiation emitted from smart meters does not cause adverse health effects. Similarly, Mr. Codella has failed to present sufficient evidence that the smart meters cause fires or are otherwise unsafe or that the smart meters create data privacy concerns. PPL has effectively rebutted Mr. Codella's argument on these issues as well. Therefore, Mr. Codella's complaint must be dismissed.

CONCLUSIONS OF LAW

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

2. Section 332(a) of the Public Utility Code provides that the party seeking relief from the Commission has the burden of proof. 66 Pa.C.S. § 332(a).

3. A complainant must show that the named utility is responsible or accountable for the problem described in the complaint in order to prevail. Patterson v. Bell Tel. Co. of Pa., 72 Pa. PUC 196 (1990).

4. "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).

5. The offense must be a violation of the Public Utility Code, the Commission's regulations or an outstanding order of the Commission. 66 Pa.C.S. § 701.

6. 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, the complainant will prevail. If the utility rebuts the complainant's evidence, the burden of going forward with the evidence shifts back to the 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. Milkie v. Pa. Pub. Util. Comm'n, 768 A.2d 1217 (Pa.Cmwlth. 2001); *see also*, Burleson v. Pa. Pub. Util. Comm'n, 443 A.2d 1373 (Pa.Cmwlth. 1982).

7. The decision of the Commission must be supported by substantial evidence. 2 Pa.C.S. § 704.

8. "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 278, 166 A.2d 96 (1961); and Murphy v. Comm., Dept. of Public Welfare, White Haven Center, 85 Pa.Cmwlt. 23, 480 A.2d 382 (1984).

9. 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).

10. A person must demonstrate by a preponderance of the evidence that an electric and magnetic field 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 *211 (June 29, 1992) (Initial Decision).

11. In AMI meter-related matters, the 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).

12. 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. 66 Pa.C.S. § 1501.

13. Hearsay is an out of court statement offered for the truth of the matter asserted. Pa.R.E. 801.

14. Hearsay evidence, properly objected to, is not competent evidence to support a finding. Walker v. Unemployment Compensation Board of Review, 367 A.2d 366, 370 (Pa. Cmwlth. 1976).

15. Personal opinions or perceptions do not constitute substantial evidence sufficient to permit a complainant to sustain their burden of proof. Kirby v. PPL Electric Utilities Corporation, Docket No. C-20066297 (Final Order entered November 16, 2006) (citing, Pa. Bureau of Corrections v. City of Pittsburgh, 532 A.2d 12 (Pa. 1987)).

16. Mr. Codella has failed to satisfy his burden of demonstrating that PPL has violated the Public Utility Code, a Commission order or regulation or a Commission-approved tariff of the company when it installed an AMI smart meter at his home.

ORDER

THEREFORE,

IT IS ORDERED:

1. That the formal complaint filed by John Codella against PPL Electric Utilities Corporation on June 3, 2019 at docket number C-2019-3010437 is hereby denied.

2. That this matter be marked closed.

Date: January 24, 2020

/s/
Joel H. Cheskis
Deputy Chief Administrative Law Judge