BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Maria Povacz	:	
	:	
Complainant,	:	
v.	:	**Docket No. C-2015-2475023**
	:	
PECO Energy Company	:	
	:	
Respondent.	:	

REPLY BRIEF OF COMPLAINANT MARIA POVACZ

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INTRODUCTION

Complainants can think of only very few circumstances where it would be lawful, ethical, or moral to enter onto someone else's home or property and subject them to a physical force against their will. Arrest by a police officer with a warrant or forcible removal of a person to save them from a flood or fire are the only examples that come to mind. Yet that is exactly what PECO proposes to do to Complainants—subject them to radiofrequency ("RF") electromagnetic energy ("EE"), a physical force, not just against their expressed wishes but over their doctors' recommendations, by the placement on their homes or property of smart meters that emit RF. This clearly violates 66 Pa. C.S.A. § 1501, which requires that electric service be both "safe" and "reasonable."

PECO has failed to respond to many of the arguments and points that Complainants made in their Opening Briefs. It instead relies on the argument that Complainants cannot prove tort law causation. This presents the Commission with a threshold issue of statutory interpretation. PECO should lose this argument because nothing in Section 1501 supports PECO's position that Complainants must prove that RF exposure from PECO smart meters "will cause, contribute, or exacerbate their adverse health conditions." *Main Brief of PECO* at 12.

The quality of being safe, by definition, means the absence of risk. This means that Complainants do not need to prove that harm to them will result or did result, as if this were a tort case seeking damages, but instead Complainants must prove by a preponderance of the evidence there is a risk of harm. Complainants can

also prevail by showing, again by a preponderance of evidence, that the imposition of smart meter on their homes or properties is unreasonable.

Complainants have amply satisfied their burden of proof. Complainants proved, though the testimony of Dr. Marino, that radio frequency ("RF") electromagnetic energy ("EE") can cause harm to vulnerable and sensitive persons like Complainants, although under the current state of science it is impracticable to prove with certainty that any particular person has been harmed or will be harmed by exposure to RF, and that forced exposure to RF amounts to involuntary experimentation.

As demonstrated in the Complainants' Opening Briefs, the Court should adopt the testimony of Dr. Marino, because he is better qualified than PECO's experts and he provided highly persuasive expert testimony. Further, PECO's expert witnesses took unreasonable and unsupported positions and lack credibility.

The evidence presented is amply sufficient for the Commission to find that RF exposure can cause harm. But Complainants recognize that this is a controversial issue as to which there is continuing discussion in the scientific community, including the May 2016 report of the National Toxicology Program, which found that RF exposure caused cancer in rats.

For that reason, Complainants have suggested to the Commission that it need not reach the scientific issue of whether RF exposure can cause harm, but instead can base its decision on narrower grounds that, even if the safety of RF

exposure is unknown (not proven safe but not proven harmful), given the mandate of Section 1501 that electric service be safe (free from risk) and reasonable, PECO should provide an accommodation for vulnerable and sensitive people like the Complainants who have been advised by their doctors to avoid RF exposure.

A ruling in favor of Complainants would not open the floodgates for PECO customers to opt out of smart meters: it would apply only to a few people like Complainants, who avoid RF by not using cell phones or Wi-Fi and who have received medical recommendations to avoid RF. Given that the vast majority of people use cell phones and Wi-Fi at home regularly, it stands to reason that there will be few PECO customers who can legitimately claim to be seriously concerned about RF exposure and even fewer will have reported symptoms of concern to their doctors who recommend avoidance of RF exposure.

This would be an eminently fair and reasonable outcome. It would also avoid the substantial constitutional issue that is presented. Complainants raised that issue in their opening briefs, and PECO did not respond to explain why forced RF exposure approved by the Commission does not violate the due process clause of the 14th Amendment of the United States Constitution and Article 1, section 11, of the Constitution of the Commonwealth of Pennsylvania. The silence on that issue is deafening.

PECO asks the Commission to fall in line with the decisions of public utilities commissions from other states, but all of those other states have opt-out provisions that would support findings that the smart meter programs in those

other states are safe and reasonable because of the existence of the opt out provisions. The Commission would be the first public utility commission to mandate forced RF exposure against the wishes of customers who object based on recommendations from their doctors.

It does not need to be this way. Complainants are not asking the Commission to create an opt-out where the General Assembly failed to do so, but instead to require an "accommodation" as expressly authorized under Section 1501, given their concerns and their doctors' recommendations.

PECO has failed to identify any countervailing consideration at all, much less any consideration so weighty that it would justify disregarding the recommendations of Complainants' treating physicians. PECO does claim, however, without support in the record, that accommodating Complainants' concerns would disrupt PECO's $750 million investment in its AMI system and would violate PECO's due process rights. No legal support is offered for this assertion and there is none. It defies reason for PECO to suggest that statutory accommodation of Complainants will cost PECO $750 million or even a miniscule fraction of that amount.

Finally, Complainants do not seek to place the ultimate burden of proof on PECO. What PECO actually seems to be contending is that it has a right to expose Complainants to RF, despite the lack of evidence that it is safe to do so, and that Complainants must prove a certainty of resulting harm to stop PECO. This contorts the meaning of "safe" and ignores the word "reasonable." PECO should be

ordered to accommodate Complainants' concerns and not to place RF-emitting smart meters on their homes or property.

PROPOSED FINDINGS OF FACT

As PECO correctly notes, in their Opening Briefs Complainants neglected to provide proposed findings of fact for the testimony of their expert witness Andrew Marino, Ph.D., but that the summary of his testimony provided in the briefs could be re-purposed as findings of fact. *Main Brief of PECO* at 5. At the request of the Commission, Complainants will submit proposed findings of fact for Dr. Marino based on the summary of his testimony already provided.

With one exception, Complainants accept PECO's Proposed Findings of Fact as an accurate rendition of the testimony provided, although Complainants disagree with the accuracy and credibility of the testimony for the reasons presented in argument. The one exception is PECO's proposed Finding of Fact No. 11. Complainants do not agree because there was no testimony presented about any usage of a cell phone by Ms. Murphy, as PECO incorrectly suggests.

ARGUMENT

I. The Plain Language of the Section 1501 Mandates that Complainants Need Prove Only That Forced Exposure to PECO Smart Meters is Neither Safe Nor Reasonable, Without Any Requirement That They Prove Medical Causation as if This Were a Tort Action Seeking Money Damages

PECO contends that Complainants can prevail only if they prove, by a preponderance of the evidence, that RF exposure from PECO smart meters "will cause, contribute, or exacerbate their adverse health conditions." *Main Brief of*

PECO at 12. This is the requirement in torts cases alleging harm to health: "where there is no obvious causal relationship, unequivocal medical testimony is necessary to establish the causal connection." *Polett v. Public Communications Inc.,* 126 A.3d 895, 930-31 (Pa. 2015) (citing *Smith v. German,* 253 A.2d 107, 108 (Pa. 1969)).[1]

The threshold issue for the Commission to decide is whether Section 1501 requires proof of causation of harm in order for Complainants to demonstrate that PECO's attempt to force RF exposure on Complainants is "safe" and "reasonable." This is a straightforward issue of statutory interpretation that the Commission has never squarely addressed. Specifically, counsel for Complainants is unaware of any prior decision by the Commission (or any court) addressing the meaning of Section 1501 on the issue presented here, namely, does the Complainants' burden include proof of tort causation?

Pennsylvania Law as set forth in the Statutory Construction Act of 1972 is clear that "[t]he object of all interpretation and construction of statutes is to ascertain and effectuate the intention of the General Assembly." 1 Pa. C.S.A. §

[1] This causation inquiry breaks down into two parts: general causation (whether it could cause harm) and specific causation (whether it did cause harm). *See e.g., Pritchard v. Dow Agro Sciences,* 705 F. Supp. 2d 471, 483 (W.D. Pa. 2010) ("Courts in the toxic tort cases often separate the causation inquiry into general causation whether the substance is capable of causing the observed harm in general—and specific causation—whether the substance actually caused the harm a particular individual suffered.") (citing *Perry v. Novartis Pharmaceuticals Corp*., 564 F. Supp 2d. 452, 463 (E.D. Pa. 2008). "General causation is often established in a toxic tort case through the use of epidemiological studies." *Id.* at 483. Specific causation involves "differential diagnosis . . . a standard scientific technique which identifies the cause of a medical problem by eliminating the likely causes until the most probable one is isolated." *Id.* at 489 (citations omitted).

1921(a). "When the words of a statute are clear and free from all ambiguity, the letter of it is not to be disregarded under the pretext of pursuing its spirit." *Id.* § 1921(b).

The Statutory Construction Act recognizes certain presumptions in ascertaining legislative intent, including that the General Assembly "does not intend a result that is absurd, impossible of execution, or unreasonable[,]" "and does not intend to violate the Constitution of the United States or of this Commonwealth" *Id.* § 1922(1), (3). Consistent with this statutory guidance, courts have recognized that "the best indication of the General Assembly's intent may be found in its plain language." *Branton v. Nicholas Meat, LLC,* 159 A.3d, 540, 548 (Pa. Super. 2017) (citation omitted). "One way to ascertain the plain meaning and ordinary usage of terms is by reference to a dictionary definition." *Id.* (citation omitted).

Merriam-Webster defines "safe" as "free from harm or risk." *See* www.merriam-webster.com/dictionary/safe. "Harm" is defined as "physical or mental damage." https://www.merriam-webster.com/dictionary/harm. "Risk" is defined as "possibility of loss or injury." https://www.merriam-webster.com/dictionary/risk. Numerous other dictionaries also define "safe" to include *the absence of risk including the possibility of harm* as well as actual harm.[2]

[2] Webster's Third New International Dictionary Unabridged defines "safe" as "[f]reed from harm, injury, or risk: no longer threatened by danger or injury" (first definition) and "[s]ecure from threat of danger, harm, or loss" (second definition). It defines "danger" as "[t]he state of being exposed to harm: liability to injury, pain, or loss" (third definition, the first after archaic and obsolete definitions). It defines

There is nothing in the plain language of Section 1501 to support PECO's argument that the Complainants must prove that harm was or will be caused. It also makes no sense, because it violates the principle that statutory construction or interpretation must be reasonable and not absurd.

Taking PECO's position to its logical but absurd conclusion, it does not matter how much of a risk of harm is presented, no customer could establish a violation of Section 1501 unless they could prove by a preponderance of evidence (51%) that they have been or will be harmed. Under that reasoning, a 25% risk of electrocution of an electricity customer through the action of a Pennsylvania utility would be deemed to be safe and not a violation of Section 1501. That cannot be right. The General Assembly could not have intended this, and the plain meaning of "safe" does not permit it.

The analysis set forth above regarding Complainants' burden of proof is correct as demonstrated by *Miller v. Bethlehem City Council,* 760 A.2d 446 (Pa. Commw. 2000). In that case, the court considered whether a statutory provision at issue (a section of the Third Class City Code, Act of June 23, 1931, P.L. 932, as amended 53 P.S. § 39303.2) which required proof of disability by "competent

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"risk" as "[t[he possibility of loss, injury, disadvantage, or destruction) (first definition). The American Heritage Dictionary (2nd College Ed.) defines "safe" as "[s]ecure from danger, harm, or evil" (first definition), "[f]ree from danger or injury; unhurt" (second definition), and "[f]ree from risk; sure" (third definition). It defines "danger" as "[e]xposure to vulnerability to harm or risk" (first definition). It defines "risk" as "[t]he possibility of suffering harm or loss; danger" (first definition). Many other dictionaries could be consulted, and they all include the concept of being free from the possibility of harm as well as free from actual harm.

medical evidence," included the testimony of a licensed psychologist. *Bethlehem City*, 760 A.2d at 450. The court consulted other statutory definitions as well as "the definition of the word 'medical' as contained in Webster's Third New International Dictionary" and concluded that the term "medical" did not include the testimony of a licensed psychologist. *Id.* at 451. The Court went on to decide as well that the plain language of the statute did not require proof that the officer's disability resulted solely from injuries sustained in the line of duty. *Id.*

The Commission should follow the same analysis, which focuses on the plain language of the statute. In *Bethlehem City*, the statute "require[ed] only that the claimant's disability be proven by competent medical evidence . . . and was completely silent regarding the type of evidence required to establish the case of disability." *Id.* In contrast, there is nothing in Section 1501 to suggest that Complainants (who cannot assert a claim for damages in these proceedings) have any burden at all to prove causation.

In addition to the statutory requirement that utility service be safe, Section 1501 also requires that the service be "reasonable." It further provides that PECO "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."

There is not a single suggestion or even a hint in the language of Section 1501 (or elsewhere) that a customer must prove causation of harm as

required in a tort claim for damages. *See, e.g., Brandon v. Ryder Truck Rental, Inc.*, 34 A.3d 104, 110 (Pa. Super. Ct. 2011) ("The evidentiary requirements of negligence law demand proof that injury is proximately caused by a specific defect in design or construction . . . ."); *Viguers v. Philip Morris USA, Inc.*, 837 A.2d 534, 540 (Pa. Super. Ct. 2003) (proximate causation of damages is a required element for a finding of fraud); *Spino v. John S. Tilley Ladder Co.*, 696 A.2d 1169, 1172 (Pa. 1997) ("Pennsylvania law requires that a plaintiff prove two elements in a product liability action: that the product was defective, and that the defect was a substantial factor in causing the injury.").

An administrative agency charged with ensuring safety and reasonableness should not require tort law proof of causation. This is why Complainants provided the Commission with authority recognizing that the standard of proof required by an agency charged with ensuring safety "is reasonably lower than that appropriate in tort law, which traditionally makes more particularized inquiries into cause and effect and requires a plaintiff to prove that it is more likely than not that another individual has caused him or her harm." *Allen v. Pennsylvania Engin. Corp*, 102 F.3d 194, 198 (5th Cir. 1996) (citing *Wright v. Willamette Indus. Inc.,* 91 F.3d 1105, 1107 (5th Cir. 1996)).

In their Opening Briefs, Complainants told the Commission that it should be concerned under Section 1501 not just with actual proven harm, but also with the potential for harm, because the role of the Commission includes

consideration of policy. *Main Brief of Laura Sunstein Murphy* at 76.[3] PECO turns this around and argues that the Commission should not base its decision "solely upon policy and political considerations." *Main Brief of PECO* at 20.

Complainants never suggested that the Commission should decide these cases solely upon considerations of policy. In the first instance, it must decide whether Section 1501 requires tort law proof of causation, which is purely a matter of statutory construction, with no consideration of policy. If the statute is unambiguous, the Commission has no discretion and no court would defer to the Commission. *See Seeton v. Pa. Game Comm.,* 937 A.2d 1028, 1037 (Pa. 2007) ("while an agency's interpretation of an ambiguous statute it is charged with enforcing is entitled to deference, courts' deference never comes into play when the statute is clear.") (citations omitted).

But, once the Commission decides that there is no requirement of proof of tort law causation, as it must, because there is nothing in the plain language of Section 1501 to support it, then the Commission must consider whether PECO's plans to force Complainants to accept RF-emitting smart meters is both safe and reasonable. That decision also involves statutory interpretation. What does it mean for service under Section 1501 to be "safe" and "reasonable"? Complainants submit that "safe" means no potential for harm and "reasonable" needs no further

[3] Because all three of Complainants' Main Briefs are nearly identical apart from specific factual averments, Complainants cite only to the Main Brief of Laura Sunstein Murphy when referencing the legal arguments in Complainants' Main Briefs. In instances where citations are made to facts specific to each Complainant, citations to each brief will be provided.

definition because where, as here, a utility is trying to force customers to accept exposure to RF by installation of a device on their home or property, against their wishes and their treating physicians' recommendations and testimony, something that is unprecedented in law and not done in any other state, it is obviously unreasonable under Section 1501.

The Commission should also reach this decision because to read Section 1501 to permit PECO to force RF exposure on its customers, by placement of smart meters on their homes or properties, would violate the due process clause of the 14th Amendment of the United States Constitution, and Article 1, Section 11, of the Constitution of the Commonwealth of Pennsylvania, an argument that Complainants raised in their Opening Briefs. *Main Brief of Laura Sunstein Murphy* at 77-78. PECO did not respond.

PECO emphasizes that Complainants bear the burden of proof. *Main Brief of PECO* at 12-23. That is obviously true, but the question is to prove what?—that PECO's conduct presents a risk of harm and is unreasonable, as Complainants have demonstrated? Or to prove causation as if this were a tort case, as PECO has asserted without support?

PECO suggests that the Commission decided in *Kreider* that Section 1501 requires tort law proof of causation. *Id.* at 13-14. That is incorrect and nothing in the *Kreider* Order cited by PECO supports it. The Commission's Order of January 28, 2016, in *Kreider* said that the complainant in that case had "the burden of proof during the proceedings to demonstrate by a preponderance of the evidence, that

PECO is responsible or accountable for the problem described in the Complaint." *Id.* at 22 (citation omitted). The Commission held that "[t]he ALJ's role in the proceedings will be to determine based on the record in this particular case, whether there is sufficient evidence to support a finding that the Complainant was adversely affected by the smart meter or whether PECO's use of a smart meter will constitute unsafe or unreasonable service in violation of Section 1501 under the circumstances in this case." *Id.* at 23 (citation omitted).

The Commission did not explain in *Kreider* what it meant to be "adversely affected," and did not state that Ms. Kreider had to provide proof of tort law causation. In any event, the Commission in *Kreider* in the passage quoted above used the disjunctive *or* to mean that, in addition to proving that she was adversely affected by PECO's use of a smart meter, Ms. Kreider could prevail by proving that the service was unsafe *or* unreasonable.

The Commission in *Kreider* did not address the specific issue presented here, i.e., whether Complainants must prove causation as if this were a tort case or whether they may instead prevail by proving lack of safety (risk of harm) or the unreasonable nature of PECO's conduct. The Commission did suggest, however, that the relevant inquiry is the *potential* for harm. *Id.* at 21 ("For instance, we conducted a hearing to address a complaint alleging that the smart meter was a *potential* fire hazard and a *potential* health hazard to the complainant's pregnant wife in order to provide the complainant with an opportunity to be heard on the safety allegations." *Id.* at 21 (emphasis added) (citing *Renney Thomas v. PECO*

Energy Company, Docket No. C-2012-2336225 final order entered December 31, 2013). The Commission recognized that the complainant in that case did not need to prove that his pregnant wife had already been harmed. The proper inquiry was the potential for harm. So too in these proceedings the Commission must also consider the potential for harm as well as the reasonableness of PECO's conduct in insisting that Complainants suffer exposure to RF at their homes or properties in order to retain electric service.

PECO is wrong to suggest that the Commonwealth Court decided this issue in *Romeo v. Pa. PUC*, 154 A.3d 422 (Pa. Commw. 2017). *Main Brief of PECO* at 15. In *Romeo*, the court did not discuss the meaning in Section 1501 of the words "safe" and "reasonable" and did not state or even suggest that the complainant had the burden of proving causation as if the proceedings were a tort case for damages. Romeo argued that the Commission should have given him a hearing "in light of the 'clear evidence of the dangers that smart meters pose and [Romeo] should not be forced to have suffered damage to his home or his family's health . . . in order to have the opportunity to challenge the installation of a smart meter at his home.'" *Romeo*, 154 A.3d at 430. Romeo's appeal to the Commonwealth Court came after the Commission dismissed Romeo's complaint as legally insufficient as a matter of law "because he cannot personally testify that a smart meter was responsible for any fire, health, or safety defect . . . ." *Id.*

The court held in *Romeo*:

> What was before the Commission was PECO's preliminary objections, in which all factual allegations are taken as

> true. Romeo claimed that the smart meters cause safety and fire hazards and have a negative health impact. Just because he cannot personally testify as to the health and safety effects does not mean that his complaint is legally insufficient. He could make out his claim through the testimony of others as well as other evidence that goes to that issue. Because his complaint was not legally insufficient, the Commission erred in dismissing the complaint.

Id. Nowhere did the court state that Romeo had the burden of proving causation of harm, in the tort law sense.

PECO reaches back to the Commission's 1993 decision in *Re Philadelphia Elec. Co.,* 78 Pa. P.U.C. 486, Docket No. A-110550F055, 1993 Pa. PUC LEXIS 32 (Mar. 26, 1993), to argue that, where the evidence of harm from EE is inconclusive, the proper course is to dismiss. *Main Brief of PECO* at 15-18. There are multiple reasons why the Commission should not rely on *Re Philadelphia Elec. Co.* as support for a tort causation requirement in a proceeding under Section 1501.

First, the Commission in that case did not consider the statutory interpretation question raised here. Second, that case concerned exposure to transmission lines that apparently ran near the complainants' properties. It did not consider exposure to RF based on the placement of devices on the complainants' homes or property. That consideration makes a world of difference because forcing a customer to accept EE away from their home or property is very different from forcing them to accept exposure by installation of a device on their own home or property. Further, the *Re Philadelphia Elec. Co.* decision mentions but does not address in any meaningful detail whether the exposure could be unreasonable even

without conclusive evidence that exposure causes harm. *Id.* at *22-25. Finally, to the extent that the Commission may have held in *Re Philadelphia Elec. Co.* that a utility customer complaining of the potential for harm must prove either tort law causation or that exposure "is harmful to human health," *id.* at *7, the decision is wrong. Something that is not proven safe and yet not proven harmful may present a risk of harm. Even if the precise magnitude of the risk is uncertain, it could still be unreasonable to expose people to it in their homes and property against their wishes and the recommendation of their doctors, particularly where, as here, there is no compelling reason for forcing exposure as there are quite reasonable alternative employed by utilities all over the country.

PECO's final argument about Complainants' burden of proof is to attack Complainants' references to materials recognizing that the burden of proof in an administrative proceeding focused on safety (potential for harm) and reasonableness is less than that required in a tort setting. *Main Brief of PECO* at 21-23. That is precisely what those authorities recognize. *Main Brief of Laura Sunstein Murphy* at 76-77. PECO offers nothing to suggest the contrary.

Complainants are not asking the Court to act in a quasi-legislative capacity, as PECO wrongly suggests. *Main Brief of PECO* at 21. Nor are they asking the Commission to "use a standard of proof that is any less than the normal burden and standard of proof for formal complaints." *Id.* Complainants accept that they bear the burden of proof but, as previously noted, that does not answer the question as to whether they must prove causation as if this were a tort case, and the

plain language used by the General Assembly will not support PECO's position that proof of tort law causation is required.

PECO's discussions of weight of the evidence ("WOE") methodology is way off the mark. *Id*. As the U.S. Court of Appeals noted in *Allen v. Penn. Engineering Corp,* 102 F.3d 193, 198 (5th Cir. 1996), administrative agencies use the WOE method "to reduce public exposure to harmful substances" and do not require proof of tort law causation. As explained above, the Commission must consider the potential for harm and the reasonableness of PECO's conduct, which does not require proof of tort law causation. So PECO's discussions of WOE methodology as insufficient to prove tort law causation is a red herring.

Complainants have in no way suggested to the Commission that they seek to use WOE methodology to prove tort law causation. Tort law causation simply does not apply here.

In short, Section 1501 requires that PECO's services and facilities must be safe and reasonable. As the parties alleging that PECO has violated Section 1501, Complainants must prove that PECO's services and facilities are unsafe, meaning that they pose a risk of harm, or that they are unreasonable. As explained here, Complainants have satisfied that burden. There is no requirement that Complainants prove that, more likely than not, they have been or will be harmed.

II. Complainants Have Met Their Burden of Proving That They Have Been or Will Be Adversely Affected By Forced Exposure to RF from PECO's Smart Meters and that Forced Exposure to RF is Neither Safe Nor Reasonable

In their Opening Briefs, Complainants demonstrated that the evidence they presented through Dr. Marino is sufficient to establish that RF exposure could cause them harm. Dr. Marino also testified that, because there is no consensus clinical diagnosis, he could not testify whether RF exposure did cause or will cause adverse health consequences for the Complainants. PECO acts as if this is a revelation PECO exposed, but in fact the Complainants pointed this out in their Opening Briefs. *Main Brief of Laura Sunstein Murphy* at 36.

This does not mean that Complainants have not presented evidence that they have been and will be adversely affected by PECO's smart meters. To the contrary, as set forth in their Opening Briefs, each of the Complainants testified about their medical history and the basis for their concern about adverse effects from PECO's smart meters and each presented the testimony or their doctor who advised them to avoid RF exposure. *Main Brief of Laura Sunstein Murphy* at 11-16 (Nos. 26-65); *Main Brief of Maria Povacz* at 11-14 (Nos. 29-56); *Main Brief of Cynthia Randall and Paul Albrecht* at 9-13 (Nos. 17-42). There is ample evidence that Complainants are medically vulnerable and sensitive people.

The Complainants and their doctors are not experts in the effects of RF exposure (although Dr. Marino is) and they concede, as they must, that their testimony and that of their doctors would not meet the high burden of proving causation if these proceedings required tort law proof of specific causation of harm.

As Dr. Marino testified, without conducting tests that cost a half of a million dollars, it is impossible to prove causation for any particular person. *Main Brief of Laura Sunstein Murphy* at 36. But they have definitely proven that they will be adversely affected by forced RF exposure by PECO.

If the Commission does not accept Complainants' evidence and arguments, they will have no choice but to accept the forced exposure despite their objections and the recommendations of their treating physicians, learn to live without any electric service (which is impossible in the real world today), or move to any of the other 49 states where forced RF exposure is not mandated. These are not reasonable options.

PECO claims that granting an accommodation to Complainants based on their "sincere belief" that they will be harmed by RF exposure would disrupt PECO's $750 million investment in smart meters. *Main Brief of PECO* at 3. This is incorrect for several reasons. Complainants are not just people who "sincerely believe" that PECO's smart meters have or will cause them harm. They have provided extensive testimony about their circumstances and medical histories, including the recommendations and testimony of their treating physicians. *Main Brief of Laura Sunstein Murphy* at 11-16 (Nos. 26-65); *Main Brief of Maria Povacz* at 11-14 (Nos. 29-56); *Main Brief of Cynthia Randall and Paul Albrecht* at 9-13 (Nos. 17-42).

They have also provided testimony about the extent to which they have gone to avoid RF exposure in their lives and at their homes. *Main Brief of Laura*

Sunstein Murphy at 9-11 (Nos. 17-25); *Main Brief of Maria Povacz* at 10-11 (Nos. 25-28); *Main Brief of Cynthia Randall and Paul Albrecht* at 9 (Nos. 13-16). There is no reason to think that by accommodating Complainants and possibly a small number of other people who are similarly situated PECO will lose any part of its investment. Complainants recognize that PECO incurs costs for customer service and billing, but there is no reason to think that devising an alternative means to meter the electric service of Complainants and perhaps a few other people who also have sought to reduce RF exposure based on their medical concerns and present doctors' recommendations will present any significant cost to PECO.

Under these circumstances, Complainants have met their burden of proving that they have been or will be adversely affected by PECO's smart meters, in the plain English meaning of "adversely affected" and not the meaning used in tort cases, that RF exposure presents a risk of harm (synonymous for those purposes with potential for harm), and that it is unreasonable for PECO not to "make all such repairs, changes, alterations, substitutions, extensions, and improvements as shall be necessary or proper for the accommodation" of Complainants' concerns under 66 Pa. C.S.A. § 1501. Complainants are at a loss to understand how PECO could legally force them to accept RF exposure at their homes and properties in light of their circumstances and the very clear language of Section 1501.

Complainants will now respond to the various points raised by PECO. PECO contends that Dr. Marino testified only about the potential for RF exposure

to cause harm. *Main Brief of PECO* at 25-26. To be clear, Dr. Marino testified that there "could" be a causal relationship between RF exposure form PECO smart meters and harm to Complainants, but that without conducting a very expensive ($500,000) study he had no basis to testify that such exposure "did" or "would" cause harm. *Main Brief of Laura Sunstein Murphy* at 36. As Complainants have already made clear, if the Commission adopts PECO's position that tort law proof of causation is required, they would be unable to meet that high standard. It should be obvious to the Commission that Complainants have spent a lot of money on legal fees and expenses in this case. They should not be forced to spend hundreds of thousands of additional dollars on studies to prove causation, nor should they be exposed to additional RF in an experiment to prove it. PECO's position is unreasonable, as is its plan to force Complainants to accept RF exposure over their objections and against their physicians' recommendations.

PECO contends that Dr. Marino's second opinion—that the imposition of smart meters is unreasonable because it is tantamount to involuntary testing—"is the same as claiming that PECO has the burden of proof in this proceeding." *Main Brief of PECO* at 28. This is wrong. PECO does not dispute that there are no studies on the safety of smart meters. *Id.* at 36. Given this fact, it does not matter whether Complainants have proven that RF exposure from PECO smart meters can cause health effects, or whether the harmful effects of smart meters is merely "possible," but not yet proven to be "probable." Either way, Dr. Marino has established a valid point that no research institution could conduct testing of RF

exposure on humans without their consent. *Main Brief of Laura Sunstein Murphy* at 39. This does not shift the burden to PECO. To the contrary, it proves either that PECO's smart meters can cause health effects or it proves, at the very least, that it is possible but not yet *conclusively proven* that RF exposure can cause health effects. It also proves that, either way, what PECO proposes to do is unreasonable.

Complainants are not seeking to shift any burden. They have carried their burden. As always in law, when one side has the burden of proof, they must make out a prima facie case to avoid a summary loss, but once they make that showing the other side is free to put on its own evidence. The treatise *Standard Pennsylvania Practice* succinctly explains the concept of burden of proof:

> The term "burden of proof" has been defined as the duty of establishing the existence of a certain fact or set of facts by evidence which preponderates to a legally required extent. Thus, the term imports the duty of ultimately establishing a given proposition, and it marks the peculiar duty of the party who has the risk of any given proposition on which parties are at issue and who will lose if he does not establish this proposition. When a party is assigned the burden of proof, it must produce sufficient evidence to make a prima facie claim for the relief sought or lose summarily. Where the burdened party has presented evidence such that it does not lose summarily, the burden of proof is no longer [relevant] and the fact finder must decide which party prevails based on the weight of the evidence.

8 *Standard Pennsylvania Practice* § 49:63 (2014).

What PECO is really contending is that Complainants must prove tort law causation or else they lose. As previously explained, that is not the proper standard for proving a violation of Section 1501.

PECO argues that Dr. Marino's testimony about the background level of RF in the homes is inaccurate because it is based on his calculations, not measurements, and he merely assumed for the sake of analysis that the Complainants had made efforts to reduce or eliminate the level of RF at their homes. There are two problems with PECO's argument. First, it fails to respond to Dr. Marino's unchallenged testimony that measuring EE is difficult because there are "many perturbing factors" and that calculations are not only easier but "much more reliable." *Marino Test. Sept. 15, 2016* at 587:20-588:15 (JA000587-000588). Second, Dr. Marino's assumption that the Complainants have attempted to reduce the RF exposure in their homes is fully supported by the factual record as Complainants established in their opening briefs. *Main Brief of Laura Sunstein Murphy* at 9-11 (Nos. 17-25); *Main Brief of Maria Povacz* at 10-11 (Nos. 25-28); *Main Brief of Cynthia Randall and Paul Albrecht* at 9 (Nos. 13-16).

PECO next argues that exposure to UHF radio stations is "much higher" than exposure from PECO's smart meters, even using peak values for Ms. Murphy and for Ms. Randall and Mr. Albrecht. *Main Brief for PECO* at 28-29. That is incorrect. According to PECO's calculations, not measurements, the peak exposure from PECO's smart meter would be the same as the continuous exposure from local UHF stations "at the Murphy residence *at a distance of 85 feet from the AMI meter*." *Id.* at 29 (emphasis added). That will not do Ms. Murphy much good if the meter is installed on her home, not 85 feet away somewhere else on her property. And what is she supposed to do if the meter is installed elsewhere on her

property? Never use that part of her property? Further, assuming that that calculation is valid, why should Ms. Murphy (who has removed all RF exposure at her home) receive a double dose of RF exposure at 85 feet and higher than that at less than 85 feet? This hardly seems like a fair outcome for Ms. Murphy.

As for the Randall/Albrecht residence, Dr. Davis calculated (not measured) the exposure from a nearby antenna farm and testified that the exposure is 10 microwatts throughout their home as compared to 16 microwatts at qa distance of one meter from the PECO smart meter. *Id.* Even if Dr. Davis' calculation is correct, Dr. Marino testified that the PECO smart meter still adds a material contribution of RF into the living space of Ms. Albrecht and Mr. Randall, a point that Complainants made in their Opening Briefs. *Main Brief of Laura Murphy* at 46 n.2. PECO offers no response. PECO also offers no response to Complainants' observations that the exposure from radio and television (1) is not pulsed, (2) is not present all the time (because stations go off the air), and (3) cannot be avoided (if Complainants so desire and have the means to do so) by moving elsewhere in Pennsylvania or at least not by moving elsewhere in PECO's service territory. *Id.*

PECO offers an explanation of what Dr. Davis meant when he said that PECO's smart meters are not pulsed. *Main Brief of PECO* at 30. But Complainants made it abundantly clear that Dr. Marino used the word pulsed to describe an on/off phenomenon, and that PECO smart meters are pulsed in this sense, which was an important part of Dr. Marino's explanation of how RF exposure from PECO's meters can cause harm. *Main Brief of Laura Sunstein Murphy* at 30.

PECO's insistence that its meters do not pulse in some specialized sense used by Dr. Davis is completely irrelevant.

PECO argues that Dr. Davis presented the Commission with average values (and not the peak values that Dr. Marino testified were the only relevant consideration) because the Federal Communications Commission ("FCC") calls for average value in determining compliance with the FCC limits. *Main Brief of PECO* at 29. PECO failed entirely to respond to Complainants' demonstration that Dr. Davis' rationale for using averages "makes no sense." *Main Brief of Laura Sunstein Murphy* at 47-48.

PECO fails to respond to the substance of Dr. Marino's testimony about the bases for his opinion that RF exposure can cause health effects, but instead responds that "[g]iven the fact that Dr Marino's ultimate opinions do not meet the standard or burden of proof in this proceeding, there is little value addressing each of the individual studies which he relied in forming that opinion." *Main Brief of PECO* at 31. The problem for PECO with this position is that Section 1501 does not require tort law proof of causation, and Dr. Marino's testimony about the studies that are the basis for his first opinion stand unrebutted.

PECO responds only to one study cited by Dr. Marino, which is the original research he conducted, with others, and published in a peer-reviewed scientific journal to establish that EHS is a real phenomenon. *Id.* at 31. PECO criticizes the study on the grounds that, before that study there was no scientific proof that EHS is real; the study is focused on one subject by design; and Dr.

Marino testified that he did not offer the opinion that PECO smart meters could cause EHS but he speculated (by his own admission) that they could trigger it. *Id.* at 31. PECO's points do not respond to the substance of Dr. Marino's testimony about the EHS study he relied on—that it proved to a statistical certainty some people really can detect the presence of EE. *Main Brief of Laura Sunstein Murphy* at 33-34.

PECO contends that, despite PECO's misplaced critique of Dr. Marino's testimony about his groundbreaking EHS study, Dr. Marino "still thinks that his testimony provides an evidentiary basis to remove the AMI meters from the Complainants' residences. This is simply not a reasonable approach." *Id.* PECO makes it sound as if Dr. Marino were relying exclusively on his EHS study as support for his first opinion, and that is indisputably not the case. Dr. Marino based his opinion on studies of experimental biology, epidemiological studies, the EHS study, studies about mechanism, and studies about pulse structure (as he defined it). *Marino Test. Sept. 15, 2016*, at 594:3-22 (JA000594). He testified in detail about all of these bases, as explained in Complainants' Opening Briefs. *Main Brief of Laura Sunstein Murphy* at 31-35; s*ee also Marino Test. Sept 15, 2016*, at 629:24-633:27 (JA000629-000633) (testimony about pulse structure). There is ample scientific evidence before the Commission to support Dr. Marino's first opinion.

PECO takes issue with Dr. Marino's view of negative studies. *Main Brief of PECO* at 32. Dr. Marino's view is that a study that finds nothing has no probative value. *Marino Test. Sept. 15, 2016*, at 615:15-23 (JA000615). Dr. Israel

testified, in contrast, that it is very important to consider negative studies. *Israel Test. December 8, 2016*, at 1552:10-1553:3 (JA001877-001878). This discussion by PECO is misleading. The key exchange on the value of negative studies took place between Dr. Davis and Dr. Marino. *See Marino Test. Sept. 15, 2016*, at 747:13-748:18 (JA000747-000748); *Davis Test. Dec. 6, 2016*, at 1116:3-1119:17 (JA001440-001443); *Marino Test. January 25, 2017*, at 1895:20-1898:2 (JA002220-002223). Dr. Marino testified as follows:

> A negative study should be ignored unless it contradicts a positive study or the studies are essentially the same. But that never happened in the history of the study of the biological effects of electromagnetic energy, and Dr. Davis missed this point completely. It has never happened. The negative studies that actually exist, basically all of those produced by industry, are ignorable because they are not essentially the same as other positive studies, and they reach no conclusion of their own. So they add nothing to the knowledge.

See Marino Test. Jan. 25, 2017, at 1895:20-1896:12 (JA002220-002221). In response to Dr. Davis' claim that he ignored negative studies, Dr. Marino testified that "[i]n fact, I read every published negative study. I did not include them in my Direct Exhibit 2 to my report because those studies reported no results." *Marino Test.* January 25, 2017 at 1897:12-22 (JA002222).

The issue here is not why Dr. Marino relied on positive studies, as he explained in the testimony cited above, but why Dr. Israel relied exclusively on negative studies, and why his testimony based only on negative studies is irrelevant. Complainants raised this in their Opening Briefs. *Main Brief of Laura Sunstein Murphy* at 50-53. PECO did not respond.

PECO takes issue with Dr. Marino's criticism of the reports of various organizations that claim it is proven that exposure to RF presents no health risks. *Main Brief of PECO* at 32-33. PECO contends that Dr. Marino dismisses the views of anyone who disagrees with him as "bonded to industry" *Id.* This is incorrect. Dr. Marino did not testify that "wherever a person or organization disagrees with [him] as to whether non-thermal effects exist, he does not grapple with the substance of their opinion—he simply concludes that they are 'bonded to industry" and dismisses their opinion outright.'" *Id.* Dr. Marino testified, for example, in contrast to PECO's assertion regarding Dr. Marino's anti "bonded to industry" bias, that if the National Cancer Institute said that there are only thermal effects from RF exposure "then I would disagree with them, but I wouldn't say they are bonded to industry." *Marino Test.* Sept. 16, 2016, at 858:25-859:5 (JA000858-000859).

Dr. Marino did say, however, that, "in his experience," all of the people who deny non-thermal effects from RF exposure are bonded to industry. *Marino Test.* Sept. 16, 2016, at 859:3-5 (JA000859). That is a lot different from saying he disregards the views of anyone who disagrees with him. In fact, Dr. Marino explained very clearly why he disregards the reports of various organizations that claim that there are no non-thermal effects from RF exposure: "[t]hey are not peer reviewed in the sense of an independent process a journal would conduct," "the conflict of interest of the authors are never disclosed," "the reasoning is never explained," and "often times the authors are not indicated." *Marino Test.* Sept. 15, 2016, at 660:4-661:12 (JA000660-000661). He also testified that there are reports of

other groups that "argue against the idea that the FCC rules guard against health effects. They are advocates for their position in the same way that these alphabet agencies from industry are advocates for their position." *Id.* at 659:8-16 (JA000659).

PECO is correct that Dr. Marino testified that the European Commission's Scientific Committee on Emerging and Newly Identified Health Risks is bonded to industry. *Main Brief of PECO* at 33. He explained that industry bias is "the reason why about 20 societies have already petitioned the European Union to withdraw its accreditation report indicating egregious conflict of interest." *Marino Test.* Sept. 16, 2016, at 837:11-20 (JA000837). Dr. Marino did not testify that the World Health Organization EMF project is definitely bonded to industry. He testified that the EMF project was run for many years by a person who was definitely bonded to industry and replaced five years ago by another person "and she has repeatedly refused to identify the members or to provide anything to indicate that there are no conflicts of interest. So I may regard they are likely bonded because I haven't been able to penetrate the shell and find out the identity of the opinionators" *Id.* at 847:20-848:13 (JA000847-000848).

Dr. Marino rightly bases his opinions not on hearsay of dubious provenance, but on the primary science conducted by himself and others. *Id.* 854:5-16 (JA000854); *see also Marino Test.* Sept. 16, 2016, at 580:22-581:9 (JA000580-000581). PECO's criticism of him for disregarding the reports of various agencies that are not peer-reviewed and do not disclose the reasoning for the conclusions or

in which the conflicts of interest are not disclosed is baseless. An expert witness should do more than just parrot the statements of others.

PECO contends that Laure Sunstein Murphy and Maria Povacz cannot prove that they suffer from EHS, because their doctors "did no independent diagnostic tests to confirm the self-diagnosis of EHS." *Main Brief of PECO* at 34. PECO by now should understand that Complainants accept that they cannot prove to a medical certainty that they suffer from EHS because, as Dr. Marino testified, there is no consensus clinical diagnosis and it would cost hundreds of thousands of dollars to conduct that kind of test he conducted for his published study with EHS. *Main Brief of Laura Murphy* at 36-37. As explained *supra*, Section 1501 does not require proof of tort law causation, and the evidence is amply sufficient to demonstrate that PECO's plan to force RF exposure on the Complainants is unsafe (because it involves the potential for harm) and it is unreasonable. This same observation applies to PECO's assertion that the testimony of Complainants' physicians will not establish causation of health effects from PECO's smart meters. *Main Brief of PECO* at 35-36

PECO quotes Dr. Israel's testimony that, when the International Agency for Research on Cancer ("IARC"), a part of the WHO, says that RF exposure is a "possible" cause of cancer that means "there just isn't evidence to identify this as even a probable carcinogen." *Id.* at 37. PECO fails to offer any response to Complainants' argument that Dr. Israel lost all credibility when he testified in *Kreider* and in these proceedings that IARC's classification of RF exposure as a

"possible" carcinogen means IARC gave it a "clean bill of health" and that "limited evidence" means "no evidence." *Main Brief of Laura Sunstein Murphy* at 71. Complainants argued that for this and other reasons Dr. Israel should not be accepted as a qualified or credible expert witness. *Id.* at 68-71. PECO has no response to this point, but merely repeats Dr. Israel's assertions.

PECO contends that, although Dr. Marino is clearly qualified as an expert witness, nothing supports Complainants' claim that he is "uniquely" qualified. *Main Brief of PECO* at 38. The answer is that Dr. Marino's long career (more than 45 years) has focused on the biological effects of EE including more than 100 published papers, testimony in 20 cases, and three books—all dealing with the biological effects of EE. *Main Brief of Laura Sunstein Murphy* at 40-41. He is uniquely qualified in the sense that PECO would be hard pressed to find someone more qualified than Dr. Marino. In any event, Dr. Marino is far more qualified than either of PECO's experts. *Id.* at 68-69. Other than questioning why Dr. Marino is uniquely qualified, PECO offers no criticism of his credentials or response to Complainants' observation that Dr. Israel and Dr. Davis have limited qualifications and are not credible. *Id.* at 68-74.

PECO attempts to defend Dr. Davis' testimony that a consensus of scientists agree with his views. *Main Brief of PECO* at 39-40. Dr. Davis testified that he knows there is a consensus because "I go to scientific meetings and I talk to my colleagues. You know the scientific community does talk to each other. You know when you get the buzz of what people are thinking, and in that sense, you

become aware of the consensus." *Davis Test. Dec. 7, 2016*, at 1364:21-25 (JA001688). PECO offers no response to Complainants' observation that this is a subjective, non-scientific statement. *Main Brief of Laura Sunstein Murphy* at 54.

It bears emphasis that Dr. Davis, not Dr. Marino, attempted to buttress his opinions by claiming that a consensus of scientists agree with him. *Davis Test.* Dec. 6, 2016, at 1123:23-1124:22 (JA001447-001448); *Davis Test.* Dec. 7, 2016, at 1360:9-14 (JA001360). PECO's proof for that consensus is Dr. Davis' testimony, cited above: "the buzz of what people are thinking." The reality is that industry has been deadlocked with independent scientists for years, with industry insisting upon proof of conclusive evidence, which is an unreasonably high standard, and not one that the Commission should adopt in these proceedings.

PECO defends the reliance of its experts on hearsay reports of various agencies by noting that Pennsylvania law permits limited identification of textual materials and that this is not a jury trial in which a limiting instruction is required. *Main Brief of PECO* at 41-42. This misses the point entirely. As Complainants pointed out in their Opening Briefs, it adds little to a scientific argument to say that "others agree with me," particularly without taking care to ensure that the views of those others are not infected with industry bias. *Main Brief of Laura Sunstein Murphy* at 62-63. Dr. Davis testified that he did not make any efforts to consider whether the reports he relies upon are possibly biased, because he trusts the scientists who wrote them, a trust Dr. Davis does not extend to scientists who disagree with him. *Id.* at 63.

PECO's reliance on non-peer-reviewed material is egregiously wrong and should not be accepted by the Commission. If those reports are as credible and trustworthy as PECO's experts insist, then surely PECO's experts would have provided detailed testimony about those reports, who drafted them, how they reached their conclusions, and how they respond to the arguments of independent scientists like Dr. Marino. PECO's experts did not do anything like that. They just presented the names of the agencies and the ultimate conclusions. Looking solely at the testimony of PECO's witnesses, the Commission has no basis to accept these reports as credible or accurate. Given the obvious possibility for industry bias, PECO could and should have done more, and its failure to do so is a reason not to accept the conclusions of those reports. PECO may not bear the burden of proof in these proceedings, but it does bear the responsibility of demonstrating to the Commission that its positions are well supported, which it has failed to do.

PECO's only response to the May 2016 Report of the National Toxicology Program is to note that it is a draft. *Main Brief of PECO* at 43. Dr. Davis refused to give it any weight at all on this ground. *Main Brief of Laura Sunstein Murphy* at 65. Dr. Israel was unfamiliar with it. *Id.* This is unreasonable and proves that PECO's experts are not credible.

Unlike the various reports relied upon by PECO, the NTP Report is the product of a government agency. The "NTP is an interagency program whose mission is to evaluate agents of public health concern by developing and applying tools of modern toxicology and molecular biology." *See*

https://ntp.niehs.nih.gov/about/index.html. The NTP Report, which presented findings of cancer in rats *caused* by RF exposure, is more than just a draft. As the report itself states, "[t]he findings in this report were reviewed by expert peer reviewers selected by the NTP and National Institution of Health." CX-7 at 2 (JA006565-006567).

PECO may be content to put its head in the sand, but the Complainants, who could be forced to accept RF exposure against their will, do not have that luxury, and neither does the Commission. The NTP Report strongly supports a finding of potential for harm at exposure levels of RF below the FCC limits, as Dr. Marino testified and as Complainants pointed out in their Opening Briefs. *Main Brief of Laura Sunstein Murphy* at 65. This is yet another point as to which PECO has failed to offer any response. Until such time, if ever, that the NTP Report is withdrawn or modified in such a way as to cancel the finding about carcinogenicity of RF exposures, it is per se unreasonable for PECO to impose RF exposure on Complainants from PECO's meters as a condition of accepting electricity service from PECO..

III. PECO Has Failed to Respond to Key Points Made By Complainants About the Deficiencies in the Testimony of PECO's Expert Witnesses

In their Opening Briefs, Complainants demonstrated that PECO's expert witnesses are not credible because they have a limited basis of relevant knowledge and experience, they take extreme and unreasonable positions, and there were significant inconsistencies in their testimony. *Main Brief of Laura Sunstein Murphy* at 68-74. PECO seeks to dismiss these arguments as "quibbles."

Main Brief of PECO at 45 n.14 and 49 n.15. Asserting that something is a "quibble" is not a response to the substance of an argument. The Commission should disregard the testimony of PECO's experts for the reasons given.

Complainants also demonstrated in their Opening Briefs that the FCC limits are outdated and insufficiently protective. *Main Brief of Laura Sunstein Murphy* at 66. Complainants pointed out that, in the 31 years since the FCC limits were adopted, there is no evidence that they have ever been re-evaluated, even though the body that the FCC relied upon in setting the limits emphasized at the time that "it's to be expected that the exposure criteria set out in this report will be evaluated periodically in the future and possibly revised as new information becomes available." *Id*. at 67. PECO's only response is that Dr. Davis testified that the FCC continues to consider whether there are adverse biological effects from non-thermal exposure levels, but considers the scientific effects to be "ambiguous and unproven," based on a single statement without explanation on the FCC website. *Main Brief of PECO* at 46.

The Commission should not accept Dr. Davis' testimony on this point because he failed to explain how he knows that the FCC continues to monitor the issue, and there is no dispute that the FCC originally relied on two outside organizations to set the standards. *Davis Test. Dec. 7, 2016*, at 1350:24-1353:23 (JA001674-001677). It is impossible to believe Dr. Davis when he says the FCC continues to monitor the science on this issue when there was no evidence presented of what that continued monitoring consists of, who is doing it, what they have

looked at, and how the FCC reached a conclusion to leave the correct limits in place, if that is indeed what has happened. Given the rise and now ubiquity of cell phones and Wi-Fi since 1986, and the interest that the issue of possible health effects from RF exposure has received (for example, the NTP Report and the Interphone Study), it stands to reason that if the FCC had given any serious attention to the issue since 1986 there would be some evidence of it other than a single sentence on the FCC website.

PECO misstates the record when it contends that "[i]n establishing and maintaining these standards, the FCC consults closely" with other government agencies. *Main Brief of PECO* at 45. In the testimony cited by PECO in support of that statement, Dr. Davis testified only that the FCC consulted with other agencies in *establishing* the limits, with no reference to *maintaining* the limits. *Murphy Rebuttal Testimony of Christopher Davis* at 13:23-14:6 (JA004152-004153); *Povacz Rebuttal Testimony of Christopher Davis* at 14:11-17 (JA002683).

PECO is wrong to suggest that the average exposure from an AMI meter is many millions of times lower than the FCC limits. *Main Brief of PECO* at 46. Complainants demonstrated in their Opening Briefs that reference to exposure levels averaged over times is highly misleading and makes no sense. *Main Brief of Laura Sunstein Murphy* at 42-44. PECO offers no response to this point.

PECO and Dr. Davis state that "even at peak exposure, the radiofrequency fields from an electric AMI meter are 40 times smaller than the FCC

average exposure standards."[4] *Main Brief of PECO* at 46. That is true, but Dr. Marino testified that RF exposure levels comparable to that emitted by smart meters have repeatedly been shown in animal studies and epidemiological studies to cause effects, and that these two bases combined are powerful evidence of the potential to cause harm in humans. *Main Brief of Laura Sunstein Murphy* at 31-33. PECO did not respond to this point.

PECO contends that the RF exposure from an AMI meter is substantially lower than that of the legacy AMR meter. *Main Brief of PECO* at 46-47. That statement was based on a comparison of averages. Complainants pointed out in their Opening Briefs that Dr. Davis admitted that RF exposure from an AMI meter is twice as high as that from an AMR meter when peak values are compared. *Main Brief of Laura Sunstein Murphy* at 47. PECO did not respond to this point.

PECO claims, based on Dr. Davis' testimony, that exposure from smart meters is lower than from numerous other sources. *Main Brief of PECO* at 47. But Dr. Davis admitted that all these calculations are based on averages. *Davis Test. Dec. 7, 2016*, at 1229:12-24 (JA001553). As Complainants clearly explained, use of averages makes all these comparisons irrelevant, a point to which PECO has not responded.

[4] Complainants' counsel acknowledges an error in the opening brief when counsel stated that, when peak values are compared, "the FCC limit is 60 and the exposure of a distance of any meter is 16." *Main Brief of Laura Sunstein Murphy* at 44. The reference to the FCC limit in that sentence should have been 600.

PECO provides a summary of Dr. Israel's qualifications and testimony. *Main Brief of PECO* at 49-50. PECO fails, however, to respond to Complainants' arguments about why he is not credible, his credentials are limited, and the specific testimony PECO summarizes is both flawed and irrelevant. *Main Brief of Laura Sunstein Murphy* at 50-53, 71-74.

IV. PECO Has Failed to Offer Complainants Any Alternatives That Would Not Include Forced RF Exposure

PECO contends that it has offered Complainants reasonable alternatives. *Main Brief of PECO* at 50-51. PECO makes no reference to any specific alternatives that do not involve exposure to RF. PECO suggests that it might be possible to install the smart meters elsewhere on Complainants' properties. This is unworkable for persons concerned about RF exposure, because wherever PECO placed the meter on their properties Complainants would have to avoid that part of their property by a wide circumference. It is bad enough that Complainants have to accept exposure to RF when they leave their homes and property. They either never had or have already removed or hard-wired all their computers, garage door openers, and other Wi-Fi devices. At the very least they should be offered peace of mind by knowing that there is no RF exposure from devices on their property. It is no solution for PECO to place the meters elsewhere on their properties, which would result in constructive eviction of Complaints from a wide circumference of wherever the meters are placed.

It makes much more sense for PECO to devise a system by which it can collect usage data either from a hard-wired device, by sending a meter reader out periodically, or some other arrangement. PECO used to use meter readers for all of its customers. It is now saving presumably millions of dollars in reduced costs. It should be able to dedicate a tiny fraction of those savings to devising an alternative solution for Complainants and the very few other PECO customers with similar concerns who have eliminated RF exposure in their lives and present doctors' recommendations about avoiding RF exposure.

V. PECO's Reliance On Decisions by Other States' Public Utility Commissions Regarding Smart Meter Programs Is Misplaced Because All of Those States Offer Consumers the Choice to Opt Out

PECO urges the Commission to follow the lead of public utility commissions in other states that have found RF exposure from smart meters to be safe and reasonable. *Main Brief of PECO* at 52-55. As Complainants explained in their Opening Briefs, it appears that all of those states offer utility customers the choice to opt out of smart meter deployment. *Main Brief of Laura Sunstein Murphy* at 81 n.6. PECO does not deny this. Thus, it appears that the Commission is faced with an issue not addressed by any other public utility commission: whether a utility can force RF exposure on a customer, over a customer's objection and against the recommendation of his or her physician? For all of the reasons explained above and in Complainants' Opening Briefs, the answer should be "no."

This one factor is sufficient to distinguish all of the other state PUC decisions cited by PECO. But putting that aside, PECO's request that the

Commission defer to the decisions in other states makes a mockery of these proceedings. It is unreasonable of PECO to ask Complainants and the Commission to sift through all of those state PUC decisions and the evidence presumably considered in reaching those decisions, to decide what, if any, bearing they have on the decision before the Commission here. Additionally, if the Commission were to play a game of "follow the leader" to simply adopt a decision of another state utility commission, without more, as suggested by PECO, that would violate the cardinal rule that PECO must present admissible evidence in support of its positions.

PECO's request that the Commission consider these decisions from other states also fails to recognize that they may have been based on outdated science. From the dates supplied by PECO in its synopses of those decisions, for example, it appears that none of them had the benefit of the 2016 NTP Report that found cancer in rats caused by RF exposure below FCC limits.

PECO's position also fails to recognize that, whatever evidence may have been presented in the other jurisdiction, Complainants here presented the testimony of Dr. Marino, who clearly established a basis for a finding that RF exposure could cause harm. PECO has not even attempted to rebut his testimony, but instead rests on the legal argument that Complainants did not prove tort law causation.

PECO should not be permitted to rely on evidence and hearings in other states. Instead, the Commission's decision should rise or fall based upon the evidence presented to it, not on evidence it never had the chance to consider.

But if the Commission decides to look to other states for guidance, then it must consider what role the presence of opt out provisions in those states played in those decisions. In Maine, for example, the presence of an opt out provision was critical to the decision that Central Maine Power Company's ("CMP's") "installation and operation of its smart meter system poses no credible threat of harm to the public or CMP's customers and is therefore safe on this record, and is consistent with [CMP's] obligation to furnish safe, reasonable, and adequate facilities and services." Maine Public Utilities Commission Order, Docket Nos. 2011-00262, 2012-00412, 2014 Me. PUC LEXIS 192, at *186 (December 19, 2014).

In May and June 2011, the Maine PUC made no specific findings about safety of smart meters, but ordered that CMP provide its residential customers with two alternatives to the installation of a smart meter: "(1) an electro-mechanical meter ('existing meter option'); or (2) a standard smart meter with the internal network interface cord (NIC) operating in a receive-only mode ('transmitter off option')." *Id.* at *5-6. The Maine PUC also ordered "that customers electing either 'opt-out' option be assessed both an initial overtime charge and a monthly charge to cover the incremental costs CMP would incur to provide and maintain the opt-out options." *Id.* at *6 (footnote omitted).

Subsequently, the Maine Supreme Court found that the Maine PUC had not resolved health and safety issues raised by a CMP customer. *Id.* at *12. The Order of December 19, 2014, was on remand for the Maine PUC to make that determination. *Id.* at *13

Three of four Maine PUC Commissioners participated in the December 19, 2014 decision and only two (Commissioners Littell and Vannoy) offered rationales for the decision. Commissioner Littell reviewed the evidence presented by customers who expressed concern about the safety of smart meters *Id.* at *124-38. He expressed the view that proving a causal relationship is unnecessary for the Commission to take measures to protect customer safety as to smart meters:

> I do not agree with CMP's experts when they suggest that a causal relationship is necessary -- essentially requiring a classification of AMI meters as a known carcinogen -- for this Commission to take any measures to protect customer safety. This would shift the burden to the Complainants of proving causation of a safety risk which violates the Commission practice of putting the burden on the utility but also the governing statute which codifies an affirmative obligation on the utility to "furnish safe, reasonable and adequate facilities and service.

Id. at *132.

He further opined:

> I find in light of the WHO/IARC reclassification as a possible carcinogen and the evidence presented in this case that low-cost and no-cost risk mitigation measures are advisable. The Section 101 and Section 301 obligation on the utility and this Commission to provide safe service make it appropriate to consider low cost or no cost mitigation of risk. To be specific, it is appropriate to consider low cost or no cost mitigation of risk where there is some credible evidence of risk, but that credible evidence of a risk falls short of a likelihood of harm and short of a credible threat of harm to the health and safety of customers. Such consideration of reasonable risk mitigation is part of the safety determination under Sections 101 and 301.

Id. at *133-34.

Commissioner Littell further opined that he would "incorporate this reasonable low cost or no cost measure for those who submit documentation of a licensed doctor's or medical practitioner's treatment recommendation to have an AMI meter in a no transmit mode or turned off at his primary residence to qualify for a no-cost opt-out option." *Id.* at *138.

Commissioner Vannoy also reviewed and discussed the evidence, including the "precautionary principle, which is "an approach to scientific evidence and policy making that prescribes taking measures to forestall negative outcomes before they occur." *Id.* at 158-59. (Citation omitted). He also said that "[i]t should be noted that the Commission's adoption of a means for customers to 'opt out' is, in essence, an application of the precautionary principle." *Id.* at *160-161. He noted that "[t]he issue of whether customers should have to pay to opt-out in my view, is not before the Commission in this proceeding." *Id.* at *184 n.65.

Based on the reasoning expressed by Commissioners Littell and Vannoy, which include specific reference to an opt out, the Maine PUC concluded that CMP's smart meter program satisfied the Maine PUC statute. *Id.* at *186. This discussion demonstrates that the opt-out feature provided by the Maine PUC was critical to its conclusion about the safety and reasonableness of CMP's smart meter program. Presumably, without the opt-out feature, the Maine PUC would have reached a different conclusion. Choice is critical. It is the antithesis of what PECO offers its customers who are concerned about RF exposure and whose physicians have recommended that they avoid it.

Far from supporting PECO's argument, the recognition that (1) other jurisdictions provide customers the choice to opt out, and (2) that the presence of an opt-out provision may very well have contributed to any findings of safety and reasonableness, as was clearly the case in Maine, prove that PECO's position in these proceedings is wrong. The Commission should apply the precautionary principle and hold that PECO cannot force RF exposure upon Complainants, but instead should defer to their judgment as exemplified in the way they lead their lives to avoid RF exposure, and the medical recommendations of their doctors in matters that could possibly affect their health.

CONCLUSION

For the reasons set forth above and set forth in her Opening Brief, complainant Laura Sunstein Murphy asks the Commission to issue an order in this proceeding that states:

1. That the Commission requires and directs PECO to provide accommodations for her pursuant to 66 Pa. C.S. § 1501;

2. That such accommodation means that PECO shall provide electrical service to her home without requiring the installation of any device that emits radio frequency electromagnetic energy.

Respectfully submitted,

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