B.

Petitioners' remaining challenges under the APA are unavailing.

Petitioners first argue that the Commission failed to respond to record evidence that exposure to RF radiation at levels below the Commission's current limits may cause cancer. Specifically, Petitioners argue the Commission failed to mention the IARC's classification of RF radiation as possibly carcinogenic to humans, and its 2013 monograph regarding that classification, on which the Commission's notice of inquiry specifically sought comment. Petitioners also argue that the Commission failed to adequately respond to two 2018 studies—the National Toxicology Program ("NTP") study and the Ramazzini Institute study—that found increases in the incidences of certain types of cancer in rodents exposed to RF radiation. Had these 2018 studies been available prior to the IARC's publication of its monograph, Petitioners assert, the IARC would have likely classified RF radiation as "probably carcinogenic," rather than "possibly carcinogenic." This is so, according to Petitioners, because the IARC will classify an agent as "possibly carcinogenic" if there is "limited evidence" that it causes cancer in humans and animals, and as "probably carcinogenic" if there is "limited evidence" that it causes cancer in humans and "sufficient evidence" that it causes cancer in animals. In its 2013 monograph, the IARC found "limited evidence" that RF radiation causes cancer in humans and animals, and therefore classified RF radiation as "possibly carcinogenic." Int'l Agency for Rsch. on Cancer, *Non-Ionizing Radiation, Part 2*: *Radiofrequency Electromagnetic Fields*, 102 IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS 419 (2013) (emphases omitted). Petitioners assert that the NTP and Ramazzini Institute studies provide "sufficient evidence" that RF radiation

causes cancer in animals. Therefore, according to Petitioners, had those studies been available prior to the IARC's publication of its monograph, the IARC would have found "limited evidence" that RF radiation causes cancer in humans and "sufficient evidence" that it causes cancer in animals, and would have accordingly classified RF radiation as "probably carcinogenic."

Although the Commission's failure to make any mention of the IARC monograph does not epitomize reasoned decision making, we find that the Commission's order adequately responds to the record evidence that exposure to RF radiation at levels below the Commission's current limits may cause cancer. In contrast to its silence regarding non-cancerous effects, the order provides a reasoned response to the NTP and Ramazzini Institute studies. It explains that the results of the NTP study "cannot be extrapolated to humans because (1) the rats and mice received RF radiation across their whole bodies; (2) the exposure levels were higher than what people receive under the current rules; (3) the duration of exposure was longer than what people receive; and (4) the studies were based on 2G and 3G phones and did not study WiFi or 5G." *2019 Order*, 34 FCC Rcd. at 11,693 n.33. And the order cites a response to both studies published by the International Commission on Non-Ionizing Radiation Protection that provides a detailed explanation of various inconsistencies and limitations in the studies and concludes that "consideration of their findings does not provide evidence that radiofrequency EMF is carcinogenic." INT'L COMM'N ON NON-IONIZING RADIATION PROT., ICNIRP NOTE ON RECENT ANIMAL CARCINOGENESIS STUDIES 6 (2018), https://www.icnirp.org/cms/upload/publications/ICNIRPnote2018.pdf; *see also 2019 Order*, 34 FCC Rcd. at 11,693 n.34. Petitioners' contention that the IARC would have classified RF radiation as "probably carcinogenic" had the NTP and Ramazzini Institute studies

been published earlier is speculative, particularly in light of the International Commission on Non-Ionizing Radiation Protection's evaluation of those studies. And the IARC monograph's classification of RF radiation as "possibly carcinogenic" is not so contrary to the Commission's determination that exposure to RF radiation at levels below its current limits does not cause cancer as to render that determination arbitrary or capricious.

Petitioners also argue that the Commission's order impermissibly fails to respond to various "additional legal considerations." Specifically, Petitioners argue that the order (i) ignores "express invocations of constitutional, statutory and common law based individual rights," including property rights and the rights of "bodily autonomy and informed consent"; (ii) fails to explain whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act; (iii) does not assess the costs and benefits associated with maintaining the Commission's current limits; (iv) does not resolve the question of whether "those advocating more protective limits have to prove the existing limits are inadequate," or whether the Commission carries the burden of proving that its existing limits are adequate; and (v) overlooks that the Supreme Court's decision in *Jacobson v. Massachusetts*, 197 U.S. 11 (1905), "flatly requires that the Commission allow for some remedy for those who suffer from exposure." Pet'rs' Br. at 84–101.

These arguments are not properly before us. The Communications Act provides that a petition for reconsideration is a "condition precedent to judicial review" of "questions of fact or law upon which the Commission . . . has been afforded no opportunity to pass." 47 U.S.C. § 405(a). We will accordingly only consider a question raised before us if "a reasonable Commission *necessarily* would have seen the

question . . . as part of the case presented to it." *NTCH, Inc. v. FCC*, 841 F.3d 497, 508 (D.C. Cir. 2016) (quoting *Time Warner Ent. Co. v. FCC*, 144 F.3d 75, 81 (D.C. Cir. 1998)). Petitioners did not submit a petition for reconsideration to the Commission, and they point to no comments raising their "additional legal considerations" in such a manner as to necessarily indicate to the Commission that they were part of the case presented to it.

Although Petitioners assert that the "Cities of Boston and Philadelphia specifically flagged [the issue of whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act] and sought clarification," Pet'rs' Br. at 86, they are incorrect. The Cities of Boston and Philadelphia merely observed that the Second Circuit's decision in *Cellular Phone Taskforce* did not address whether "'electrosensitivity' [is] a cognizable disability under the Americans with Disabilities Act," J.A. 4,598. And the Cities noted that "the FCC and its sister regulatory agencies share responsibility for adherence to the ADA," J.A. 4,598–99, and urged the Commission to "lead in advice to electrosensitive persons about prudent avoidance," J.A. 4,599. This did not put the Commission on notice that the question whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act was part of the case presented to it. Nor did a comment asserting that "[t]he telecommunications Act should not be interpreted to injure an identifiable segment of the population, exile them from their homes and their city, leave them no place where they can survive, and allow them no remedy under City, State or Federal laws or constitutions." J.A. 10,190. And Petitioners point to no comments that did a better job of flagging their other "additional legal considerations" for the Commission. The Commission therefore did not have an opportunity to pass on

these arguments, so we may not review them. 47 U.S.C. § 405(a).

C.

Petitioners also argue that NEPA required the Commission to issue an EA or EIS regarding its decision to terminate its notice of inquiry.

Petitioners are wrong. The Commission was not required to issue an EA or EIS because there was no ongoing federal action regarding its RF limits. The Commission already published an assessment of its existing RF limits that "'functionally' satisfied NEPA's requirements 'in form and substance.'" *EMR Network*, 391 F.3d at 272 (quoting *Cellular Phone Taskforce*, 205 F.3d at 94–95). NEPA obligations attach only to "proposals" for major federal action. *See* 42 U.S.C. § 4332(c); *see also* 40 C.F.R. § 1502.5. Once an agency has satisfied NEPA's requirements, it is only required to issue a supplemental assessment when "there remains major federal action to occur." *W. Org. of Res. Councils v. Zinke*, 892 F.3d 1234, 1242 (D.C. Cir. 2018) (internal quotation marks omitted) (quoting *Marsh v. Ore. Nat'l Res. Council*, 490 U.S. 360, 374 (1989)). An agency's promulgation of regulations constitutes a final agency action that is not ongoing. *Id.* at 1243. Once an agency promulgates a regulation and complies with NEPA's requirements regarding that regulation, it is not required to conduct any supplemental environmental assessment, *even if* its original assessment is outdated. *Id.* at 1242. Such is the case here. As we explained in *EMR Network* in response to the argument that new data required the Commission to issue a supplemental environmental assessment of its RF guidelines under NEPA, "the regulations having been adopted, there is at the moment no ongoing federal action, and no duty to

supplement the agency's prior environmental inquiries." 391 F.3d at 272 (internal quotation marks and citation omitted).

That the Commission voluntarily initiated an inquiry to "determine whether there is a need for reassessment of the Commission radiofrequency (RF) exposure limits and policies" does not change the analysis. *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,501. As the Supreme Court explained long ago, "the mere contemplation of certain action is not sufficient to require an impact statement" under NEPA, *Kleppe v. Sierra Club*, 427 U.S. 390, 404 (1976) (internal quotation marks omitted), because, as in this case, "the contemplation of a project and the accompanying study thereof do not necessarily result in a proposal for major federal action," *id.* at 406. *See also Pub. Citizen v. Off. of U.S. Trade Representatives*, 970 F.2d 916, 920 (D.C. Cir. 1992) ("In accord with *Kleppe*, courts routinely dismiss NEPA claims in cases where agencies are merely contemplating a particular course of action but have not actually taken any final action at the time of suit.") (collecting cases). Were the Commission to propose revising its RF exposure guidelines, it might be required to prepare NEPA documentation. But since the Commission for now has not proposed to alter its guidelines, it need not yet conduct any new environmental review.

III.

For the reasons given above, we grant the petitions in part and remand to the Commission to provide a reasoned explanation for its determination that its guidelines adequately protect against harmful effects of exposure to radiofrequency radiation unrelated to cancer. It must, in particular, (i) provide a reasoned explanation for its decision to retain its testing procedures for determining whether cell phones and other portable electronic devices comply with its guidelines, (ii)

address the impacts of RF radiation on children, the health implications of long-term exposure to RF radiation, the ubiquity of wireless devices, and other technological developments that have occurred since the Commission last updated its guidelines, and (iii) address the impacts of RF radiation on the evironment. To be clear, we take no position in the scientific debate regarding the health and environmental effects of RF radiation—we merely conclude that the Commission's cursory analysis of material record evidence was insufficient as a matter of law. As the dissenting opinion indicates, there may be good reasons why the various studies in the record, only some of which we have cited here, do not warrant changes to the Commission's guidelines. But we cannot supply reasoning in the agency's stead, *see SEC v. Chenery Corp.*, 318 U.S. 80, 87–88 (1943), and here the Commission has failed to provide any reasoning to which we may defer.

So ordered.

KAREN LECRAFT HENDERSON, *Circuit Judge*, dissenting in part: "[A] court is not to substitute its judgment for that of the agency." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). We thus must "uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." *Id.* (quoting *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 286 (1974)). I believe my colleagues' limited remand contravenes these first principles of administrative law. Because I would deny the petitions in full, I respectfully dissent from Part II.A.i.–iv. and Part III of the majority opinion.

I.

It is important to emphasize how deferential our standard of review is here—where, first, an agency's decision to terminate a notice of inquiry without initiating a rulemaking occurred after the agency opened the inquiry on its own and, second, the inquiry involves a highly technical subject matter at the frontier of science. As the majority recognizes, "[t]he arbitrary and capricious standard of the Administrative Procedure Act 'encompasses a range of levels of deference to the agency.'" Maj. Op. 8 (quoting *Am. Horse Prot. Ass'n v. Lyng*, 812 F.2d 1, 4 (D.C. Cir. 1987)). The majority further acknowledges that the Federal Communications Commission's (Commission or FCC) "order is entitled to a high degree of deference." *Id.* at 9. And our precedent also makes plain that "[i]t is only in the rarest and most compelling of circumstances that this court has acted to overturn an agency judgment not to institute rulemaking." *WWHT, Inc. v. FCC*, 656 F.2d 807, 818 (D.C. Cir. 1981); *see also Cellnet Commc'n, Inc. v. FCC*, 965 F.2d 1106, 1111 (D.C. Cir. 1992) ("an agency's refusal to initiate a rulemaking is evaluated with a deference so broad as to make the process akin to non-reviewability"). For the reasons that follow, I believe the Commission's order does not fit those rarest and most compelling circumstances.

A.

We have held that research articles containing tentative conclusions do not provide a basis for disturbing an agency's decision not to initiate rulemaking. *See EMR Network v. FCC*, 391 F.3d 269, 274 (D.C. Cir. 2004). Nevertheless, the majority rejects reaching the same conclusion here regarding the petitioners' assertion that radiofrequency (RF) radiation exposure below the Commission's limits can cause negative health effects unrelated to cancer. To do so, it relies on five research articles in an over 10,500-page record. *See* Maj. Op. at 10–11.[1]

A close inspection of the five research articles confirms that they also "are nothing if not tentative." *EMR Network*, 391 F.3d at 274. The Foerster article concludes "[o]ur findings *do not provide conclusive evidence* of causal effects and should be *interpreted with caution* until confirmed in other populations." Joint Appendix (J.A.) 6,006 (Milena Foerster et al., *A Prospective Cohort Study of Adolescents' Memory Performance and Individual Brain Dose of Microwave Radiation from Wireless Communication*, 126 ENV'T HEALTH PERSPS. 077007 (July 2018)) (emphases added).[2] The Lai

[1] "The record in an informal rulemaking proceeding is 'a less than fertile ground for judicial review' and has been described as a 'sump in which the parties have deposited a sundry mass of materials.'" *Pro. Drivers Council v. Bureau of Motor Carrier Safety*, 706 F.2d 1216, 1220–21 (D.C. Cir. 1983) (quoting *Nat'l Res. Def. Council, Inc. v. SEC*, 606 F.2d 1031, 1052 (D.C. Cir. 1979)).

[2] *See also* J.A. 5,995 ("[T]he health effects of [exposure to radiofrequency electromagnetic fields (RF-EMFs)] are still unknown. . . . [T]o date studies addressing this topic have produced inconsistent results."); J.A. 6,005 ("Although we found decreases in figural memory, some experimental and epidemiological studies on

article provides a similarly murky picture of the current science. *See* J.A. 5,320–68 (Henry Lai, *A Summary of Recent Literature (2007–2017) on Neurological Effects of Radiofrequency Radiation*, *in* MOBILE COMMC'NS & PUB. HEALTH 187–222 (M. Markov ed., 2018)). In summarizing the results of human studies on the behavioral effects of RF radiation, the Lai article lists 31 studies that showed *no significant* behavioral effects compared to 20 studies that showed behavioral effects. *See* J.A. 5,327–32. Moreover, of the 20 studies that showed a behavioral effect, at least four found behavioral *improvements*, not negative health effects.

Even the Yakymenko article, which asserts that 93 of 100 peer-reviewed studies found low-intensity RF radiation induces oxidative effects in biological systems, fails to address the critical issue—whether RF radiation below the Commission's current limits can cause negative health effects. *See* J.A. 5,243–58 (Igor Yakymenko et al., *Oxidative Mechanisms of Biological Activity of Low-Intensity Radiofrequency Radiation*, ELECTROMAGNETIC BIOLOGY & MED., EARLY ONLINE, 1–16 (2015)). Specifically, the Yakymenko article discusses the International Commission on Non-Ionizing Radiation Protection's (ICNIRP) recommended RF exposure limit—a specific absorption rate of 2 W/kg. *See* J.A. 5,243–44. But the ICNIRP's recommended RF exposure limit is significantly higher than the Commission's current limit—0.08 W/kg averaged over the whole body and a peak spatial-average of 1.6 W/kg over any 1 gram of tissue. *See* 47 C.F.R. § 1.1310(c). Accordingly, it is uncertain how many, if

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RF-EMF found *improvements* in working memory performance.") (emphasis added).

any, of the referenced peer-reviewed studies were conducted at RF radiation levels below the Commission's current limits.[3]

Given this record, I believe we should have arrived at the same conclusion we did in *EMR Network*—"nothing in th[e]se studies so strongly evidenc[es] risk as to call into question the Commission's decision to maintain a stance of what appears to be watchful waiting." *EMR Network*, 391 F.3d at 274. "An agency is not obliged to respond to every comment, only those that can be thought to challenge a fundamental premise." *MCI WorldCom, Inc. v. FCC*, 209 F.3d 760, 765 (D.C. Cir. 2000). A review of the five articles on which the majority opinion relies makes plain that the articles do not challenge a fundamental premise of the Commission's order. Instead, it "cherry-pick[s] the factual record to reach [its] conclusion." *Ortiz-Diaz v. U.S. Dep't of Hous. & Urb. Dev.*, 867 F.3d 70, 79 (D.C. Cir. 2017) (Henderson, J., concurring in the judgment).

My colleagues assert that "[t]he dissenting opinion portrays this case as about the Commission's disregard of just five articles." Maj. Op. 22. But their attempt to "turn the tables" plainly fails. It is they who chose the five articles, *see* Maj. Op. 10–11, to rely on as the basis for their remand, *see id.* at 15 ("the Commission's order remains bereft of any explanation as to why, *in light of the studies in the record*, its guidelines remain adequate") (emphasis altered); *id.* at 18 ("*the studies in the record* to which Petitioners point *do* challenge a fundamental premise of the Commission's decision to terminate its notice of inquiry") (first emphasis added). I discuss the five articles *only* to demonstrate that the studies "are nothing if not tentative." *EMR Network*, 391 F.3d at 274. Because the studies on which the majority relies plainly are

[3] The BioInitiative Report the majority opinion cites is hardly worth discussing because the self-published report has been widely discredited as a biased review of the science.

tentative, they do not challenge a fundamental premise of the Commission's decision and therefore cannot provide the basis for the majority's limited remand under our precedent.[4]

B.

I reach the same conclusion regarding the majority's remand of the petitioners' environmental harm argument. *See* Maj. Op. 21–22. The majority relies on a 2014 letter from the U.S. Department of the Interior (Interior) to the U.S. Department of Commerce about, *inter alia*, the impact of communications towers on migratory birds. But the Interior letter itself concedes that "[t]o date, no independent, third-party field studies have been conducted in North America on impacts of tower electromagnetic radiation on migratory birds." J.A. 8,383.

Moreover, the petitioners did not raise the Interior letter in the environmental harm section of their briefs. "We apply forfeiture to unarticulated [legal and] evidentiary theories not only because judges are not like pigs, hunting for truffles buried in briefs or the record, but also because such a rule ensures fairness to both parties." *Jones v. Kirchner*, 835 F.3d 74, 83 (D.C. Cir. 2016) (alteration in original) (citation omitted). And finally, the environmental harm studies on which

[4] The majority's hand wave to other record information, *see* Maj. Op. 22–23, does not carry the day. Rather than provide "substantial information," *id.* at 22, the cited material consists primarily of letters expressing generalized concerns about RF limits worldwide.

the petitioners *did* rely "are nothing if not tentative." *EMR Network*, 391 F.3d at 274.[5]

C.

More importantly, the majority's limited remand runs afoul of our precedent on this precise subject matter. In *EMR Network*, the petitioner asked "the Commission to initiate an inquiry on the need to revise [its] regulations to address the non-thermal effects" of RF radiation. 391 F.3d at 271. In denying the petition, we concluded "the [Commission]'s decision not to leap in, at a time when the [Environmental Protection Agency (EPA)] (and other agencies) saw no compelling case for action, appears to represent the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts." *Id.* at 273.

This time around, the majority faults the Commission for the U.S. Food and Drug Administration's (FDA) allegedly "conclusory statements" in response to the Commission's 2013 notice of inquiry. *See* Maj. Op. 14. The crux of the majority's position is that "[t]he statements from the FDA on which the Commission's order relies are practically identical to the Secretary's statement in *American Horse* and the

[5] *See, e.g.*, J.A. 5,231 (Albert Manville, II, *A Briefing Memorandum: What We Know, Can Infer, and Don't Yet Know about Impacts from Thermal and Non-Thermal Non-Ionizing Radiation to Birds and Other Wildlife* 2 (2016)) ("the direct relationship between electromagnetic radiation and wildlife health continues to be complicated and in cases involving non-thermal effects, still unclear"); J.A. 6,174 (Ministry of Env't & Forest, Gov't of India, *Report on Possible Impacts of Communication Towers on Wildlife Including Birds and Bees* 4 (2011)) ("exact correlation between radiation of communication towers and wildlife, are not yet very well established").

Commission's statement in *American Radio*." *Id.*[6] But the analogy to *American Horse* and *American Radio* does not hold water. The majority's Achilles' heel is the fact that the Commission and the FDA are, to state the obvious, distinct agencies.

In *American Horse*, the appellant relied on the results of a study commissioned by the U.S. Department of Agriculture (Agriculture) to support its request for revised Agriculture regulations. *Am. Horse*, 812 F.2d at 2–3. The study found that devices Agriculture had declined to prohibit caused effects falling within the statutory definition of the condition known as "sore";[7] and the Congress had charged Agriculture to eliminate the practice of soring show horses. *Am. Horse*, 812 F.2d at 2–3. Against this backdrop, we found the Agriculture Secretary's "two conclusory sentences [dismissing the need to revise agency regulations] . . . insufficient to assure a reviewing court that the agency's refusal to act was the product of reasoned decisionmaking." *Id.* at 6. But an agency head's terse dismissal of his own agency's study is not the case here. First, as noted *supra*, there is no conclusive study in the record, much less one commissioned by the agency whose regulations are being considered for revision. Instead, the record contains dozens of highly technical studies from various sources—the credibility and findings of which we are ill-equipped to evaluate. And crucially, unlike in *American Horse*, the Commission requested the opinion of the FDA—the agency charged with "establish[ing] and carry[ing] out an electronic

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[6] *See Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227 (D.C. Cir. 2008).

[7] *See* 15 U.S.C. § 1821(3) ("The term 'sore' when used to describe a horse means that [as a result of any substance or device used on a horse's limb] such horse suffers, or can reasonably be expected to suffer, physical pain or distress, inflammation, or lameness when walking, trotting, or otherwise moving . . . .").

product radiation control program," 21 U.S.C. § 360ii(a)—studied that opinion and explained why it relied thereon in making its decision.

Similarly, in *American Radio*, the studies summarily dismissed by the FCC were studies the FCC sought to evaluate *itself*; we remanded for the FCC to explain why it failed to do so. *See Am. Radio*, 524 F.3d at 241. Moreover, *American Radio* addressed the reasoning underlying the FCC's *promulgation* of a rule, an action subjected to far less deference than an agency's decision not to initiate a rulemaking.[8]

I believe the Commission reasonably relied on the conclusions of the FDA, the agency statutorily charged with protecting the public from RF radiation. *See* 21 U.S.C. § 360ii(a) (FDA "shall establish and carry out an electronic product radiation control program designed to protect the public health and safety from electronic product radiation").[9] Our precedent is well-settled that "[a]gencies can be expected to 'respect [the] views of such other agencies as to those

[8] *See, e.g.*, *ITT World Commc'ns, Inc. v. FCC*, 699 F.2d 1219, 1245–46 (D.C. Cir. 1983), *rev'd on other grounds*, 466 U.S. 463 (1984) ("Where an agency promulgates rules, our standard of review is diffident and deferential, but nevertheless requires a searching and careful examination of the administrative record to ensure that the agency has fairly considered the issues and arrived at a rational result. Where, as here, an agency chooses *not* to engage in rulemaking, our level of scrutiny is even more deferential . . ." (emphasis in original) (footnotes and internal quotations omitted)).

[9] *See also In re Guidelines for Evaluating the Env't Effects of Radiofrequency Radiation*, 11 FCC Rcd. 15,123, 15,130 ¶ 18 (1996) ("The FDA has general jurisdiction for protecting the public from potentially harmful radiation from consumer and industrial devices and in that capacity is expert in RF exposures that would result from consumer or industrial use of hand-held devices such as cellular telephones.").

problems' for which those 'other agencies are more directly responsible and more competent.'" *City of Bos. Delegation v. FERC*, 897 F.3d 241, 255 (D.C. Cir. 2018) (second alteration in original) (quoting *City of Pittsburgh v. Fed. Power Comm'n*, 237 F.2d 741, 754 (D.C. Cir. 1956)). That is precisely what the Commission did here.

The Commission's *2013 Notice of Inquiry* explained that the Commission intended to rely on, *inter alia*, the FDA to determine whether to reassess its own RF exposure limits. *See In re Reassessment of Fed. Commc'ns Comm'n Radiofrequency Exposure Limits & Policies*, 28 FCC Rcd. 3,498, 3,501 ¶ 6 (2013) (*2013 Notice of Inquiry*) ("Since the Commission is not a health and safety agency, we defer to other organizations and agencies with respect to interpreting the biological research necessary to determine what [RF radiation] levels are safe."). And the Commission has consistently deferred to expert health and safety agencies in this context. *See id.* at 3,572 ¶ 211 (RF exposure limits adopted in 1996 "followed recommendations received from the [EPA], the [FDA], and other federal health and safety agencies").[10]

The Commission was true to its word. On March 22, 2019, it asked the FDA if changes to the RF exposure limits were

[10] *See also In re Guidelines for Evaluating the Env't Effects of Radiofrequency Radiation*, 12 FCC Rcd. 13,494, 13,505 ¶ 31 (1997) ("It would be impracticable for us to independently evaluate the significance of studies purporting to show biological effects, determine if such effects constitute a safety hazard, and then adopt stricter standards that [sic] those advocated by federal health and safety agencies. This is especially true for such controversial issues as non-thermal effects and whether certain individuals might be 'hypersensitive' or 'electrosensitive.'").

warranted by the current scientific research.[11] On April 24, 2019, the FDA responded:

> FDA is responsible for the collection and analysis of scientific information that may relate to the safety of cellphones and other electronic products. . . . As we have stated publicly, . . . the available scientific evidence to date does not support adverse health effects in humans due to exposures at or under the current limits, and . . . the FDA is committed to protecting public health and continues its review of the many sources of scientific literature on this topic.

J.A. 8,187 (Letter from Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices and Radiological Health, U.S. Food & Drug Admin., Dep't of Health & Hum. Servs., to Julius Knapp, Chief, Off. of Eng'g & Tech., U.S. Fed. Commc'ns Comm'n (April 24, 2019)).[12] In my view, the Commission, relying on

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[11] *See* J.A. 8,184 (Letter from Julius Knapp, Chief, Off. of Eng'g & Tech., U.S. Fed. Commc'ns Comm'n, to Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices and Radiological Health, U.S. Food & Drug Admin. (March 22, 2019)) ("Given that existing studies are continually being evaluated as new research is published, and that the work of key organizations such as [the Institute of Electrical and Electronics Engineers] and ICNIRP is continuing, we ask FDA's guidance as to whether any changes to the standards are appropriate at this time.").

[12] *See also Statement from Jeffrey Shuren, M.D., J.D., director of the FDA's Center for Devices and Radiological Health on the recent National Toxicology Program draft report on radiofrequency energy exposure*, FOOD & DRUG ADMIN. (Feb. 2, 2018), https://www.fda.gov/news-events/press-announcements/statement-jeffrey-shuren-md-jd-director-fdas-center-devices-and-radiological-health-recent-national (Since 1999, "there have been hundreds of

the FDA, reasonably concluded no changes to the current RF exposure limits were warranted at the time. *See In re Reassessment of Fed. Commc'ns Comm'n Radiofrequency Exposure Limits & Policies*, 34 FCC Rcd. 11,687, 11,691 ¶ 10 (2019) (*2019 Order*).

Simply put, the Commission's reliance on the FDA is reasonable "[i]n the face of conflicting evidence at the frontiers of science." *See Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 90 (2d Cir. 2000). The majority takes issue with what it categorizes as "conclusory statements." Maj. Op. 14. But the Supreme Court's "*State Farm* [decision] does not require a word count; a short explanation can be a reasoned explanation." *Am. Radio*, 524 F.3d at 247 (Kavanaugh, J., dissenting in part). Brevity is even more understandable if the agency whose rationale is challenged relies on the agency the Congress has charged with regulating the matter.

Granted, "[w]hen an agency in the Commission's position is confronted with evidence that its current regulations are inadequate or the factual premises underlying its prior judgment have eroded, it must offer more to justify its decision to retain its regulations than mere conclusory statements." Maj.

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studies from which to draw a wealth of information about these technologies which have come to play an important role in our everyday lives. Taken together, all of this research provides a more complete picture regarding radiofrequency energy exposure that has informed the FDA's assessment of this important public health issue, and given us the confidence that the current safety limits for cell phone radiation remain acceptable for protecting the public health. . . . I want to underscore that based on our ongoing evaluation of this issue and taking into account all available scientific evidence we have received, we have not found sufficient evidence that there are adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits.").

Op. 9. But the majority opinion rests on an inaccurate premise—the Commission was not confronted with evidence that its regulations are inadequate nor have the factual premises underlying its RF exposure limits eroded. Sifting through the record's technical complexity is outside our bailiwick. If the record here establishes one point, however, it is that there is no scientific consensus regarding the "non-thermal" effects, if any, of RF radiation on humans. More importantly, the FDA, not the Commission, made the allegedly "conclusory statements" with which the majority takes issue and I believe the Commission adequately explained why it relied on the FDA's expertise.[13]

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[13] The majority asserts that "[o]ne agency's unexplained adoption of an unreasoned analysis just compounds rather than vitiates the analytical void." Maj. Op. 24. As set out *supra*, however, the Commission adequately explained its reliance—for the past 25 years—on the FDA's RF exposure expertise. Plus, after a review of "hundreds of studies," the FDA's conclusion is far from unreasoned. *See supra* note 12. And the two cases to which the majority points are inapposite. *See* Maj. Op. 24 (citing *City of Tacoma v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006), and *Ergon-West Virginia, Inc. v. EPA*, 896 F.3d 600, 612 (4th Cir. 2018)). Importantly, unlike these petitions, neither case involves a decision not to initiate a rulemaking. As noted, inaction is reviewed under an especially deferential standard. It would be inappropriate to apply precedent using a less deferential standard to modify the standard applicable here. And finally, the Commission did not "blindly adopt the conclusions" of the FDA. *See City of Tacoma*, 460 F.3d at 76. Nor did it "turn a blind eye to errors and omissions apparent on the face of" the FDA's conclusions. *See Ergon-West Virginia*, 896 F.3d at 612.

The majority's citation to *Bellion Spirits, LLC v. United States*, No. 19-5252 (D.C. Cir. Aug. 6, 2021), is even further afield. First, *Bellion Spirits* addressed a "statutory authority" question—it did not apply arbitrary and capricious review, much less the especially

As in *EMR Network*, the record does not "call into question the Commission's decision to maintain a stance of what appears to be watchful waiting." 391 F.3d at 274. To hold otherwise begs the question: what was the Commission supposed to do? It has no authority over the level of detail the FDA provides in response to the Commission's inquiry. It admits that it does not have the expertise "to interpret[] the biological research necessary to determine what [RF radiation] levels are safe." *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,501 ¶ 6. The Commission opened the *2013 Notice of Inquiry* "as a matter of good government" despite its "continue[d] . . . confidence in the current [RF] exposure limits." *Id.* at 3,570 ¶ 205. If it *had* reached a conclusion contrary to the FDA's, it most likely would have been attacked as *ultra vires*. For us to require the Commission to, in effect, "nudge" the FDA stretches both our jurisdiction as well as its authority beyond recognized limits.

Accordingly, I respectfully dissent from the limited remand set forth in Part II.A.i.–iv. and Part III of the majority opinion.[14]

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deferential standard applicable to a decision not to initiate a rulemaking. *See Bellion Spirits*, slip op. at 13. Second, to the extent *Bellion Spirits* is remotely relevant, I believe it supports my position. There, the Alcohol and Tobacco Tax and Trade Bureau "consulted with [the] FDA on a matter implicating [the] FDA's expertise and then considered that expertise in reaching its own final decision." *Id.* at 14. Again, in my view, the Commission did the same thing.

[14] Although I join Part II.B. of the majority opinion, I do not agree with the majority's aside, contrasting the Commission's purported silence regarding non-cancerous effects and its otherwise reasoned response. *See* Maj. Op. 26. As explained *supra*, I believe the Commission reasonably relied on the FDA's conclusion that RF radiation exposure below the Commission's limits does not cause negative health effects—cancerous or non-cancerous.

EXHIBIT B

ORDER 86200

IN THE MATTER OF POTOMAC ELECTRIC POWER COMPANY AND DELMARVA POWER AND LIGHT COMPANY REQUEST FOR THE DEPLOYMENT OF ADVANCED METER INFRASTRUCTURE	*	BEFORE THE PUBLIC SERVICE COMMISSION OF MARYLAND _____ Case No. 9207 _____
IN THE MATTER OF BALTIMORE GAS AND ELECTRIC COMPANY FOR AUTHORIZATION TO DEPLOY A SMART GRID INITIATIVE AND TO ESTABLISH A SURCHARGE MECHANISM FOR THE RECOVERY OF COST	*	_____ Case No. 9208 _____
IN THE MATTER OF THE REQUEST OF SOUTHERN MARYLAND ELECTRIC COOPERATIVE, INC. FOR AUTHORIZATION TO PROCEED WITH IMPLEMENTATION OF AN ADVANCED METERING INFRASTRUCTURE SYSTEM	*	_____ Case No. 9294 _____

Issue Date: February 26, 2014

I. Introduction

As when the Maryland Public Service Commission (the "Commission") initially approved advanced metering infrastructure ("AMI") build-outs in Maryland, today we again recognize the potential of AMI to deliver substantial benefits to all ratepayers.[1]

[1] *See, e.g.* Order No. 83571 at 1 (Sept. 2, 2010).

These benefits include increased operational efficiencies and supply-side savings, which we expect will be reduced as the result of our decision to allow customers to opt out of an advanced meter. From an operational standpoint, *all* ratepayers will benefit from savings passed on by the utility, stemming from the reduced costs associated with remote meter reading and the removal of other costs.[2] Ratepayers will also benefit from the projected supply-side benefits, since AMI provides customers access to more granular and timely data associated with their individual usage; this data provides customers the opportunity to reduce their electricity usage and to receive monetary credits for such reductions, and allows the utility to pass savings on to the customers for depressed wholesale market energy and capacity prices.[3] Furthermore, advanced meters offer numerous potential outage-related operational benefits that go hand-in-hand with this Commission's focus on the reliability and resiliency of Maryland's electric distribution system. Although in this Order we affirm and provide procedural details related to our decision to allow an AMI opt out, we are cognizant of the costs imposed by extending this choice to individual ratepayers. In this Order, we allocate to these opt-out customers the appropriate costs associated with their choice — a practice aligned with the traditional ratemaking principles of cost causation, and with consideration of the effect of those costs on ratepayers. We address the issue of cost allocation for customers of Baltimore Gas & Electric Company ("BGE"), Potomac Electric Power Company ("Pepco"), Delmarva

[2] Order No. 83571 at 29-31. In addition to eliminating manual meter reading costs, the Utilities project that AMI will lead to increased operational savings due to their remote turn-on/turn-off functionality, asset optimization, reduced expenses related to theft of service, reduced volume of customer call types related to metering, improved complaint handling, removal of costs attributed to estimations of customer bills, and the elimination of certain hardware and software support systems. *See also* Case No. 9207: ML#115775 *Joint Proposal of Delmarva Power and Light Company and Potomac Electric Power Company for Advanced Metering Infrastructure* (June 30, 2009) at 13.

[3] Order No. 83571 at 31-37.

Power and Light Company ("Delmarva") or ("DPL") and Southern Maryland Electric Cooperative, Inc. ("SMECO") (collectively the "Utilities") who opt out of receiving a smart meter ("opt-out customers").[4]

On January 7, 2013, we issued Order No. 85294, in which we concluded that the public interest required that we allow customers the option of declining the installation of a smart meter.[5] However, we made clear that "we will require those ratepayers that exercise the option to bear appropriate costs."[6] Customers receiving a smart meter should not be burdened by the incremental costs associated with requiring the Utilities to maintain two parallel and redundant infrastructures. In several prior orders, we have discussed the many operational and supply-side benefits that all Maryland customers (including opt-out customers) will receive from the AMI infrastructure, including lower rates, faster restoration of power following outages, remote move-in/move-out functionality,[7] and an increased ability to monitor electricity use and enroll in demand reduction programs to receive financial incentives in return for relieving the electric grid during periods of highest stress.

When we issued Order No. 85294, the Commission did not find the record

[4] Commissioner Anne Hoskins did not participate in the decision in this proceeding, as she was not yet appointed at the time of the August 6, 2013 hearing. Commissioner Harold D. Williams dissents from the decision to establish opt-out fees for those customers who choose to forego installation of a smart meter. Commissioner Williams' dissent is attached to this Order.

[5] Former Chairman Nazarian and Commissioner Speakes-Backman dissented from that order. For the reasons set forth in her joint dissent with Chairman Nazarian, Commissioner Speakes-Backman continues to believe that the benefits of advanced metering infrastructure will be undermined by allowing customers to opt out, perhaps to the detriment of all customers. However, in light of the majority's decision to allow opt outs, she participated in this decision to support the principles that the costs of opting out are fairly apportioned and not excessive.

[6] Order No. 85294 (Jan. 7, 2013) at 2.

[7] Currently, a utility must make a field visit in order to manually connect or disconnect an electric service for an inactive account. The installation of smart meters will enable the Utilities to remotely turn on or turn off a service at an address where there is an inactive account, which will result in annual savings attributable to the reduction of associated field visits. *See* Order 83571 at 30.

sufficient to determine the additional costs opt-out customers might impose upon the Utilities.[8] We now have received detailed cost submissions that support the fee structures set forth herein. Examples of additional costs to the Utilities include the need to retain employees to read legacy meters, and the need to install additional "Mesh Network Reinforcement" (relays) to ensure opt-out customers do not prevent the Advanced Metering Infrastructure from functioning as intended. Both expense categories necessarily depend upon two factors: (1) the percentage of customers who ultimately opt out, and (2) the geographic distribution of those customers. For purposes of this opinion, we have assumed a 1% opt-out rate, which is supported by the record and reasonably approximates the experience in other states further along in their implementation. However, the effect upon the network would be very different, for example, for a 1% opt-out rate in Baltimore City compared to a 1% opt-out rate on the Eastern Shore. Costs to accommodate an opt-out option will vary widely depending upon the density of the Utilities' customer population and the additional infrastructure costs affected by such geographic distributions, and also upon the number of opt-out customers available to share the costs.[9] Because we find that the magnitude of the additional infrastructure costs is entirely dependent upon the ultimate number and geographic distribution of the opt-out customers, we direct the Utilities to track these costs separately and therefore not include the cost of additional mesh relays in the opt-out fee structure at this time.

[8] We also asked the Utilities to break down the costs based upon three different options that would address customer concerns regarding smart meters. These options included, in addition to retaining a legacy meter, the options of installing a smart meter that would operate so as to eliminate or minimize the radio frequency ("RF") radiation that smart meters emit.

[9] For example, assuming a 1% opt-out rate, BGE estimates 12,000 opt-out customers, Pepco estimates 5,344 opt-out customers, DPL estimates 2,000 opt-out customers and SMECO estimates 1,391 opt-out customers. Case Nos. 9207, 9208, and 9294: ML#148810 *Staff Comments Regarding the Smart Meter Opt-out Proposals* ("Staff July 31, 2013 Comments") at 3.

We have attempted to mitigate the fees for opting out to ensure that it remains a viable, and not just theoretical, option for customers. However, we also must ensure that the Utilities recover prudently incurred costs created by opt-out customers. Based upon the record before us and the recommendations of several parties, a two-part fee structure is warranted in order to capture both fixed and ongoing costs associated with opting out. Consequently, we find that all opt-out customers should incur a one-time, up-front fee of $75.00, payable in three monthly installments. The remainder of the up-front costs shall be amortized over ten years as proposed by BGE. Based upon the varying customer population densities of the Utilities and the number of customers likely to opt out within the service territories, the record reflects that the ongoing monthly fee to be paid by opt-out customers will differ from utility to utility. As we discuss in more detail below, we establish the opt-out fees for each of the Utilities as follows:

Utility	Up-Front Charge	Ongoing, Monthly Charge
BGE	$75.00	$11.00
Pepco	$75.00	$14.00
DPL	$75.00	$17.00
SMECO	$75.00	$17.00

These fees are based upon the projected costs that each of the Utilities will incur for allowing customers to opt out. However, the fees do not currently encompass costs associated with additional mesh network reinforcement devices. Instead, we direct the Utilities to track costs associated with incremental relay investments in a separate regulatory asset for further consideration and review, which we find is consistent with our decision to defer cost recovery for the overall AMI system until the time that the Utilities

have delivered a cost-effective AMI system. We will order the Utilities to file with us the actual costs incurred after the percentage of opt-out customers stabilizes,[10] at which time we will re-evaluate the fees to be paid by opt-out customers. It is possible the Commission may recalibrate the fees at that time to adjust for differences in actual costs derived from the realized percentage of opt-out customers.

Additionally, as previously ordered, we will defer cost recovery for the overall AMI system until the time that the Utilities deliver a cost-effective AMI system. We will continue to monitor the Utilities' installation progress, performance metrics, customer education and communication plans for the deployment of these meters to ensure that Maryland customers receive value for the costs they incur, whether or not they are opt-out customers.

II. Procedural History and Parties' Positions

In Order No. 85294 we signaled our intent to consider several issues at a subsequent hearing: (1) whether we would allow customers to retain their current legacy meter or instead allow customers to receive an alternatively-installed AMI meter;[11] (2) the costs associated with each opt-out scenario scaled for different levels of customer participation; and (3) procedures for exercising the resulting opt-out option.[12] We directed the Utilities to provide, on or before July 1, 2013, proposals regarding cost recovery associated with each opt-out option.[13] In response, we received comments and

[10] Staff suggests that the opt-out rate may stabilize within 12-18 months. Staff July 31, 2013 Comments at 8.
[11] We envisioned alternatively-installed AMI meters as operating in an RF-free or near RF-free manner. *See* Order No. 85294 at 2, 10.
[12] Order No. 85294 at 9.
[13] Order No. 85294 at 10.

cost estimates from SMECO[14] and Pepco/Delmarva[15] on April 25, 2013, and BGE on April 26, 2013.[16] On July 31, 2013, we received comments on the Utilities' proposals from the Maryland Energy Administration ("MEA"),[17] the Office of People's Counsel ("OPC"),[18] Maryland Smart Meter Awareness ("MSMA"),[19] and Commission Staff ("Staff"). With the exception of MSMA, all parties agreed that the costs of opting out should be borne solely by opt-out customers.

SMECO

On April 25, 2013, SMECO recommended that its opt-out customers who do not already have an ERT/AMR meter have one installed in lieu of a smart meter, and that these customers bear the full costs associated with opting out.[20] For its recommended opt-out scenario, SMECO provided estimates using a 1% opt-out ratio of residential customers that, based on costs, would require an up-front fee of $105.32 and a recurring

[14] Case No. 9294: ML#146927 *SMECO Response to Commission Order No. 85294 Regarding Review of Alternatives for Customer Opt-Outs from Receipt of Advanced Meters* and (*Attachment) "Opt-Out" Alternative Costs & Proposal* ("SMECO April 25, 2013 Comments").

[15] Case No. 9207: ML#146938 *Response of Potomac Electric Power Company and Delmarva Power & Light Company to Order No. 85249 Concerning Smart Meter Opt-out Costs* ("PHI April 25, 2013 Comments").

[16] Case No. 9208: ML#146949 *Compliance Filing of Baltimore Gas and Electric Company to Order No. 85294 and Request for Expedited Consideration* ("BGE April 26, 2013 Comments").

[17] Case Nos. 9207, 9208, and 9294: ML#148814 *Comments of the Maryland Energy Administration Regarding the Companies' Proposals for an "Opt-Out" Option for Advanced Meters* ("MEA July 31, 2013 Comments").

[18] Case Nos. 9207, 9208, and 9294: ML#148816 *Comments of the Office of People's Counsel in Response to Company Proposals Filed in Response to PSC Order No. 85294* ("OPC July 31, 2013 Comments").

[19] Case Nos. 9207, 9208, and 9294: ML#148795 *Comments of Maryland Smart Meter Awareness Before the Maryland Public Service Commission in Response to the Opt Out Cost Proposals of Baltimore Gas & Electric, Pepco, Delmarva Power & Light and Southern Maryland Electric Cooperative* ("MSMA July 31, 2013 Comments").

[20] SMECO April 25, 2013 Comments at (attachment) 1-6. ERT (encoder receiver transmitter) or AMR (automatic meter reading) meters, long used by Maryland utilities and nationally, emit minimal RF radiation when read remotely, and allow utilities to read the meter without physically entering the customer's premises, such as driving by a customer's property. The typical ERT meter has a range of approximately 800 yards. *Id.*

monthly fee of $34.94.[21] SMECO further argued that Commission approval of any opt-out option should conform to the following parameters:

> "(1) customer-members who exercise the opt-out should retain their existing [ERT/AMR][22] meters…;
> (2) the option should be available only to residential customer-members; (3) customer-members who exercise the opt-out should be ineligible for the AMI program's time of use ("TOU") or related programs; and
> (4) customer-members who exercise the opt-out should be required to bear the full initial and ongoing costs associated with the opt-out."[23]

BGE

BGE provided estimates for projected 0.5% and 1% opt-out levels, recommending that we allow opt-out customers only the option to retain their legacy meter. BGE's opt-out proposal included several cost categories: (1) retaining and operating the legacy meter reading system;[24] (2) retaining legacy meter readers;[25] (3) the costs associated with the impact of opt-out customers upon the mesh network;[26] (4) the costs of enrolling opt-out customers;[27] and (5) billing and reporting costs.[28,29]

BGE provided cost estimates for a 1% opt-out rate that would require opt-out customers to pay an initial fee of $100.00 and a monthly fee of $15.00.[30] The up-front fee was designed to offset a portion of the one-time capital costs associated with offering

[21] SMECO April 25, 2013 Comments at (attachment) 1-5.
[22] "ERT meters are SMECO's recommended alternative, should the Commission require an opt-out option." SMECO April 25, 2013 Comments at 2.
[23] SMECO April 25, 2013 Comments at 2.
[24] $508,442 in implementation costs, and $173,700 in recurring costs. Staff September 10, 2013 Comments at 3-4.
[25] $717,446 in recurring costs. Staff September 10, 2013 Comments at 4.
[26] $3,171,554 (relays and contingencies), and $50,000 in recurring costs. Staff September 10, 2013 Comments at 4.
[27] $2,756,638 in implementation costs. Staff September 10, 2013 Comments at 6.
[28] $1,660,744 in implementation costs. Staff September 10, 2013 Comments at 6.
[29] Staff September 10, 2013 Comments at 2. BGE included several other cost components in its opt out proposal that are only relevant to the RF-free and RF-minimizing options.
[30] BGE April 26, 2013 Comments at 2.

an opt-out option, since collecting the entire one-time costs in the up-front fee would likely be prohibitive for most customers. The remainder of the one-time costs would be amortized over 10 years and collected as part of the monthly fee. The second component of the monthly fee would reflect other ongoing costs, the majority of which are the costs of retaining meter readers to service opt-out customers.[31] BGE based its cost assumptions on the following parameters:

- Residential and commercial customers are eligible to opt-out;
- The initial fee is charged at enrollment;
- The flat monthly fee is charged after enrollment;
- Any residential or commercial customer who opts out pays the initial fee and flat monthly fee indicated above, regardless of the quantity or types of meters on the account (i.e., electric and gas, electric only, or gas only). Customers with multiple accounts will receive the opt-out fees for each account;
- Customers who move into a premise of a customer who had previously opted out will receive a smart meter;
- Gas and electric customers electing to opt out must do so for both meters;
- There is no charge to subsequently opt-in to the smart meter program for customers who originally opted out; ongoing opt-out charges would cease upon receiving a smart meter;
- All opt-out customers would retain their existing meters, except for customers with a time-of-use (TOU) meter. Customers with an existing TOU meter will receive a non-TOU digital meter; and
- Customers with an analog meter in need of replacement will receive a digital meter.[32]

[31] BGE April 26, 2013 Comments at 2.
[32] BGE April 26, 2013 Comments at 3.

PHI

Pepco and Delmarva (jointly "PHI") informed the Commission that as of April 1, 2013, they had experienced 0.3% and 0.06% opt-out levels in their respective service territories.[33] Using an assumption that limited the opt-out option to residential and commercial customers,[34] they estimated fixed first year costs of $8,200,000, attributable as follows:

Indirect Incremental Cost - fixed cost to be sprea *c*ross all opt-out customers

- Variable:
  - Incremental AMI program management cost;
  - Communications network reinforcement and engineering costs;
  - Escalation team and administrative expenses for managing the opt-out process;
  - Customer communications and contact center;
- Fixed:
  - Information technology system modifications;
  - Modifications to customer education materials;

Direct Customer Cost - fixed cost unique to each customer

- Purchase and install the atypical meter and exit cost when the opt-out customer moves out (including retrieving the final register read for the final bill, disconnecting the customer and installing an AMI communicating meter);
- Manual meter reading expenses.[35]

[33] PHI April 25, 2013 Comments at 2. At the time of the hearing, PHI updated these figures to a 0.38% opt-out rate in Pepco, and a 0.65% opt-out rate in Delmarva. August 6, 2013 Tr. at 39.
[34] PHI April 25, 2013 Comments at 2.
[35] PHI April 25, 2013 Comments at 4.

Pepco and Delmarva further broke down the annual costs associated with an opt-out option as follows:

Annual Ongoing Cost

- Variable:
  - Communications network reinforcement and engineering costs;
  - Customer communications and contact center expenses;
- Non-variable:
  - Customer education materials;
  - Escalation team and administrative expenses for managing the opt-out process.[36]

Based upon these cost projections, Pepco and Delmarva proposed a one-time opt-out fee of $100.00 and a monthly fee of $58.00.[37]

MSMA

MSMA filed comments disputing the reliability of the cost estimates provided by the Utilities,[38] contending that the Utilities' ongoing deployment of smart meters demonstrates that opt-out customers have had minimal impact upon the infrastructure costs.[39] MSMA claimed that the small percentage of ratepayers likely to opt out will not materially affect the supply-side benefits projected in each Utility's respective business

[36] PHI April 25, 2013 Comments at 4-5.
[37] PHI April 25, 2013 Comments at 5.
[38] Other parties did not dispute the reliability of the Utilities' cost estimates. OPC's comments recognized that the Companies' reports are projections, but also noted that "[t]he Companies know with reasonable certainty what each metering device will cost…the cost of the devices needed to bolster the 'mesh network'…the cost of paying meter readers, and running the IT and billing systems to support Opt Out." OPC July 31, 2013 Comments at 5.
[39] MSMA July 31, 2013 Comments at 4.

case.[40] MSMA's comments focused solely on the Utilities' legacy meter fee proposals, since MSMA concluded that "[t]he proposed costs for the RF-free and RF-minimizing smart meters are excessive and substantially exceed the proposed costs for retention of an analog meter thus making this option the most cost effective according to the utilities."[41]

MSMA enumerated several specific objections to the calculation of individual Utilities' cost estimates. For example, MSMA alleged that BGE improperly included meter reading implementation costs and annual software licensing fees, which BGE would have incurred regardless of any opt outs.[42] MSMA also took issue with PHI's proposal, which includes a charge to the opt-out customer for a meter exchange regardless of whether a smart meter is replaced by an analog meter.[43] Furthermore, MSMA argued that the Utilities double-counted meter reading, records, and collections fees,[44] and that the Utilities failed to adjust their cost estimates for any savings that would accrue *because* some ratepayers choose to opt out.[45]

Finally, MSMA concluded that in the event the Commission does establish an opt-out fee, "any imposition of that fee should wait until the Commission authorizes the utilities to build the recovery of the AMI deployment into customer rates."[46]

Other Parties

MEA, OPC and Staff agreed that opt-out customers should bear the full costs associated

[40] MSMA July 31, 2013 Comments at 3.
[41] MSMA July 31, 2013 Comments at 2.
[42] MSMA July 31, 2013 Comments at 7-8.
[43] MSMA July 31, 2013 Comments at 9.
[44] MSMA July 31, 2013 Comments at 11-12.
[45] MSMA July 31, 2013 Comments at 10-13.
[46] MSMA July 31, 2013 Comments at 15.

with opting out. MEA opposed the option of allowing opt-out customers to retain their legacy meters, preferring to retain the system-wide benefits of the AMI infrastructure.[47] Staff reviewed the initial cost estimates of the Utilities and found them to be reasonable.[48] Staff recommended that the Commission allow opt-out customers to retain their existing meters and re-evaluate the Utilities' cost projections when opt-out rates have stabilized, estimated to be approximately 12-18 months after full deployment.[49]

OPC also agreed that opt-out customers should bear the full costs incurred by the Utilities.[50] OPC recommended that the opt-out costs be clearly defined on the utility bill as a separate line item and that the utility bills should specify which costs are one-time fees and which are recurring monthly fees.[51]

Hearing on Options for Smart Meter Installation

On August 6, 2013, we conducted a hearing to allow all parties to present their cases and answer questions posed by the Commission. At this hearing, Pepco and Delmarva informed the Commission that the Companies were currently experiencing a 0.38% and 0.65% opt-out rate respectively.[52] Pepco and Delmarva agreed with Staff's recommendation that the Utilities return to the Commission within 12-18 months to report on the actual costs of implementing an opt-out.[53] They also agreed to allow customers who deferred installation of a smart meter per our Interim Opt-out Order a period of time to accept new smart meters, once the fees established by our decision are

[47] MEA July 31, 2013 Comments at 2-3.
[48] Staff July 31, 2013 Comments at 3.
[49] Staff July 31, 2013 Comments at 8.
[50] OPC July 31, 2013 Comments at 3.
[51] OPC July 31, 2013 Comments at 7.
[52] August 6, 2013 Tr. at 39.
[53] August 6, 2013 Tr. at 21.

published.[54]

BGE stated at the hearing that it did not include any reduced benefits from administering an opt-out program, only increased costs.[55] BGE requested approval to default non-responsive customers into opt-out customer status, assessing any applicable fees based on this decision herein.[56] As with most other parties, BGE saw no economic benefit from pursuing the RF-free or RF-minimized options given the high fees associated with those options.[57] Additionally, BGE explained that their gas customers would be unable to exercise the RF-free or RF-minimizing options, because an interval meter requires electricity, and with a gas meter, there is no external voltage supply.[58] Finally, BGE recommended that we adopt an assumed 1% opt-out rate, despite BGE's then-current 3% opt-out rate. BGE contended that it expected the opt-out rate to decline significantly once the fees were established.[59]

SMECO stated its preference to only allow opt-out customers to retain their legacy meters and require those customers to receive an ERT meter.[60] SMECO concurred with the recurring theme from most parties[61] as to the ineffective and cost-prohibitive nature of the RF-free and RF-minimizing options.[62]

During the hearing, the Commission requested that the Utilities and Staff provide additional information on the cost components and assumptions used in the development

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[54] August 6, 2013 Tr. at 44.
[55] August 6, 2013 Tr. at 67.
[56] August 6, 2013 Tr. at 72. We addressed this request in Order No. 85908 (Oct. 17, 2013).
[57] August 6, 2013 Tr. at 76.
[58] BGE April 26, 2013 Comments at 7.
[59] August 6, 2013 Tr. at 90-91. OPC also recommended that we adopt a 1% presumed opt out rate. August 6, 2013 Tr. at 146.
[60] August 6, 2013 Tr. at 113-114.
[61] The MEA opposes any opt-out option that allows a customer to retain a legacy or non-AMI meter. MEA July 31, 2013 Comments at 10.
[62] August 6, 2013 Tr. at 101-103.

of both the up-front and monthly opt-out fees, as well as criteria used by other state commissions in determining opt-out fees. The Utilities provided confidential electronic files of cost breakdowns, and on September 10, 2013, Staff filed its Supplemental Comments that analyzed for each of the Utilities a range of up-front and monthly fees.

III. Commission Decision

We have looked carefully at the projected costs offered and commented upon by all parties, and we conclude that Staff's September 10, 2013 analysis of the Utilities' cost models best reflects the information before us at this time, which will be updated and re-evaluated as projections become actual data. As Staff stated, "each of the companies are unique entities and therefore have different cost structures based upon their service territory characteristics and current customer information systems and meter reading costs and technology."[63]

A. Form of the Opt-Out Option

As directed in Order No. 85294, the Utilities provided installation options and associated

cost estimates for opt-out scenarios in which the customer either retains the legacy meter or receives an alternatively-installed smart meter. In addition to the legacy meter option, the PHI proposal contemplated a RF-minimizing option in which the smart meter would be physically relocated to a different location on the customer's property, as well as a RF-free installation option that utilizes a commercial meter with a dedicated phone line.[64] Similarly, BGE's proposal contemplated a RF-free option that allowed data collection

[63] Staff September 10, 2013 Comments at 1-2.
[64] PHI April 25, 2013 Comments at 2-3.

from an interval meter via an analog phone and modem connection.[65] For its RF-minimizing scenario, BGE stated that it could utilize a cellular communication device for data collection and limit the number of calls to the meter.[66] SMECO's proposal included analysis of six scenarios, three of which covered non-smart meters (analog, digital, and ERT/AMR). Similar to the PHI and BGE proposals, SMECO analyzed an interval/telephone modem option[67] and the RF-minimizing scenario contemplated by BGE's comments.[68] Lastly, SMECO offered a sixth scenario that involves a monthly site visit by a trained technician to manually probe the interval data meter.[69]

With the exception of the MEA,[70] the parties agreed that if the Commission is to allow an opt-out option, it should take the form of allowing a customer to retain their existing meter.[71] However, both SMECO and PHI recommended that an ERT meter should be installed in lieu of a smart meter if the customer's existing meter is only an analog meter or located on hard to access premises.[72]

While we recognize the reduction of AMI system-wide benefits that will occur by allowing customers to retain their legacy meters, we are also cognizant of Staff's observation that the structure of retaining the legacy meter is "consistent with the other opt-out programs in the country, is less costly than the RF-Limited and RF-Free proposals, and best responds to the concerns expressed by ratepayers who are opposed to

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[65] BGE April 26, 2013 Comments at 5.
[66] BGE April 26, 2013 Comments at 6.
[67] SMECO April 25, 2013 Comments (attachment) at 5-38.
[68] SMECO April 25, 2013 Comments (attachment) at 5-39.
[69] SMECO April 25, 2013 Comments (attachment) at 5-40.
[70] MEA argued that allowing customers an RF-free or other RF-minimizing option is the only method that minimizes the system-wide costs associated with permitting an opt out. MEA July 31, 2013 Comments at 7-8.
[71] BGE April 26, 2013 Comments at 7; MSMA July 31, 2013 Comments at 2; OPC July 31, 2013 Comments at 15; SMECO April 25, 2013 Comments at 2; and Staff July 31, 2013 Comments at 2-4.
[72] PHI April 25, 2013 Comments at 3; SMECO April 25, 2013 Comments at 2.

smart meters."[73] However, we have also charged the Utilities with providing cost-effective service and so we find that the installation of an ERT meter in lieu of a smart meter will at least permit monthly data retrieval in the form of a meter reading drive-by. We note that ERT/AMR meters have been in use by most Maryland utilities for the better part of two decades[74] and are the common replacement for analog meters that have reached the end of their useful life, especially because analog meters are no longer commercially available. Therefore, in the event that the customer's current meter is a smart meter, analog or digital meter, the Utilities may install an ERT/AMR meter at the opt-out customer's premises for no additional costs beyond the opt-out fees established by this Order. Furthermore, the Utilities are directed to extend this opt-out choice to all residential and small commercial customers.[75]

B. Cost Allocation to Opt-Out Customers

1. Assumptions and True-up Procedure

The determination of a fair cost allocation to opt-out customers requires us to make some reasonable assumptions based on the record in regard to the scope and geographic distribution of the customers opting out. Several cost categories will scale and differ depending on these variables, and the only definitive way to capture these costs is to take a snapshot in time — an obviously imperfect solution, given the inevitable and continuous turnover in customer accounts. Because of this, several parties offered recommendations pertaining to the assumptions that the Commission should use in

[73] Staff July 31, 2013 Comments at 4.
[74] *See, e.g.* SMECO April 25, 2013 Comments at 2.
[75] "Small commercial customers" assumes the definition contained in the tariffs and programs of each individual utility and is not modified by this Order.

resolving the opt-out cost allocation issue.

Although Staff noted that opt outs are likely to occur in clusters, Staff did not take issue with all Utilities assuming an even distribution of opt outs in their service territories.[76] Staff recommended that the Utilities' fees should be based on an opt-out rate of 0.5%,[77] while OPC commented that a 1% opt-out rate appears reasonable.[78] While the Utilities provided cost estimates for a range of opt-out percentages,[79] the Utilities coalesced around 1% as the most likely scenario; indeed Staff noted that available data for other states suggests that opt-out rates are all less than 1.5% for utilities that impose fees.[80]

For determination of the cost allocations in this Order, we adopt the recommended assumptions of an even geographic distribution and a 1% opt-out rate. We recognize that these assumptions, while reasonable, cannot be precise, but we are convinced that appropriate costs must be imposed now[81] and we will adjust any imbalance in the fees collected by the Utilities during a future true-up process. As suggested by Staff,[82] the true-up procedure shall account for the actual costs of providing the opt-out service as compared to the revenue generated by the collection of the fees established by this Order. This one-time true-up will occur once the opt-out rate has

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[76] Staff July 31, 2013 Comments at 3-4.
[77] Staff July 31, 2013 Comments at 2.
[78] OPC July 31, 2013 Comments at 14.
[79] PHI provided cost estimates for opt-out rates of 0.2%, 1%, 2%, and 5%; BGE analyzed 0.5% and 1%; and SMECO analyzed opt-out rates of 1%, 2% and 5%. *See* PHI April 25, 2013 Comments at 2; BGE April 26, 2013 Comments at 1; and SMECO April 25, 2013 Comments at 3.
[80] Staff July 31, 2013 Comments at 6-7.
[81] Our reasons for imposing the opt-out fees now, as opposed to at a later and as-of-yet undetermined date (as suggested by MSMA), are discussed in *supra* Section III.C.2.iii. However, the opt-out fees imposed by this Order do not encompass costs associated with any mesh network infrastructure upgrades that may be necessitated depending on the geographic distribution of the opt-out customers.
[82] Case Nos. 9207, 9208, and 9294: ML#149519 *Staff Supplemental Comments Regarding the Smart Meter Opt-Out Proposals* ("Staff September 10, 2013 Comments") at 2.

stabilized in all service territories — projected by Staff to occur within 12-18 months of the opt-out fee implementation.[83]

2. Opt-Out Fee Schedule

i. Declined Adjustments

Several parties recommend adjustments to the opt-out fees proposed by the Utilities. We consider each recommendation in this section, although we note at the outset that we agree with OPC's observations that the Utilities know with reasonable certainty many of the underlying costs associated with providing an opt-out option, such as the costs of each metering device, reasonable costs of paying meter readers, and the costs of running the IT and billing systems to support the opt out.[84] As noted earlier, the opt-out fees are based on projected costs because of the impact of the scope and geographic distribution assumptions, not because the Utilities are incapable of providing reliable estimates. Therefore, we reject MSMA's contention[85] that the Utilities have provided unreliable estimates on which the Commission can base a fee determination.

We also reject MSMA's allegation that "[t]he small percentage of ratepayers opting out will at most have only a minimal impact on the Utilities' projected benefits from AMI implementation."[86] MSMA asserts that the PHI and BGE business cases only project customer participation rates in the range of 75% (therefore rendering any impact associated with the likely opt-out rates as *de minimis*). We find MSMA's argument to be based on a faulty premise. As emphasized throughout this Order and other preceding

[83] Staff July 31, 2013 Comments at 8.
[84] OPC July 31, 2013 Comments at 5.
[85] MSMA July 31, 2013 Comments at 5-6.
[86] MSMA July 31, 2013 Comments at 3.

orders, the cost impacts — especially from an operational standpoint — begin to accrue from the very first opt out, do not necessarily scale, and are directly attributable to the opt-out customer.[87] Furthermore, the operational savings comprise the vast majority of the benefit categories associated with AMI deployment.[88] The customer participation rates referenced by MSMA refer to AMI *supply-side* benefit programs, which assume participation rates in the 75% range *after* scaling for other factors associated with voluntary participation in a separate program.[89] These scaled participation rates were derived using the assumption that *all* customers would receive a smart meter, and expectations would necessarily have to be scaled differently after the percentage of opt-out customers has stabilized.

MSMA also recommended that the opt-out fees contain adjustments to address impacts on the "poor, elderly, and sick."[90] This Commission has historically held that below cost rates for limited income customers would be discriminatory, and therefore inconsistent with Section 4-503(b) of the Public Utilities Article.[91] While we are aware that some other states have established reduced fee or even no fee opt-out programs,

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[87] For this reason, we also reject MSMA's contention that BGE's proposal includes fees that would have been incurred regardless of any opt outs and that the Utilities should adjust the opt-out fees for savings that accrue because a customer opts out. MSMA July 31, 2013 Comments at 7-8, 10-13. In approving an opt-out option, we are requiring the Utilities to operate parallel and redundant systems. Any difference in the fees established by this Order and actual costs will be reconciled during the future true-up procedure.

[88] Indeed, the SMECO AMI proposal captures *only* operational benefits, with a possible supply-side targeted program involving time-of-use rates in the future. Case No. 9294, ML#140535: *Request of Southern Maryland Electric Cooperative, Inc. for Authorization to Proceed with Implementation of an Advanced Metering Infrastructure System* (June 13, 2012) at 3-4.

[89] For example, BGE and PHI offer dynamic pricing programs that provide credits for voluntary usage reductions compared to customer-specific calculated baselines. Not all customers who have a smart meter may choose to participate in any given event for any number of reasons.

[90] MSMA July 31, 2013 Comments at 13.

[91] *Re Electric Utility Rate Structures*, 68 Md. PSC 467, 468 (1977); *Re Lifeline Rates for Electric Service*, 73 Md. PSC 702, 705 – 706 (1982).

generally such programs have been legislatively authorized.[92]

ii. Accepted Adjustments

For all of the Utilities' opt-out fee proposals, Staff has provided a detailed breakdown of the costs associated with each component as both initial implementation and recurring costs.[93] Adjustments to some cost components are applicable across multiple Utility proposals, and others are specific to an individual Utility.

1. Costs Associated with Mesh Network Devices

Depending upon the geographic distribution of the opt-out customers, a utility may need to fortify the backbone of its AMI communication network by installing additional relays — in essence "plugging the holes" created by an absent AMI meter. The number of incremental relays resulting from a customer's decision to opt out also scales depending on the demographics of the service territory.[94] Although the cost of an individual relay is known, we find that the distribution and location of opt-out customers is yet too imprecise to estimate with confidence the ultimate number of incremental relays, and is therefore more appropriately accounted for by directing the Utilities to track actual expenditures in a regulatory asset. The Commission will consider and review the actual costs associated with any incremental mesh network upgrades at a later date.[95]

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[92] Vermont prohibits utilities from charging for opt out. Sec. 1.30 V.S.A. 801. California has reduced fees for low income customers enrolled in the California Alternate Rates for Energy (CARE) program.

[93] Staff September 10, 2013 Comments at 3-7. We will not reproduce each individual cost in this Order. However, as stated previously, we will re-visit these costs after the percentage of opt-out customers has stabilized.

[94] For example, a greater number of customers can opt out in a densely populated area before the installation of an additional relay is necessary than compared to the number of customers who can opt out in a rural setting without triggering an infrastructure upgrade.

[95] The inclusion of incremental mesh network upgrade costs in an opt-out fee shall not be considered until such time that the Commission determines the utility in question has delivered a cost-effective AMI system.

2. Meter Reading Assumptions

A major component of the ongoing costs directly attributable to opt-out customers is the cost associated with maintaining a staff of meter readers — a feature redundant to the capabilities of AMI. The number of meter reading staff and the hours attributed to the meter reading function will differ from utility to utility, depending on both the number of customers who ultimately opt out, as well as the distribution of those customers and the demographics associated with a customer's location. Therefore, we find it appropriate that the opt-out fees established by each of the Utilities should reflect suitable assumptions relative to those attributes about the meter reading time spent per opt-out customer per month. We have not adjusted the assumption incorporated in BGE's cost proposal, which roughly translates into 0.06 hours per opt-out customer each month. However, we find the meter reading assumption proffered by PHI of 0.5 hours per opt-out customer each month is unreasonable, given the baseline provided by a similarly situated utility. By the same consideration of demographics and distribution, we attribute a higher meter reading assumption to Delmarva than Pepco, and decline to adopt PHI's cost model structure that is based on a single assumption for both Utilities. We also find it reasonable that Delmarva and SMECO, both representing a more rural service territory, will encounter similar meter reading times per customer. Furthermore, we anticipate that the meter reading times incorporated into these fees may be further optimized, given our decision to allow installation of ERT/AMR meters in lieu of smart meters. Lastly, we note again here that the Utilities are required to track actual meter reading expenditures, which may form the basis of a fee adjustment at our later true-up

proceeding.

3. BGE Adjustments

Although we accept several recommendations for adjustments to BGE's proposed opt-out fee as outlined above, the record overall supports the conclusion that these costs reflect a reasonable estimate of BGE's expenses in allowing opt-out customers to retain their legacy meter. Of the Utilities, BGE will likely experience the highest volume of opt outs considering the size of its customer base. As to the adjustments we accept herein, we agree with Staff's conclusion that BGE's estimated overtime costs for meter readers is premature and we have not included those costs in the fees to be incurred by opt-out customers.[96] We also accept Staff's recommendation to reduce the up-front fee to $75.00.[97] After accounting for the treatment of costs associated with incremental mesh network devices, the monthly fee for BGE opt-out customers is established at $11.00. As we have stated, we will re-visit these fees after the percentage of opt-out customers stabilizes and actual costs are known, and we will make any adjustments necessary at that time.

4. Pepco and Delmarva Adjustments

We accept several recommendations for adjustments to the opt-out fees proposed by PHI, as the fees are based on several assumptions unsupported by the record.

As Staff observed, Pepco and Delmarva have structured their opt-out proposals in a manner similar to BGE. However, we agree with Staff that several of these costs should be eliminated in calculating the monthly fees. First, Pepco and Delmarva will not

[96] Staff September 10, 2013 Comments at 8.
[97] Staff September 10, 2013 Comments at 9.

be allowed to charge customers for a cost associated solely with retaining their legacy meter.[98] Second, we agree that two "truck rolls" for installing and removing meters is unwarranted.[99] Third, we will not authorize additional costs based upon forecasts of opt outs in future years.[100] Instead, we will evaluate the actual growth, or decline, in opt-out customers once the percentage of opt-out customers has stabilized.

Therefore, based upon PHI's initial cost estimates and the adjustments noted above, we approve an initial up-front fee of $75.00 and a monthly fee for Pepco opt-out customers of $14.00 and Delmarva customers of $17.00. We will revisit all costs associated with allowing customers to opt out when the percentage of opt-out customers for Pepco and Delmarva has stabilized.

5. SMECO Adjustments

SMECO's initial estimate required an up-front fee of $105.32 and a monthly fee of $34.94.[101] Staff concluded that with the exception of charging for two truck rolls to install and remove smart meters, SMECO outlined reasonable cost estimates to administer an opt-out option; removing the costs of a second truck roll reduces the costs.[102] In addition to the adjustment suggested by Staff, we also decline to allow SMECO to recover costs associated with lost operational revenues, at least at this time. Although we recognize and appreciate SMECO's efforts to track and quantify lost operational revenues using a previously completed AMI pilot in their service territory, we find that denial of lost operational revenues at this time is consistent with our decision to

[98] Staff September 10, 2013 Comments at 13. Neither BGE nor SMECO included this cost in their opt-out proposals.
[99] Staff September 10, 2013 Comments at 13.
[100] Staff September 10, 2013 Comments at 13.
[101] SMECO April 25, 2013 Comments at 3.
[102] Staff September 10, 2013 Comments at 17.

defer cost recovery for the overall AMI system until the time that Utilities deliver a cost-effective AMI system. Therefore, based on SMECO's initial cost estimates and the adjustments noted above, we approve an up-front fee for SMECO opt-out customers of $75.00 and a monthly fee of $17.00. We will revisit all costs associated with allowing customers to opt out when the percentage of opt-out customers has stabilized.

C. Implementation

1. Transparent Billing and Communication Practices

In order to make an informed decision about whether to opt out, it is essential that the Utilities make it clear to customers the fees they will incur for opting out. Transparent billing practices will assist customers in tracking the up-front and monthly fees associated with the opt-out choice. To this end, we direct the Utilities to clearly delineate the charges as a separate line item on a customer's bill, denoted as the opt-out fee. The notation should also explicitly differentiate between the one-time, up-front fee and the ongoing, monthly fee.[103]

Furthermore, we note and adopt in part the communications recommendations by OPC.[104] Upon receipt of a customer's choice to opt out,[105] the Utilities shall confirm receipt to the customer in writing within 10 business days. This specific communication must contain acknowledgement of the customer's choice; information on the one-time

[103] In the event that a customer remits only partial payment one month, the Utilities are directed to follow the posting priority established in existing tariffs or to seek Commission approval for a modified posting priority arrangement.

[104] July 31, 2013 OPC Comments at 7.

[105] OPC's comments imply that a customer must notify a utility in writing of the decision to opt out. July 31, 2013 OPC Comments at 7. However, we decline to adopt this requirement, and direct the Utilities to accept a customer's notification made via a utility's website, by email, in writing, *or* made by phone to a utility's customer call center.

and monthly fees;[106] and citations to relevant tariffs, company websites, and Commission decisions.[107] To the extent possible, this communication should be standardized across the Utilities. Any materials provided to the customer should be developed and submitted to the AMI work group for review and comments, and subsequently filed with the Commission for approval within 45 days of this Order.

2. Timeline for Implementation of Opt-Out Fee

i. Treatment of Interim Opt-Out Customers

Previously we allowed customers to inform their utility in writing if they wished to opt out on an interim basis while we evaluated the costs associated with an opt-out option. Customers who chose to defer installation of their smart meter at that time did so without knowing the full extent of the financial implications of their decision. Now that the cost allocation issue is addressed, we direct the Utilities to communicate in writing with all interim opt-out customers within 60 days of this Order. The Utilities' written communication shall notify the affected customers of the Commission's decision as outlined by this Order, specifically referencing the customer's right to retain their legacy meter,[108] the fee structure that will apply should they continue to exercise their choice to opt out, and when they can expect to see such one-time and monthly fees applied to their bills. An interim opt-out customer must agree, either verbally or in writing, to receive a smart meter prior to the meter being installed. Absent such an agreement, no further action shall be required on the part of the interim opt-out customer for the deferral

[106] Such information should include, but is not limited to, information pertaining to: the fee schedule; the one-time versus ongoing nature of the separate fee components; the date of the billing cycle in which the fees will become effective; and an explanation on how the customer can rescind their choice to opt out.
[107] The Utilities are not required to enclose copies of relevant tariffs or Commission decisions.
[108] As discussed herein, the Utilities may install an ERT/AMR meter in lieu of a smart meter at no additional charge in the event that a customer's legacy meter is not already an ERT/AMR meter.

decision to become their effective opt-out choice. However, the Utilities' written communication must include information about how a customer can rescind their previous opt-out deferral by July 1, 2014, without fee or penalty.

ii. Treatment of Utility Customers Who Have Not Deferred

Customers who did not initially exercise their choice to defer installation of a smart meter are still afforded the opportunity to opt out per the conditions of this Order, regardless of whether the customer currently has a smart meter installed.[109] Customers who currently have a smart meter installed, but who now wish to opt out, must take affirmative action to notify their utility of their desire to opt out.

Other customers affected by this Order include those customers in a service territory who are currently engaged in some stage of a Utilities' communications plan for smart meter installations. This may include customers with indoor or otherwise inaccessible meters. This group of customers may choose to immediately notify their utility of their desire to opt out. In the event that the customers do not immediately notify their utility of an opt-out decision, we affirm our decision in Order No. 85908[110] and now direct *all* Utilities affected by the inaccessible meter issue to increase efforts to contact non-responsive customers as described within Order No. 85908. All affected Utilities are directed to report back to the Commission no later than July 1, 2014 regarding progress in obtaining access to customers' meters.[111]

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[109] Utilities are not permitted to levy any additional fees for removal of an installed smart meter, although the customer is still responsible for the up-front and monthly opt-out fees established by this Order.

[110] Order No. 85908 also denied BGE's request to treat non-responsive customers as having opted out of a smart meter and ordered BGE to not terminate any non-responsive customers for failing to allow the installation of a smart meter at this time.

[111] We note that the July 1, 2014 deadline prescribed herein extends the six month reporting requirement contained in Order No. 85908. BGE, and any other affected utility, must report back to the Commission by July 1, 2014 on this matter.

A final group of customers affected by this Order involves customers in a service territory who will not yet be scheduled for deployment prior to the July 1, 2014 fee effective date established in this Order. This group of customers may immediately notify their utility of their desire to opt out, or they may do so upon receiving notification of the deployment schedule from their utility.[112] The Utilities are prohibited from charging opt-out fees to this group of customers until the first full billing cycle following the AMI installation for that particular customer's community.

3. Effective date of fees

In order to allow the time to communicate with customers about their options regarding AMI opt out, and to allow a reasonable time for customers to choose, fees associated with a customer's choice to opt out shall not appear on a customer's bill until the first full billing cycle following July 1, 2014. Following that date, the opt-out customer will receive a bill that includes notice of the one-time, up-front fee and the ongoing, monthly fee, along with a statement indicating that this charge shall be waived and removed from a customer's bill if the customer agrees, before the end of the subsequent billing cycle, to receive a smart meter.[113] We direct the Utilities to file revised tariff pages to reflect implementation of the opt-out fee structure described herein no later than May 30, 2014.

In their filed comments, MSMA recommended that "any imposition of the fee should wait until the Commission authorizes the utilities to build the recovery of the AMI

[112] The Utilities must continue to engage in their established deployment communication plans. This Order does not address or usurp the direction provided to BGE in Order No. 85908 in regard to non-responsive customers, and the Utilities are expected to continue to comply with the direction provided therein.

[113] An opt-out customer also has the option to opt in to receiving a smart meter at a later date, even after expiration of this 30 day window. However, any opt-out fees incurred prior to that opt-in date remain enforceable.

deployment into current rates."[114] Although we note that we will revisit at a later time cost recovery associated with the limited category of mesh network upgrades for reasons discussed herein, we decline to adopt the recommendation to delay the imposition of *any* fee for several reasons, stemming from both practical and policy concerns. The deployment of the Utilities' AMI infrastructure is ongoing, and the delay of cost recovery for AMI stems from the Commission's requirement that the Utilities complete deployment in the most cost-effective manner possible — a feat, argue some parties, potentially complicated by the decision to allow an opt out.[115] Although we concluded in Order No. 85294 that the public interest requires an alternative option to smart meter installation, we find no reason to warrant a further delay of the opt-out fees. The costs incurred by a utility as a result of allowing an opt-out option are immediate, and based on the record before us negatively affect the Utilities' business cases as approved by this Commission. As such, we find no compelling reason to delay cost recovery for a customer's choice that requires the Utilities to maintain parallel and redundant infrastructures. Furthermore, we are confident that the true-up procedure for the opt-out fees will capture any significant cost differentials between costs and recovery after the opt-out customer percentage stabilizes.

IV. Other States

In evaluating the cost proposals presented to us, we have remained mindful that several states are also implementing AMI and have considered accommodations for opt-out customers in their states. With the exception of Vermont, whose legislature

[114] MSMA July 31, 2013 Comments at 15.
[115] *See e.g.*, BGE April 6, 2012 Comments at 2-4.

prohibited utilities from charging customers an opt-out fee,[116] all other states that provide an opt-out choice have implemented a fee structure.[117] In California, three of the utilities have proposed rate structures that include an up-front fee, a monthly fee, *and* an exit fee.[118] More recent developments include the approval of opt-out fees for Florida Power & Light customers of $95 up-front and $13 monthly, and the approval of a $21.53 monthly charge for Commonwealth Edison customers in Illinois to defer a smart meter installation. In short, the fees we approve here, and will re-evaluate at the appropriate time, are within the range of opt-out fees charged by utilities around the country.

V. Conclusion

We appreciate the efforts of all parties in submitting the proposals and comments. We approve the fees as stated herein today based on the cost projections submitted by the Utilities. As we have stated repeatedly, we will re-evaluate those fees when the percentage of opt-out customers has stabilized, and we hereby order the Utilities to maintain an accurate accounting of all opt-out related costs to ensure that we can thoroughly analyze whether the fees associated with opting out need to be adjusted at the appropriate time.

We respectfully disagree with our dissenting colleague's assessment of the issues before the Commission at this time. We have taken great steps to mitigate the opt-out

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[116] Sec. 1.30 V.S.A. 801.

[117] Staff September 10, 2013 Comments at 18. Utilities in California, Maine, Michigan, Nevada, and Oregon all charge opt-out customers an up-front fee in the range of $40 (Maine) to $254 (Oregon), and an ongoing monthly fee which varies by utility. The California Public Utilities Commission implemented interim fees of $75 up-front and $10 monthly for its three investor-owned utilities before it convenes a second phase of a proceeding to consider individual utility proposals.

[118] Staff September 10, 2013 Comments at 19. We do not approve an exit fee for the Maryland Utilities.

fees established in this Order, and we have limited the Utilities' recovery to only those appropriate costs prudently incurred and directly attributable to opt-out customers. Furthermore, while our colleague believes that his suggested approach of delaying any cost recovery until a future rate case is representative of traditional ratemaking principles, it is our approach that encompasses the traditional ratemaking principle of cost causation by allocating to the opt-out customers the appropriate costs associated with their choice; moreover, it is consistent with the approach recommended by this State's Office of People's Counsel.

We also disagree with our colleague's understanding of how the future true-up proceeding envisioned by this Order would work. In this Order we have made several adjustments to the categories of expenditures that is the Utilities are permitted to recover via the opt-out fee, and denied recovery of several other categories of expenses. At the future true-up proceeding, we will revisit only the actual expenditures associated with the approved categories of spending. Any adjustment to the opt-out fees at that time will be a result of scaling due to a different number of opt-out customers than assumed in this Order. The recurring, ongoing expenses (such as meter reading costs) captured in the opt-out fees will scale depending on the ultimate number and distribution of opt-out customers; however, there are certain fixed components that do not scale. Furthermore, the true-up procedure will not address the one category of expenditures that we deemed yet too imprecise to estimate with confidence at this time – the ultimate number of incremental relays that a utility may require to fortify its AMI infrastructure. This Order clearly directs the Utilities to track actual expenditures associated with the mesh network in a regulatory asset, which the Commission will consider at the time the utility in

question has delivered a cost-effective AMI system. For these reasons and all others described in this Order, and consistent with the decision made by *every* state public utility commission that has addressed this issue before us, we establish the opt-out fees outlined in this Order.

IT IS THEREFORE, this 26th day of February, in the year Two Thousand and Fourteen, by the Public Service Commission of Maryland,

ORDERED: (1) that the Utilities shall offer their residential and small commercial customers the option of retaining their legacy meters;[119]

(2) that opt-out customers of BGE will pay a one-time, up-front fee of $75.00 and a recurring monthly fee of $11.00;

(3) that opt-out customers of Pepco will pay a one-time, up-front fee of $75.00 and a recurring monthly fee of $14.00;

(4) that opt-out customers of Delmarva will pay a one-time, up-front fee of $75.00 and a recurring monthly fee of $17.00;

(5) that opt-out customers of SMECO will pay a one-time, up-front fee of $75.00 and a recurring monthly fee of $17.00;

(6) that the Utilities shall charge opt-out customers the one-time, up-front fee of $75.00 through three monthly installments;

(7) that the Utilities are directed to file revised tariff pages to reflect the opt-out fees established herein no later than May 30, 2014;

(8) that BGE opt-out customers who have both electric and gas service and

[119] As noted, the Utilities may install an ERT/AMR meter in lieu of a smart meter. The customer will not incur any charge in addition to the-opt out costs we have approved herein.

who opt out of one service are presumed to opt out of both services, although such customers shall only be responsible for a one-time, up-front fee of $75.00 and a recurring monthly fee of $11.00;

(9) that the Utilities will maintain an accurate accounting of all costs associated with this opt-out program as identified in this Order to allow the Commission to re-evaluate the appropriate opt-out fees after the percentage of opt-out customers has stabilized;

(10) that the Utilities are directed to clearly delineate the one-time, up-front fee and the ongoing, monthly fee as separate line item charges on a customer's bill;

(11) that the Utilities are directed to develop and vet communications materials through the AMI work group as described herein that will be sent to opt-out customers within 10 business days of receipt of a customer's opt-out notification, and that the Utilities shall file these materials with the Commission for approval within 45 days of this Order;

(12) that the Utilities shall communicate with customers who have previously deferred installation of their smart meter, per the direction contained herein, within 60 days of this Order, and that if no action is taken by these interim opt-out customers they will be assumed to continue as opt-out customers and will incur the related costs no earlier than the first full billing cycle following July 1, 2014;

(13) that all other customers with already-installed smart meters or those currently scheduled for deployment prior to July 1, 2014 who did not take action under our Interim Opt-Out Order may notify their utility if they wish to opt out and retain their legacy meter, subject to the fees established herein;

(14) that all customers not scheduled for smart meter deployment prior to July 1, 2014 may opt out upon receiving notification of the deployment schedule from their utility, and that the Utilities shall not charge the opt-out fees identified herein to such customers until the first full billing cycle following the AMI installation for that customer's community;

(15) that new customers initiating service at a residence of a prior opt-out customer will receive an AMI meter unless they opt out at the time they initiate service;

(16) that all Utilities affected by the inaccessible meter issue are directed to increase efforts to contact non-responsive customers and report back to the Commission no later than July 1, 2014 regarding progress in obtaining access to customers' meters;

(17) that all costs approved by this Order shall appear on opt-out customer bills and become effective no earlier than the first full billing cycle after July 1, 2014; and

(18) that all pending motions not otherwise addressed in this Order are hereby denied.

/s/ W. Kevin Hughes

/s/ Lawrence Brenner

/s/ Kelly Speakes-Backman
Commissioners

DISSENT OF COMMISSONER HAROLD D. WILLIAMS

While I support the Commission's decisions with regard to advanced metering infrastructure ("AMI") build outs in Maryland, and I acknowledge the advantages and benefits that the deployment of smart meter technology may bring, both for the Utilities and for the customers who elect to participate, I do not believe that imposing significant cost on customers who choose to opt out of the Utilities' smart meter implementation plans is reasonable and in the public interest. Achieving more reliable service for all should not require those customers who choose to opt out to pay higher monthly prices.

In prior orders, the Commission authorized the Utilities to commence their AMI deployment and authorized the Companies to establish regulatory assets to track the incremental cost associated these endeavors. We further authorized, that at such time after the Utilities have implemented "cost-effective AMI systems," that they may seek cost recovery in base rate proceedings. I agree that those costs, including opt-out costs, if any, should be tracked and reviewed in the Companies' future base rate proceedings. In my view, the Commission should not allow the Companies to impose exorbitant up-front and monthly recurring opt-out fees upon customers who elect not to install smart meters at this time.[1] Those costs, including opt-out costs, if any, should be tracked and reviewed in the Companies' future base rate proceedings.

[1] My focus on the economic impact of opt-out costs on low-income, poor, and fixed income customers does not suggest that I consider the health, safety, and privacy issues raised by some parties to be minimal or insignificant. Indeed, given those issues, I find imposing such additional costs on opt-out customers even more egregious.

The Majority notes that opt-out fees are charged by utilities in *some* other states. However, I find it noteworthy, and the Majority also observes, that at least one state legislature (i.e., Vermont) has prohibited utilities from charging opt-out fees altogether.[2]

Moreover, the magnitude of these fees, $75 up-front for opt-out customers across the board, plus an additional $11 per month (for BGE opt-out customers) and as much as an additional $17 per month (for Delmarva and SMECO opt-out customers), plus additional "true-up" costs (when "Mesh Network Reinforcements" relay costs are added in), will fall disproportionately on some customers, particularly low-income, poor and fixed-income customers. The Majority insists that it would be discriminatory to set different rates for low-income customers, yet hoisting additional up-front and monthly recurring opt-out fees on these customers will surely have the perverse result of adding to their already burdensome costs of living – generating more arrearages and risking more service interruptions and turn offs.[3]

I also worry, and the Majority should as well, that that the charges established in today's decision alone will not satisfy the Utilities' revenue expectations,[4] thus leading the

[2] Under Vermont's law, the cost of customers opting out (*i.e.*, mainly the cost of retaining some, but not all, of the utilities' existing meter readers) will be spread across all customers, rather than being paid solely by opt-out customers. Dave Gram, *No Opt Out Fee Under New Legislation*, Huffington Post, May 14, 2012. http://www.huffingtonpost.com/2012/05/14/vermont-smart-meters-opposition_n_1514544.html Rather than impose high costs on opt-out customers at this time, the Commission could, as in the case of Vermont, submit this matter to the Maryland Legislature for its determination.

[3] In fact, these charges are no fairer even to customers who are reasonably well off. They too are captive utility customers – customers who heretofore had little or no choice with regard to their utility service metering equipment and are now forced to choose; to opt in and accept equipment that they do not want (perhaps for health, safety or privacy reasons), or opt out and pay the high monthly charges proposed by the Utilities.

[4] The charges approved in today's order are substantially below the amounts requested by the Utilities, and already do not include costs proposed for the Utilities "Mesh Network Reinforcement" relays (designed to ensure that the continued use of legacy meters does not impair functioning of the Utilities' smart meter technology). The Majority refers to evidence that a significant portion of the Utilities' estimated total fixed costs applicable to opt out relates to Mesh Network Reinforcement relays. *See e.g.*, Majority Opinion at 8, n 26.

Utilities to seek even higher monthly opt-out revenues in the future.[5] Because, of the likelihood of such higher opt-out costs in the future, and the disproportionate effect of these costs on low-income, poor and fixed-income customers, I respectfully dissent.

Instead of establishing up-front and monthly recurring opt-out rates at this time, I believe the more prudent path would be to consider AMI system implementation costs, including opt-out costs, in the Utilities' future base proceedings. This approach would be consistent with traditional ratemaking principles, under which the Commission would examine the Companies' actual costs rather than the highly speculative costs that have been presented and considered to date.

/s/ Harold D. Williams
Commissioner

[5] For instance, BGE estimates that more than 300,000 homes with inside meters remain in areas where smart meters haven't even yet been deployed. *See BGE Request for Rehearing* in Case No. 9208 (ML# 150739) at 4. BGE also noted that there are as many as 150,000 customers *still* in some stage of the Company's eleven-step pre-deployment communications process. *Id.* at 4, n 1.

EXHIBIT C

MURPHY STATEMENT NO. 2

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Laura Sunstein Murphy	:	
	:	
v.	:	Docket No. C-2015-2475726
	:	
PECO Energy Company	:	

DIRECT TESTIMONY
COMPLAINANT
LAURA SUNSTEIN MURPHY

April 29, 2016

TABLE OF CONTENTS

DIRECT TESTIMONY
OF
LAURA SUNSTEIN MURPHY

I. INTRODUCTION AND PURPOSE OF TESTIMONY

1. Q. Please state your full name and address.

A. My name is Laura Sunstein Murphy. My address is 1191 Telegraph Road, West Chester, PA 19380.

2. Q. How long have you lived at your current address?

A. I have lived at my current address since 1990.

3. Q. Are you a customer of PECO Energy Company?

A. Yes. I receive residential electric service from PECO under account number 2346901005.

4. Q. How long have you been a PECO customer?

A. I have been a PECO customer since 1967.

5. Q. What have you alleged in your complaint?

A. My complaint, and the amended complaint filed on July 28, 2015, allege that PECO's installation of a smart meter that emits harmful EMFs on my house would create an unsafe and unhealthy condition in my home because I suffer from a number of rare and serious medical conditions which are exacerbated by exposure to such emissions. I am asking the Commission to order PECO

to provide me with safe and reasonable service in compliance with the Public Utility Code.

6. Q. Would you please tell us why you are here today?

A. I am here today because Pennsylvania has no opt out for Smart Meters, and I have genetic medical conditions which require me to limit all forms of excessive oxidative stress in my life. PECO's smart meters, including the current AMR meter which has been on my house since May 2002 (I recently found out pursuant to PECO's Answers to Murphy Interrogatories, Set I, Appendix A) and the proposed AMI smart meter which PECO has demanded it install under threat of termination of my electricity (Appendix B) both emit far too many bursts of EMF for my body to handle safely. I want to register first both my public embarrassment and my indignation on account of the ordeals that PECO has forced upon me with its Gestapo tactics regarding universal deployment of smart meters to its customers, with no regard for deleterious health effects of those meters on sensitive individuals. I know a few other individuals in PECO's territory who have been adversely affected by smart meters installed on their homes, but they have been intimidated by PECO into submission. I have overcome my embarrassment and I have moved forward with demanding respect for my individual rights under the law and my health and wellbeing. My own grandmother was not permitted to vote solely because she was a woman. I will never forget her telling me that she became a suffragette, along with her sister, demanding their rights to vote along with their husbands.

If Pennsylvania did have an opt out, I merely would have opted out of having any sort of wireless meter on my home, and that would be the end of it. I would not be wasting the Commission's time, my retirement money, my experts' time, and PECO's time. I would not have to reveal to my utility company very private information about my genetic diseases which have been greatly aggravated by the EMF emitted by the wireless transmission of the AMR meter on my home. I would not have to be forced to reveal very private health issues to my utility company which I have only revealed to my health care providers. I would simply fade into the woodwork.

But Pennsylvania does not offer an opt-out to smart meters. The Pennsylvania PUC has interpreted Act 129 to require universal deployment of smart meters to all affected electric utility customers, apparently even if deployment of those meters would be harmful to the health of certain of those customers. This is unacceptable to me.

7. Q. What advice has PECO and the Commission given to Complainants who have expressed the desire not to have a smart meter installed on their property?

A. PECO and some PUC judges have advised PECO smart meter health issue Complainants, in filings and in rulings, that PECO customers who wish to opt out of smart meters should seek a legislative solution.[1]

8. Q. Is a legislative solution a feasible alternative for you?

A. No. Unfortunately, Robert Godshall has been the Chairman of the House Consumer Affairs Committee of the Pennsylvania House of Representatives for many years**.** Mr. Godshall's son works for PECO. In fact, until recently, Mr. Godshall's son worked for PECO's smart meter roll out initiative. Although it has been reported that Mr. Godshall does not have a smart meter on either his office or his residence, Mr. Godshall has been a vehement opponent of any customer who alleges deleterious health effects from a smart meter having her day in Court. See, Appendix C, Robert Godshall letter to the PUC regarding the initial PUC decision of September 2015, on PECO's interlocutory appeal of Judge Heep's ruling on the Kreider Complaint in July 2015.

[1] See, e.g., *Povacz v. PECO*, Docket No. C-2012-2317176, 2012 Pa. PUC LEXIS 1579 (Order issued September 28, 2012); *Tucker v. PECO*, Docket No. C-2015-2515592 (Oder issued April 5, 2016); Respondent's Preliminary Objections in this Docket.

Mr. Godshall has steadfastedly refused to allow any opt out bills to smart meter deployment to be debated and called for a vote. The only smart meter bill which Robert Godshall has allowed to be debated and called for a vote, is the bill which seeks to protect the privacy of electrical consumption of the customer who owns smart appliances, gleaned by intrusion into the private life of the customer.

Those customers who have legitimate health concerns over the safety of the wireless smart meters deployed by PECO as to us, have no reason for optimism that the congressmen who have introduced opt out bills in the Pennsylvania legislature will be able to see any of those bills passed during their lifetimes. Such is the ability of any PECO customer to "seek a legislative solution" to the health effects of smart meters on vulnerable individuals.

9. Q. Are you aware of any other possible alternatives available to you?

A. I understand PECO has considered having sensitive individual customers who claim deleterious health effects from smart meters that the customer move the meter socket (at the customer's expense), to a location farther from the customer's living space.

10. Q. Is moving the meter socket a viable alternative in your situation?

A. No. Moving the meter would not be a viable alternative for me. As explained more fully below and in the testimony of Dr. Pall (Murphy St. 1),

the harmful effects of EMFs for sensitive individuals like me are not ameliorated by simply moving the meter a short distance. Perhaps PECO believes that moving the meter socket of a customer's residence would protect the customer from the harmful effects of EMF emitted by the smart meter. Of course, PECO is not prepared to accept the premise that any customer could be harmed by EMF emitted by PECO's smart meter in the first place, or by any other effect of the smart meter on a customer's home.

11. Q. What actions of PECO have led you to believe that PECO is either uninformed or willfully blind in this respect?

A. That was evident from the hearing of the Complaint of Susan Kreider vs. PECO. I attended Ms. Kreider's hearing in early March 2016, and I recall Dr. Mark Israel, PECO's expert medical witness, testifying that Ms. Kreider's symptoms (which Ms. Kreider had testified had first appeared shortly after the smart meter was placed on her home, and that most of those symptoms had started to fade shortly after she was forced to remove the smart meter from her home and replace it with an analog meter due to health reasons) could not have been caused by the smart meter. Dr. Israel testified that there was no credible evidence that smart meters can cause health effects. Dr. Davis, PECO's expert witness, testified in the Susan Kreider case that there was no mechanism by which low level EMF which was too low to heat up the tissues could cause harm, because there was no mechanism to explain how it could happen. See, Appendix D (Excerpts of Transcript from March 7, 2015 hearing).

EXHIBIT D

PUC-77

PENNSYLVANIA PUBLIC UTILITY COMMISSION
Uniform Cover and Calendar Sheet 5

1. REPORT DATE: November 4, 1993	2. BUREAU AGENDA NO. NOV-93-OSA-238* (3rdRev.)
3. BUREAU: Office of Special Assistants	
4. SECTION(S):	5. PUBLIC MEETING DATE November 10, 1993
6. APPROVED BY: Director: C.W. Davis 7-1827 Supervisor:	
7. PERSON IN CHARGE: A. Arnold 7-8032	
8. DOCKET NO.: A-110550F055	

9. (a) CAPTION (abbreviate if more than 4 lines)
(b) Short summary of history & facts, documents & briefs
(c) Recommendation

(a) Letter of Notification of Philadelphia Electric Company Relative to Reconductoring and Rebuilding of the Existing 138 kV Line to Operate as the Woodbourne-Heaton 230 kV line.

(b) By Order entered March 26, 1993, the Commission, inter alia, directed a limited remand of the August 19, 1992 Initial Decision ("I.D.") of Administrative Law Judge ("ALJ") Smolen to consider recent studies of the scientific research concerning potential adverse human health effects of exposure to electric magnetic fields (EMFs). That I.D. considered the merits of certain protestants' claims that reconductoring of a line from 138kv to 230kv, which line had not been operative since on or about 1986, but did exist within a pre-existing utility corridor which corridor uses an active freight rail line, would adversely affect them through exposure to EMF, and diminish the property values of adjacent homeowners. On July 23, 1993, ALJ Smolen issued his I.D. on remand, which affirms the Commission's February 9, 1990 ruling which grants Philadelphia Electric Company's application and permits energization of said line. Exceptions and replies were filed.

CONTINUED

(c) The Office of Special Assistants recommends that the Commission adopt the attached draft Opinion and Order which denies the Exceptions and adopts the Initial Decision.

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10. **MOTION BY:** Commissioner Chm. Rolka — Commissioner Rhodes- No
SECONDED: Commissioner Hanger — Commissioner Quain - No
Commissioner Crutchfield-No

CONTENT OF MOTION: Adopt the Second Revision of the Staff recommendation.....Motion fails for lack of a majority

MOTION BY: **Commissioner** Rhodes* **Commissioner** Chm. Rolka - Concurring in result
* Concurring & Dissenting in part
SECONDED: **Commissioner** Quain **Commissioner** Crutchfield - Yes
Commissioner Hanger - Concurring in result

CONTENT OF MOTION: Third Revision of Staff recommendation adopted.

Vice Chairman Rhodes' Statement attached.
Commissioner Hanger's Statement attached.

PENNSYLVANIA PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

LETTER OF NOTIFICATION OF PHILADELPHIA ELECTRIC COMPANY RELATIVE TO RECONDUCTORING AND REBUILDING OF THE EXISTING 128 KV LINE TO OPERATE AS THE WOODBOURNE-HEATON 230 KV LINE

Public Meeting
November 10, 1993
Docket No. A-110550F055
NOV-93-OSA-238*

STATEMENT OF COMMISSIONER JOSEPH RHODES, JR.

Before us for consideration is the July 23, 1993, Initial Decision of Administrative Law Judge ("ALJ") Herbert Smolen. The central issue of this decision is the effect of electromagnetic fields ("EMF") on human health. An extensive record was developed during which all parties were given more than ample opportunity to place on the record whatever evidence would support their positions. According to the ALJ, this record, when viewed in totality, establishes that there is no proven causal connection between EMF and adverse human health effects. I concur with the ALJ's findings.

If we decide to affirm the ALJ's central recommendation, the Commission still faces a difficult decision. We can pretend that this decision only has relevance for the instant case, the 13 miles of the Woodbourne-Heaton line, or we can let this decision stand as the current and controlling position of the Commission on this most troublesome issue. The Office of Trial Staff ("OTS") wants us to adopt the former position and other parties urge us to embrace the latter.

In many ways the path of least resistance beckons us to confine this finding to the thirteen miles of Woodbourne-Heaton. Such a conclusion seems to offer the Commission the best of all worlds. It is the politically correct decision. We would affirm that the on record examination of this alleged link between power line EMF and adverse health effects resulted in a negative result, but this negative result is confined to the four corners of this instant case. To those who assert a causal connection we would hold out the hope that this decision is confined to Woodbourne-Heaton. And to those who want us to find that no causal connection exists, we could answer that is exactly what we found in this case, but only in this case and no other. We could please everyone.

Unfortunately, the mission of this Commission is not to please but to reach judgement in the public interest. We cannot pass the buck; we cannot even pass it to ourselves. Two years ago we decided that we would make EMF policy with this case when we decided not to launch a generic investigation into this issue. That is water over the dam and we cannot turn back the clock. Therefore I support the position that a generic investigation into

EMF effects and powerline regulations is not timely.

We, however, cannot seek refuge in the other extreme either. The electrons and photons just won't obey us. If the laws of physics dictate the negative finding on the question of EMF hazard for Woodbourne-Heaton, nothing we do today can confine those laws to this thirteen mile stretch of right-of-way. After review of the evidence of record the Judge found that there is no conclusive causal link between powerline EMF and health hazards. If this is true for Woodbourne-Heaton then it is certainly true for the rest of the Commonwealth. And if it is not true for the rest of the Commonwealth then we should not allow PECO to energize Woodbourne-Heaton.

Therefore, as long as the majority of this Commission finds it necessary to sustain the OTS exception on the "Limitations of the Findings and Conclusions" in this case, I must dissent on this result and concur in the remainder of the proposed order.

11-10-93
Date

J Rhodes Jr.
Commissioner Joseph Rhodes, Jr.

PENNSYLVANIA PUBLIC UTILITY COMMISSION
Harrisburg, Pennsylvania 17105-3265

LETTER OF NOTIFICATION OF
PECO RE: WOODBOURNE-HEATON
230 kV LINE

PUBLIC MEETING-
NOVEMBER 10, 1993
NOV-93-OSA-238*
DOCKET NO. A-110550F055

STATEMENT OF COMMISSIONER JOHN HANGER

In March, 1993, the Commission remanded the August, 1992 Initial Decision of ALJ Smolen for additional hearings. These hearings were limited to recent scientific evidence and comment concerning potentially adverse health effects which might result from exposure to electric and magnetic fields (EMF). Protestants have argued that energization of PECO's Woodbourne-Heaton 230 kV line could generate harmful health consequences. In the March, 1993 Order, the Commission also directed the ALJ to consider whether the Commission should adopt any standards for the width of the right of way in light of the findings concerning the potential health effects of EMF exposure.

The ALJ found that the record does not provide a current scientific basis for a finding that the EMF exposures generated by the power line are unsafe and that it is not possible at this time to set health-based standards for rights of way. PECO, the Office of the Consumer Advocate, the Law Bureau, and PP&L all agreed with the basic result as well, although each had somewhat different recommendations on how the Commission should proceed to develop a policy in the future.

This case is very troubling, because the issues involve the health of people. Protestants argue that there is reason to believe that they, their families, and children would be at increased risk of cancer and other health problems if this line is energized. Their health and safety is of vital concern.

This case is also very troubling, because the state of scientific knowledge and the resources of this agency, which do not include expertise about carcinogens or other public health threats, make it very hard to resolve questions which the scientific community itself is just beginning to ask. Put simply, this Commission does not have environmental or health expertise.

I urge other Departments of the State and Federal Government that do have such expertise to help decide, what, if any, health threats EMF exposure poses. Protestants and the public at large desire a definitive answer as soon as possible to the question of whether EMF exposure is a health threat. The PUC cannot give such a definitive answer one way or the other, and it is frustrating that our decision must focus on a "scientific" truth which

scientists admittedly have not found themselves.

Even though, in my view, this agency is ill-equipped to answer the questions that are at the heart of Protestants case, we must now render a decision. Despite this agency's limitations in this area, we cannot pass the buck.

I concur in the result reached today, because in my judgement the record in this case does not support a conclusion that energization of the line will create unhealthy conditions or that any alternative is preferable. I write a separate concurrence, because it does not fully reflect my reasoning or my remaining concerns.

As the Initial Decision clearly indicates, the result in this case is specifically limited to the facts and circumstances of the Woodbourne-Heaton line and the record in this proceeding. The Woodbourne-Heaton line is a 12.8 mile reconstruction of an existing 138kV line. It is located within an existing 60 foot wide utility right of way that is located within a wider Conrail right of way which ranges from 100 to 995 feet in width and averages 310 feet wide. Twelve out of the 238 poles of the line are located such that the utility right of way coincides with the edge of the Conrail right of way. The power line itself, which is deep within the Conrail right of way for most of its length, is about 30 feet from the nearest property line in its most outlying position. The remainder of the line is located between 40 and 740 feet from the nearest property line. The nearest residence is 125 feet from the center of the right of way.

EMF exposures vary by distance from the EMF source and the use of the line at any point in time. At the edge of the right of way, exposure will be less than 26 mg 90% of the time. At emergency maximum operating conditions, which is not expected to exceed 4 hours annually, EMF levels will be 70 mg at the edge of the right of way. EMF levels will be between 0.5mg and 19 mg at the edge of the Conrail right of way under normal operating conditions.

EMF levels fall rapidly as one moves further away from the EMF source. Consequently, the actual homes of the Protestants will in many cases have little or no exposure to EMF from this line and always significantly less than that experienced at the edge of the right of way.

These exposures must be kept in perspective. New York and Florida, the first two states to adopt specific EMF exposure regulations, require that exposures be below 200 mg and 150 mg respectively at the edge of the right of way. These limits are not based on health standards but on average exposures on comparable lines. The Woodbourne-Heaton line will create EMF levels far below these recommended maximums.

Additionally, the EMF exposures that will be created by the line are similar to many EMF exposures that residents will experience simply as a result of day-to-day living in their homes. For example, at 12 inches, the magnetic field from a television is 0.4 to 20 mg; from a microwave it is 40 to 80 mg; from a hair dryer it is 1 to 70 mg; from an electric range it is 4 to 40 mg. All of these exposures are dramatically higher at closer range and dramatically lower at greater distances. The Protestants, however, accurately point out that microwaves or hairdryers are not used 24 hours per day while the transmission line will operate continuously and cannot be avoided. Protestants' homes, as do all homes that are served by electric lines, do not have continuous EMF sources other than the transmission line.

While I hesitate to discuss cost when the primary concern is about health, cost cannot be ignored, especially when no authoritative health body in the United States has concluded that EMF poses a threat to health. Remedies to achieve lower EMF levels would be extremely expensive and would be paid for by all ratepayers. It would cost $38.5 million and take two years to place the line underground. Protestants have proposed that PECO purchase all properties along the line, any portion of which would be exposed to magnetic field levels above 1 mg for more than 5% of the time. PECO has estimated that this would require a 500 foot right of way and would cost at least $160 million.

These costs are enormous and would cause the price of electricity to skyrocket if such remedies were to be extended to all transmission and distribution lines. If appropriate medical and scientific bodies conclude that EMF does endanger health, such costs may have to be incurred and our whole existing way of life will have to be altered. Again, the prospect of incurring these large costs is another reason why we all need an authoritative answer about EMF's health effects, if any, as soon as possible.

Thus, given that the record of current scientific understanding does not now, in my judgment, support a conclusion that the Woodbourne-Heaton EMF exposures are unsafe, I reluctantly accept the recommendation of the ALJ in this case. While I am deeply concerned about EMF exposure, I cannot now say that the EMF exposures that will result from this line are so fundamentally different than those that we encounter in everyday life that we should either spend large sums to achieve an uncertain result or refuse to energize the line.

The issues raised in this case are not limited to the facts of whether or not EMFs cause health problems. Fear of health problems and their impact on property values are realities that must be addressed as well. Some have suggested that the concerns of Protestants in this case should somehow be taken less seriously because they voluntarily chose to live near an existing power line and railroad right of way. Such suggestions are nonsensical.

Nobody knew a few years ago that EMFs would generate the health questions and controversies that now exist. Nearly all Protestants bought their homes before EMF exposure became the subject of wide public discussion.

Probably, because of the EMF issues, people are less willing to live near power lines and less willing to pay as much money for a similar home in a location without an adjacent power line. If it can be demonstrated that property values in fact decrease because of a line, such losses should be compensated. The regulated community must approach issues of compensation fairly and reasonably. The perception of potential adverse health effects of EMF are appropriate considerations in property appraisals in utility condemnation proceedings. See, In Re Appeal of Geisler, 622 A.2d 408 (Cmwlth Ct. 1993). Several other states have reached similar legal conclusions when this question has been decided by their courts.

Lastly, I note that these issues are far from resolved. The proposed rulemaking will require the participation of many different parties. As scientific evidence changes, it is possible that our siting standards will change dramatically or that wider rights of way will be found to be useless. Public education will continue. The effect on property values will both become more certain and vary over time. Certainly, however, this Commission must focus on this important issue for years to come.

November 10, 2003
DATED

John Hanger
JOHN HANGER, COMMISSIONER

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P.O. BOX 3265, HARRISBURG, PA 17105-3265

November 12, 1993

IN REPLY PLEASE
REFER TO OUR FILE
A-110550F055

PAUL R BONNEY ESQUIRE
PHILADELPHIA ELECTRIC COMPANY
2301 MARKET STREET
PO BOX 8699
PHILADELPHIA PA 19101

Letter Notification of Philadelphia Electric Company Relative to Reconductoring and Rebuilding of the Existing 138 kV Line to operate as the Woodbourne-Heaton 230 kV Line in Montgomery and Bucks Counties.

To Whom It May Concern:

This is to advise you that an Opinion and Order has been adopted by the Commission in Public Meeting on November 10, 1993 in the above entitled proceeding.

An Opinion and Order has been enclosed for your records.

Very truly yours,

John G. Alford, Secretary

smk
Encls.
Cert.Mail

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265
Public Meeting held November 10, 1993

Commissioners Present:
David W. Rolka, Chairman, Concurring in result
Joseph Rhodes, Jr., Vice-Chairman, Concurring and Dissenting in part - Statement attached
John M. Quain
Lisa Crutchfield
John Hanger, Concurring in result - Statement attached

Letter Notification of Philadelphia Electric Company Relative to Reconductoring and Rebuilding of the Existing 138 kV Line to operate as the Woodbourne-Heaton 230 kV Line in Montgomery and Bucks Counties

Docket No. A-110550F055

OPINION AND ORDER

BY THE COMMISSION:

Before us for consideration is the July 23, 1993 Initial Decision of Administrative Law Judge ("ALJ") Herbert Smolen. This matter was before ALJ Smolen on remand pursuant to our Order of March 26, 1993, wherein we directed as follows:

1. This matter be remanded to the Office of Administrative Law Judge for the purpose of:

a. receiving evidence and comment regarding all studies of the health effects of magnetic fields which are available on or before the hearings on that evidence commence; and

b. determining, in light of findings regarding health effects what, if any, standards should exist for right-of-way width for the Woodbourne-Heaton 230kv line.

2. That no other matters are to be considered, and the presiding Administrative Law Judge shall issue a supplemental decision concerning these additional studies and appropriate right-of-way standards within 120 days of the entry of this Opinion and Order.

3. That the petition to intervene of Duquesne Light Company, et al. is denied.

4. That the Commission's Office of Trial Staff is granted leave to participate, nunc pro tunc.

Pursuant to our direction for a limited remand of this matter, a telephonic prehearing conference was held on March 31, 1993. By Order dated April 9, 1993, the presiding ALJ established a procedural schedule. Pursuant thereto, additional direct testimony was submitted on May 12, 1993 by the Philadelphia Electric Company ("PECO" or alternately "Applicant") and the Office of Consumer Advocate ("OCA").

Protestants[1], Pennsylvania Power & Light Company ("PP&L") and the Prosecutory Staff of the Commission's Law Bureau submitted written position statements pursuant to the ALJ's Order of May 6, 1993. The Commission's Office of Trial Staff ("OTS") submitted a letter explaining, inter alia, that it could not prepare and serve testimony within the procedural schedule established. See Order denying reconsideration, (Order entered June 10, 1993).

Hearings for the introduction of written direct and rebuttal testimony and cross-examination thereon were held in Philadelphia on May 27, 28, and June 1, 1993. All parties were present there and the OTS indicated that it would monitor the proceedings. The record, on remand, consists of 234 pages of transcript and various exhibits. Briefs and Reply Briefs were filed by PECO, the Commission's Law Bureau, OCA and PP&L. Protestants filed Proposed Findings of Fact and Conclusions of Law. The OTS, upon indication to the ALJ that it reserved such right, did not file a brief, but did file a reply brief.

---

[1] Protestants are certain property owners within proximity to the route of the proposed Woodbourne-Heaton 230kV line.

On conclusion of the parties' cases on remand, the ALJ made 53 findings of fact. Unless noted otherwise, we shall adopt said findings and incorporate them by reference.

Background of the Proceedings

An extensive background of the proceedings has been set forth in our March 26, 1993 Opinion and Order. Pursuant to the Memorandum Opinion and Order of the Commonwealth Court dated May 24, 1991, No. 761 C.D. 1991, per the Honorable Madaline Palladino, this Commission, after approval of the Letter Notification of PECO to reconstruct a 138 kV transmission line, previously owned by Conrail, as the Woodbourne-Heaton 230 kV Line, was directed to conduct hearings on the question of whether they [Protestants] will be adversely affected by the reconductoring of the line at issue. Protestants are property owners in proximity to the proposed Woodbourne-Heaton 230 kV Line.[2]

We have previously considered the findings of ALJ Smolen in his Initial Decision issued August 19, 1992, wherein it was determined, inter alia, that: (1) the proposed Woodbourne-Heaton Line is located within an existing utility corridor and will use a "compact delta" configuration which produces lower readings of electric and magnetic fields as compared to other possible engineering design alternatives. See Findings of Fact Nos. 32; 56, 57. March 26, 1993 Order[3]; (2) that the record in this proceeding does not establish an adverse human health effect resulting from exposure to EMF. See Findings of Fact Nos. 36-43, Id.; and (3) determination of matters involving the diminution of property values of adjacent property owners, although such alleged diminution of value is based on a rational perception of fear and

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[2] The Woodbourne-Heaton 230 kV Line is 12.8 miles in length and has several existing or recent public utility uses, including, inter alia, an active Conrail single track freight rail system.

[3] The use of the compact delta configuration was not based on any pre-construction calculation of the electric and magnetic fields by PECO, but appears to be more the result of coincidence. See Finding of Fact No. 45, March 26, 1993 Order.

apprehension of the potential adverse health effects of exposure to EMF, was not within the jurisdiction of the Commission. See March 26, 1993 Order, Slip Op. pp. 16-17.

In our March 26, 1993 Order, we were motivated by a compelling sense of fairness to fully consider all recent data from the scientific community which would, in our view, tip a so far balanced scale in either direction concerning the potential for adverse health effects from exposure to Electro-Magnetic Fields (EMF). Further, if one were to assume such an adverse correlation could be established, we were concerned as to whether there could be any guidance furnished to this Commission as to the preservation of the safety of the public and mitigation of potential adverse health effects concerning EMFs.[4]

Discussion

Upon the conclusion of the cases on remand, the ALJ reached the following Conclusions of Law:

> 1. The Commission has jurisdiction over the parties and subject matter of this proceeding.
>
> 2. The record evidence presented of record in this remanded proceeding, when viewed in totality, does not support a finding or conclusion that there is a causal connection between exposure to EMFs and adverse human health effects because of the continued inconclusiveness of the scientific research and studies.

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[4] We were particularly concerned with a study performed in Sweden, the Feychting and Ahlbom 1992 residential study, whose results were released on or about the time of our consideration of ALJ Smolen's August 19, 1992 decision. In the I.D. on remand, ALJ Smolen has made the following finding of fact:

> 34. Based on the evidence presented of record in this proceeding, the Swedish residential study does not appear to support a conclusive finding that EMF is a cause of childhood cancer (PECO Direct on Remand No. 4, p. 7).

3. Establishment of specific numerical edge of right-of-way standards as to the Woodbourne-Heaton transmission line is not supported by the evidence of record in this proceeding.

4. The Commission does not have jurisdiction to award attorney's fees and costs. Pa. P.U.C. v. Duquesne Light Co., 61 Pa. P.U.C. 485 (1986); Pa. P.U.C. v. National Fuel Gas Distribution Corp., 63 Pa. P.U.C. 68, 71 (1987).

5. The Commission has no jurisdiction to award condemnation damages. Commission's March 8, 1991 Order, p. 10, n.9 and p. 13, n. 11.

Based on the foregoing, ALJ Smolen Ordered as follows:

> 1. That by reason of the fact that the additional scientific research and studies presented of record at the hearing in the remanded proceeding do not support a finding or conclusion that there is a conclusive causal connection between exposure to EMFs and adverse human health effects because of the inconclusive nature of said research and studies, when viewed in totality, the Commission's February 9, 1990 Order approving the Letter of Notification filed by he Philadelphia Electric Company for the Woodbourne-Heaton Line is hereby, affirmed; provided however that should a conclusive causal connection between exposure to EMFs and adverse human health effects be scientifically established in the future, the Commission may require the Philadelphia Electric Company to make such changes, modifications and/or alterations to the Woodbourne-Heaton Line and/or its operation as the Commission may deem just and reasonable in the public interest; and further provided that the Woodbourne-Heaton Line must be operated and maintained in compliance with the National Electrical Safety Code and with all applicable statutes, regulations and codes for the protection of the public and the natural resources of the Commonwealth of Pennsylvania.

(1) Whether Petitioners have been adversely affected by reason of the potential for exposure to electric and magnetic fields (EMF) as a result of the reconductoring of the Woodbourne-Heaton line.

What has become clear from the record developed on remand, is that there is no conclusive evidence that EMF presents a known hazard to human health. The Law Bureau accepts the position that "[a] a review of the record reveals that the evidence, although getting stronger on the side of there being no adverse human health effects from EMF, still remains inconclusive." See I.D. at 66, referencing Law Bureau Main Brief, p. 43.

Likewise, the OCA states, "[s]tudies available since the close of the initial record do not resolve the uncertainty

concerning a connection between exposure to EMF and effects upon human health." Id., referencing OCA Main Brief, p. 10).

> PECO's position, summarized by the ALJ is that:
>
> ..."[r]ecent scientific developments have provided additional evidence that EMF does not cause adverse human health effects. The recently released Swedish residential study does not support a conclusion that EMF is a cause of cancer." Finally, PECO asserts that "[f]rom the scientific studies taken as a whole, it can be fairly stated that, after extensive scientific investigation, it has not been demonstrated that EMF causes adverse human health effects" (PECO Main Brief, p. 19).

The ALJ, on consideration of the evidence, also was persuaded that the scientific studies, testimony and evidence presented of record in the proceeding were inconclusive on the issue of whether exposure to EMFs causes adverse health effects. See I.D., pp. 67-68.

With regard to whether this Commission should adopt any right-of-way EMF standard for the Woodbourne-Heaton 230kv Line, the ALJ noted that the Law Bureau, the OCA, PECO and PP&L, were in accord that a health based right-of-way standard was not merited by reference to the record in this proceeding. Therefore, a numerical edge of right-of-way standard was not recommended.

> Therefore, upon consideration of the testimony and evidence presented at the hearing in this remanded proceeding and the arguments of the parties, the Administrative Law Judge concludes that the testimony and evidence presented of record in this case are not sufficient to support a finding or conclusion that a right-of-way width health-based standard should be developed or adopted for the Woodbourne-Heaton 230 kV line at this time.

(I.D., p. 79).

Notwithstanding the conclusion that the record does not support a causal relationship between exposure to EMF and adverse human health, the ALJ entertained the proposals of the parties concerning the future course of action which this Commission should undertake as a matter of policy.

The Commission's Law Bureau recommended that the Commission continue to monitor literature and new studies involving EMF by appointing a committee or contracting with an outside consultant/source to produce yearly updates on EMF research for release to the public. It was suggested that the electric utility industry may be willing to finance such activity. Law Bureau, however, favored the "prudent avoidance" concept, to be applied on a case by case basis. It did not support the establishment of an EMF standard for electric transmission lines, but did see the value in comparing EMF from a specific line with those from typical lines in the same voltage class so that individual efforts at exercising prudent avoidance can be evaluated in the context of a typical line.

Significantly, the Law Bureau proposed that the Commission establish a data registry of expected and actual electric and magnetic fields for all future lines, and the Commission could require utilities to include in future transmission line filings a statement of the expected EMF level from a line and each alternative of the line considered, under normal operational loading. The Law Bureau also suggested that within thirty days of a line's actual service date, the utility could be required to report the actual reading at standard distances of 0, 50, 150, and 250 feet from the right-of-way centerline. Finally, it is suggested that the Commission's Bureau of Conservation Economics and Energy Planning be given the responsibility for maintaining this data registry. It is emphasized that such a data registry would enable the Commission to evaluate compliance with prudent avoidance and to promulgate right-of-way

standards should a scientific causal relationship be established. I.D., pp. 83-84.

The OCA did not advocate that the Commission set a numerical edge of right-of-way standard in this proceeding. The OCA suggested that we open another docket to fully and thoroughly address the standards issue. Through its witness, Dr. Janes, the OCA preferred a similarity based and prudence concept which would, essentially, make one's exposure to transmission line fields as similar as possible to the exposures we receive from all the other fields in our day-to-day lives. The benefits of the approach suggested by the OCA witness, is acceptability; i.e. by making transmission line field exposure similar to exposure from other sources, we bring it in line with a socially acceptable risk; and equity, i.e., we do not ask residents along the transmission line to bear field risks different from those borne by all members of modern society.

To incorporate concepts of prudence into the regulatory process, the OCA advocates the following:

> (1) Research into the effects of electric and magnetic fields should be continued and the government and the industry should be aggressive in periodically informing the public as to the latest information.
>
> (2) Involve the public in the decision making process before critical decisions are made.
>
> (3) Companies considering power line projects should consider the cost and effects of mitigative measures before any construction is decided upon. Such measures should include avoiding heavily populated areas, avoiding parks, schools and other public facilities, widening right-of-ways, using higher ground clearances, designing power lines to reduce fields.

Concerning the possible adoption of a numerical standard for electric and magnetic fields, the OCA witness observed that any

such standard (1) should be interim because of the unsettled state of research, (2) should be line-specific only; and (3) would not be based on avoidance of health effects. I.D., pp. 79-83.

The Protestants herein proposed that PECO should purchase all properties any portion of which would be within levels above one milligauss more than 5% of the time. See I.D. referencing Protestants May 14, 1993 position statement.

PECO strenuously objected to the Protestant's request arguing: (1) it is based on the assumption that adverse human health effects from exposure to EMF has been demonstrated; (2) the proposal would cost over $160 million; (3) the proposal is not consistent with the concept of prudent avoidance, advocated by PECO herein. Prudent avoidance stresses small or modest costs to ameliorate exposure to EMF; and (4) PECO would not be able to exercise eminent domain due to the statutory restrictions on condemnation of residences and land within a 100 meter curtilage. Id.

Protestants also proposed that the Commission allow hearings on the need for the line as well as alternative locations. This is a position opposed by the Law Bureau which points out that evidence of need for the line was submitted by PECO and considered by this Commission in our February 3, 1990 Order.

Additionally, Protestants assert that the case should be reopened under Judge Palladino's 1991 Memorandum Opinion and Order. Again, this is a position opposed by the Law Bureau as unsupported through reference to Judge Palladino's Order.

Finally, the Protestants argue that the Commission should direct that PECO compensate them in the amount of $100,000 for the development and prosecution of their case to date, and to be drawn upon for future participation, including legal and counsel fees.

The Law Bureau, appropriately citing Feingold v. Bell Telephone Company of Pennsylvania, 477 Pa. 1, 383 A.2d 791 (1977); Elkin v. Bell Telephone Company of Pennsylvania, 49 Pa. 123, 420 A.2d 371 (1980); the Judicial Code, 42 Pa. C.S. §2503; Duquesne Light Company v. Pennsylvania Public Utility Commission, 117 Pa. .Commonwealth Ct. 28, 543 A.2d 196 (1988), appeal granted, 521 Pa. 632, 558 A.2d 533 (1989); and Pleasant Valley School District v. Department of Community Affairs, 127 Pa. Commonwealth Ct. 85, 560 A.2d 935 (1980), points out that this Commission is without authority to award damages, and to impose counsel fees and fees in the nature of costs, on participants before it.

PP&L, intervenor, supports authorization to energize the instant Woodbourne-Heaton line. PP&L, as it did in the previous proceedings, offers several salient policy alternatives that this Commission could pursue upon conclusion of this matter. They are: (1) institute either a policy statement proceeding or rulemaking proceeding to mandate that all electric utilities in the Commonwealth adopt a comprehensive EMF policy including such features as (i) support for EMF research, (ii) dissemination of EMF information; (iii) provision of EMF measurements; (iv) establishment of a magnetic field management plan; and (v) involvement of the public in the transmission line siting process. I.D. referencing PP&L's position, pp. 87-88.

In conclusion, PP&L's position is consistent with the principle of prudent avoidance, and it would advocate that no pending or filed projects be delayed before the final promulgation of such a policy statement, rulemaking or regulation. I.D., p. 89.

The Exceptions

By submittal dated September 6, 1993, the Commission received the Exceptions of Dorothy A. English to the I.D. In her Exceptions, Dorothy A. English raises three contentions, which are to a great degree, echoed by other individual protestants. First,

Ms. English asserts that this Commission did not hear all of the testimony. The basis of this claim is the assertion that Ms. English identified qualified epidemiologists who might serve as witnesses on the consumers' behalf in this matter and discovered that most eminent epidemiologists were conducting research funded by the Electric Power Research Institute (EPRI). It is asserted that no matter what these scientists might believe privately and individually, they [the qualified epidemiologists] felt strongly that testifying for consumers would jeopardize current or future funding. In particular, Ms. English states that there was only one epidemiologist, Dr. Milham, who would testify on their behalf. When speaking with Dr. Milham in May of this year, Ms. English relates that he informed her that he was already under oral contract to the Commission's Office of Trial Staff to represent consumers. They were not advised until the first day of hearing, May 27, 1993, that Dr. Milham was unable to appear as a witness sponsored by the OTS because of the OTS' difficulty in processing contracts.[5] Dr. Milham was then unable to appear on such short notice as an agent for Ms. English and the consumer interest she represents.

In consideration of the first exception of Ms. English, we are constrained to note that the same reasoning which applied to the OTS in our disposition of its request for reconsideration is applicable to her.[6] We do not discern that the experts presented herein have, in any way, overlooked any available literature, studies or works, generally available to the scientific community, for inclusion in the record here.[7] We, therefore, come to the conclusion that Ms. English, while not able to have this particular

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[5] See Order entered June 10, 1993 in this matter.

[6] Ms. English, as a Protestant, joined the OTS request for reconsideration.

[7] Ms. English states that Dr. Milham is adamant in his views on the effects of EMFs and advised her that he would testify that EMF emissions above one milligaus are harmful.

witnesses' view presented, has not established that the record is incomplete concerning the potential adverse health effects of EMF.

Second, Ms. English asserts that it is grossly unfair for any entity, the Commission or a utility, to impose financial loss on citizens through the imposition of a new high voltage line that has a measurable impact on property value.[8] On consideration of this Exception, we acknowledge that the perception of potential adverse health effects resulting from exposure to EMF is an apprehension that may be considered in the valuation of property. See In re Appeal of Giesler, ___ Pa. Commonwealth Ct. ___, 622 A.2d 408 (1993) citing United States v. Easement and Right-of-Way, 249 F. Supp. 747, 750 (W.D. Kentucky, 1965).

However, we agree with the conclusions of ALJ Smolen, that jurisdictional authority to award Protestants compensation in the nature of attorney's fees and/or costs does not lie in this matter.[9]

Also, by strong implication, Protestants appear to raise the question of whether a "taking" is in fact occurring as a result of the diminished property value occasioned by energization of the Woodbourne-Heaton Line. See, generally, Espy v. Butler Area Sewer Authority, 63 Pa. Commonwealth Ct. 95, 437 A.2d 1269 (1981); Harborcreek Twp. v. Ring, 48 Pa. Commonwealth Ct. 542, 410 A.2d 917 (1980); and Beckman v. Redevelopment Authority of the City of McKeesport, 30 Pa. Commonwealth Ct. 576, 74 A.2d 985 (1977) discussing the requisites for establishing a de facto taking. The

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[8] Ms. English goes on to detail the effects that she undertook to sell her home. She eventually sold her home at a significant reduced price from a 1990 appraisal.

[9] We, parenthetically, note our observation that the discussion of the question of money damages stated at page 16, note 4 of the Law Bureau's Replies to Exceptions is highly speculative and without legal support.

success of this position may well depend upon Protestant's satisfaction of the alleged harm resulting from the perception of adverse health effects of EMF.

More important to the question of the alleged diminution of property values, is that there is no cognizable basis for us to conclude that a taking has occurred, or that an eminent domain question is raised within our limited purview of such procedures.[10]

Third, Ms. English presents her concern that although evidence is not yet conclusive to connect EMF and cancer, the evidence does, in her view, establish a relationship between exposure to EMF and some biological processes involving cell division. In conclusion, she urges this Commission to extend hearings and allow "consumer side evidence" in the decision.

On consideration of the position of Ms. English, we are of the view that we have exhausted the representative scientific views concerning the possible adverse health effects of EMFs to the fullest extent of our administrative resources in the instant proceeding. Due to the current state of scientific information, we must refer to our comments in the March 26, 1993 Order where we observed that we "cannot go on forever in hope that the next piece of evidence or study will resolve the EMF question once and for all".

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[10] A public utility may condemn property using either the Eminent Domain Code, 1964 Sp. Sess., P.L. 84, as amended, 26 P.S. §§1-101 - 1-903, or the alternate provisions of the Business Corporation Law, 15 Pa. C.S. §1511(g)(2). See In Re Carnegie Gas Company, ____ Pa. Commonwealth Ct. ____, 629 A.2d 256 (1993). Also see Application of Wellsboro Electric Company, Docket No. A-11200 (Order entered February 23, 1993), wherein we discussed, generally, the standards considered and procedure followed in a application for a certificate of public convenience to exercise the power of eminent domain. Slip Op., pp. 99-14.

On July 30, 1993, we received the Exceptions of William J. and Barbara Harley. The Harleys also request the Commission to extend the hearings until "all the evidence" can be heard. Again, they reference the OTS' position and the attempt to secure Dr. Milham as an expert witness. This is a position previously considered in connection with the OTS request for reconsideration. They also attached a recent Bucks County Courier Times article[11], and suggested possible lawsuits. For reasons addressed in connection with our disposition of the Exceptions of Ms. English, we shall deny, in pertinent part, these Exceptions.

Protestant Edward F. Koerper, Jr. has lodged Exceptions primarily addressed to the fact that, in his view, PECO represented the line as being a "back-up" line at the outset. He states that this line has been used as a back-up line at varying times in 1992 and 1993, and can, apparently, be energized relatively quickly. Based on the foregoing, he argues that because the need for the line was not allowed to be challenged, that we direct that the line be used as a back-up line. This, in his opinion, would be the best possible scenario.

Mr. Koerper presents a request which has superficial appeal as a basis of compromise in this matter. However, we view the prospect of directing that this line be used as a back-up line inconsistent with the record. Therefore, we shall, on consideration, deny it.

Kenneth F. Glathorn and Barbara J. Glathorn filed Exceptions also raising the objection that they were treated unfairly by not having Dr. Milham testify in the proceedings on remand. Consequently, they argue for a reopening and/or extension

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[11] One article would analogize the situation presented herein with that pertaining to Agent Orange related issues of the Vietnam War era.

of hearings in this matter. For the reasons delineated, above, we shall deny these Exceptions.

John F. and Carol A. Dempsey also filed Exceptions raising the matter of the abortive attempt to present Dr. Milham as a witness in this matter. Additionally, the Dempseys except to the apparent lack of independence on the part of the Commission's Law Bureau, a participant in the proceedings. The Commission's Law Bureau, in a reply to the exceptions of Small, et al., and Middletown Township, there address the allegation that due process implications were involved as a result of the positions advocated by the Law Bureau in this proceeding. The Law Bureau defends its representation of the pubic interest in this proceeding by correctly noting that pursuant to Section 308(b) and 334(c) of the Public Utility Code, 66 Pa. C.S. §§308(b) and 334(c), the Prosecutory Staff is independent of the Commission and is treated as any other participant herein. Therefore, we shall deny this exception.

Additional Hearings Regarding Need

The OCA filed exceptions, most notably advocating that Protestants should have been afforded appropriate notice and an opportunity to be heard on all issues relevant to a determination as to the siting, construction, operation and maintenance of this transmission line. (OCA R.E., p. 2). The OCA alleges that no evidentiary record has been established on the threshold issue of the need for the transmission line, as the issue was excluded from consideration in the instant proceeding. The OCA requests that the Commission amend its Letter of Notification regulations and publish them in the Pennsylvania Bulletin for comment. Also, it would support a Commission effort to establish guidelines and approaches to the concerns raised by the uncertainty surrounding EMF.

Importantly, the OCA stresses the fact that the affirmation of our February 9, 1990 Order remains subject to

challenge since it was entered without prior notice to adjacent landowners. It goes on to note that the February 9, 1990 Order was based upon the assertions of the Company contained within a single fifteen-page filing. The OCA relies on the language of the Commonwealth Court Order of May 24, 1991, to suggest that due process rights were involved. Questions such as the potential balancing of issues involving the need for the line, possible alternative routes, potential health effects of EMFs, and land use concerns of the property owners resulting from EMF, and possible mitigative measures in the nature of the siting regulations were not meaningfully considered. (OCA Exc., pp. 4-5).

In reply to this exception, PECO notes that we have not, to date, acceded to the request for Protestants to be given hearings on the question of need. See PECO R.E., p. 9. Also, PECO cites cases wherein this Commission has approved applications for transmission lines based on information contained in the Letter of Notification. PECO would also find that the Commission implicitly conducted the requested balancing between adverse health effects and need in our March 26, 1993 Order. Id.

The Law Bureau, in a variation of PECO's approach, alleges that the lack of notice to adjacent property owners in PECO's original filing has been "cured" by the Commission's implementation of the remedy prescribed in the Commonwealth Court's order to remand. Because Protestants do not own property in the line's right-of-way, the only manner in which these Protestants have been adversely affected is through their alleged reasonable fear of EMF. On this basis, the Law Bureau opposes the position of the OCA concerning the necessity of having additional hearings concerning need.

On consideration of the Exceptions of the OCA, we would note that the matter of notice and opportunity to litigate the question of need poses the most troubling consideration for this

Commission. The issue evolves into the question of whether due process rights were, in the facts before us, implicated by our authorization for PECO to use of the Letter Notification procedures.[12]

Generally, procedural due process does not require notice and a hearing in every conceivable situation involving administrative action. Procedural safeguards are required where the administrative action is adjudicatory and involves substantial property rights. See Barasch v. Public Utility Commission, 119 Pa. Commonwealth Ct. 81, 546 A.2d 1296 (1988). In the present case, we are aware that PECO proceeded according to the Letter of Notification procedures of 52 Pa. Code §57.72(d). Previously, Protestants argued, inter alia, that they had a property interest in the property to be occupied by the Woodbourne-Heaton Line in the nature of a "fee simple title to a vertical portion of the right-of-way proposed to be used... and the air space intended to be occupied by the proposed facility for the dispersion of electro-magnetic waves, and ownership of air space adjacent to the proposed transmission lines, ...which was used for the growth of tall trees in their air space outside the vertical dimensions of the proposed right-of-way". See Order adopted March 6, 1991.

The troublesome question presented here, is whether or not the Protestants have shown that they possess a substantial property interest sufficient to invoke due process considerations, irrespective of our notice provisions. Whether the nature of the property interest asserted by the Protestants is substantial has been inextricably bound to the question of the adverse human health

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[12] Our concern is heightened by the fact that learned Judge Palladino expressed disfavor with the notice provisions of 52 Pa. Code §57.72(d) which provides for notice to persons owning property within the right of way. Judge Palladino accepted the notion that Protestants, as neighboring property owners, would be affected by the new use of the right-of-way, but reserved judgment as to whether the affect would be adverse.

effects of EMF. Because we cannot conclude, on the record before us, that Protestants' concerns regarding EMF are such that they have shown an adverse effect from the energization of the Woodbourne-Heaton line, we conclude that the notice provisions used here were not legally infirm.

Our conclusion here is further guided by the language of our regulation at 52 Pa. Code §57.72(d)(1)(i) which states:

> (1) A letter of notification may be filed with the Commission in lieu of the application process set forth in §§57.71-57.76 for the following:
>
> > (i) An HV line which is proposed to be located entirely on an existing transmission line right-of-way, so long as the size, character design or configuration of the proposed HV line does not substantially alter the right-of-way.
> >
> > * * *
> >
> > (v) An HV line which is to be reconductored or reconstructed so long as the size, character, design or configuration of the proposed line does not substantially alter the right-of-way.

Early on in the litigation of this matter, opponents of PECO's application stressed that the Letter Notification procedure was improperly used herein, as the disparity between the previous 138 kV use of the line and the immediate 230 kV usage resulted in a substantial alteration of the right-of-way.

On consideration of the record here, we first note that our regulations providing for the Letter Notification procedures expressly contemplate lines where the voltage is proposed to be increased above present levels. 52 Pa. Code §57(d)(1)(iv). Therefore, the increased voltage, in and of itself, does not substantially alter the right-of-way here involved.

One of the most significant factors in our approval of the Letter Notification procedure here is the fact that the right-of-way lies exclusively within an existing corridor used by Conrail. We would agree with the statement made in PECO's application that, as a general rule, existing railroad corridors offer a natural highway for transmission lines, and are the least intrusive method to insure the distribution of electricity in highly urbanized service territories such as that served by PECO. Were it not for this fact, our determination could very well be different concerning the use of the Letter Notification procedures.

Further, the size, character, design and configuration of the Woodbourne-Heaton Line, in our view, comport with the Letter Notification objectives.[13]

In conclusion, we shall deny the Exception of the OCA and Protestants concerning the question of additional proceedings on the question of need.

Limitation of the Findings and Conclusions

In its Exceptions, the OTS urges us to limit the findings and conclusions regarding EMF to the evidence adduced in this proceeding. See OTS Exc., pp. 5-10. The OTS raises a substantial concern that this proceeding not be the definitive pronouncement of this Commission as to the potential adverse human health effects of EMF. It notes other, ongoing litigation involving transmission line siting matters wherein EMF is an important concern. See Docket No. A-110300F051, et al. and Docket No. G-900240, et al. (Order entered March 16, 1992).

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[13] The Letter Notification procedures require that notice be provided to those who would otherwise have received notice under 52 Pa. Code §57.74.

On consideration of the OTS's exception, and in light of our limitation of intervention sought by other representatives of the electric utility industry, i.e. Duquesne Light Company, we shall grant the OTS exception. We, unequivocally, state that the determinations concerning EMF are limited to the facts of this proceeding, and we do not consider this proceeding to be the vehicle for any definitive ruling on the potential adverse health impact of EMF.

Policy Concerns Regarding EMF

The OTS also expresses its support for amendments which would address the EMF concern through providing advance notice and opportunity for neighboring landowners.

The OTS shares the view held by the OCA, that existing regulations are not adequate to address emerging concerns regarding EMF. Therefore, it would support the initiation of a proposed rulemaking to consider amendments to the Commission's siting regulations. See OTS R.E., p. 11.

PECO, in its replies, counsels against the requests for a separately docketed proceeding. PECO views this request as clearly outside the scope of the remand. It emphasizes that the Commission should decide transmission line siting cases on a case by case basis until such time as a generic policy is in place. PECO R.E., pp. 10-12.

PP&L, in its replies, notes that, notwithstanding its view that PECO should be permitted to energize the Woodbourne-Heaton Line, the Commission should take immediate, concrete steps to address the public concern about possible adverse health effects from EMF.

In connection therewith, PP&L details several recommendations as to certain suggested elements of a comprehensive

EMF policy. PP&L suggests several considerations as a reasonable starting point for our consideration, notwithstanding they are imbued with a bias toward the "prudent avoidance" approach. See March 26, 1993 Order.

On consideration of the positions of the parties here, we shall defer implementation of the various policy proposals suggested by the parties. Specifically, we feel it inappropriate, at this time, to convene a separate docket for the development of a comprehensive policy regarding EMF and transmission siting.

By letter dated August 12, 1993, we received the Exceptions of Small, et al., and Middletown Township in this matter.

We first note, as the Commission's Law Bureau has observed, that the Exceptions are not in compliance with our regulations at 52 Pa. Code §5.533(b). The exceptions, in addition to their deficiency under our regulations, are utterly without substantive merit and add little to the development of the issues before us.[14]

The only statement of marginal consequence concerns the following at pages 3-4:

> 4. The ALJ erred in ignoring the witnesses' ignorance of the role of magnetites, which have been demonstrated to be present in the human body, and to have a role in the mechanism by which electromagnetic fields affect the body, although the witnesses were confronted with recent studies showing these effects.

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[14] The Exceptions contain no reference to the I.D. wherein the propositions complained of are discussed and contain no citations in support of any of its broad, sweeping averments.

In reply, the Law Bureau notes that there is no sworn testimony in the record to support any statement concerning the certainty of magnetite as a mechanism for alleged adverse health effects of EMF. Law Bureau R.E., p. 12.

The Exceptions of Small, et al. are denied.

The Borough of Langhorne, through its solicitor, Catherine Porter, Esquire, filed exceptions[15] which, inter alia, allege that residents were prevented from presenting testimony on the dates scheduled for hearings. This allegation is lodged as a result of the alleged "failure to hold all publicized hearings". On review of the record, we have no indication that the Borough of Langhorne was prejudiced by the fact that hearings were concluded after the June 1, 1993 hearing date.[16]

The other exception argues against the ALJ's findings as to the lack of an adverse health effect concerning EMF. We shall deny this exception consistent with our discussion, above.

Conclusion

In our Order of March 26, 1993, we noted that this matter presented the following questions for our consideration, which we now answer in the order presented:

(1) Whether Petitioners have been adversely affected by reason of the potential for exposure to electric and magnetic field (EMF) as a result of the reconductoring of the Woodbourne-Heaton line? We answer this question in the negative.

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[15] We consider said exceptions although they were late-filed.

[16] The considerations here are similar to those discussed at page 22 of the Law Bureau's replies to exceptions concerning the identical complaint of the Township of Lower Southampton. We concur in the result that no party was prejudiced by the failure to hold hearings on June 2, 3, 4 and 7.

(2) Whether Petitioners will be adversely affected by adverse land-use impacts? We answer this question consistent with our acknowledgement that the perception of potential adverse health effects of EMF is an apprehension that may be considered in the valuation of property. In re Appeal of Giesler, __ Pa. Commonwealth Ct. ___, 622 A.2d 408 (1993) citing United States v. Easement and Right-of-Way, 249 F. Supp. 747, 750 (W.D. Kentucky, 1965).

(3) Whether the letter-notification procedure was properly used in this case? We answer this question in the affirmative.

(4) Whether the Commission regulations are constitutionally or legally infirm? We answer this question in the negative; THEREFORE,

IT IS ORDERED:

1. That the Initial Decision of Administrative Law Judge Herbert Smolen issued July 23, 1993, be, and is, hereby, adopted consistent with this Opinion and Order.

2. That the Exceptions to the Initial Decision are granted and denied consistent with the foregoing Opinion and Order.

3. That by reason of the fact that the additional scientific research and studies presented of record at the hearing in the remanded proceedings do not support a finding or conclusion that there is a conclusive causal connection between exposure to EMFs and adverse human health effects because of the inconclusive nature of said research and studies, when viewed in totality, the Commission's February 9, 1990 Order approving the Letter of Notification filed by the Philadelphia Electric Company for the Woodbourne-Heaton Line be and is, hereby, affirmed; And provided that the Woodbourne-Heaton Line must be operated and maintained in compliance with the National Electrical Safety Code and with all applicable statutes, regulations and codes for the protection of the public and the natural resources of the Commonwealth of Pennsylvania.

4. That this proceeding is, hereby, marked closed.

BY THE COMMISSION

John G. Alford,
Secretary

(SEAL)

ORDER ADOPTED: November 10, 1993

ORDER ENTERED: NOV 12 1993

EXHIBIT E

Statement No. 2R and PECO Exhibit Nos. GP-1 through GP-7 for identification.)

BY MR. SMITH:

Q. Do you have in front of you a document from this proceeding marked PECO Energy Company Statement Number 2R Rebuttal Testimony of Glenn Pritchard?

A. Yes.

Q. And that is dated May 18th, 2016?

A. I don't see the date on mine, but I believe I have -- yes.

Q. And that is compromised of 17 pages of text plus 7 exhibits marked as GP-1 through GP-7?

A. That is correct.

Q. Was this testimony and the associated exhibits prepared by you or under your direction and supervision?

A. Yes, it was.

Q. Do you have any corrections of typographical changes to make to this testimony?

A. Yes, I do.

Q. Would you turn to page 6 of the testimony and tell us what change you need to make?

A. Yes. Specifically related to the duration of the AMR --

Q. Is it the duration of periodicity of the ZigBee?
A. I'm sorry. The periodicity of the ZigBee.
Q. And this is on line 8 of page 6?
A. Yes.
Q. The sentence currently reads, the ZigBee radio will transmit every five minutes until such time as it requires communications with a device within the home.

Does that need to be corrected?

A. Yes, it does. This was a typo in the development. The ZigBee radio transmits once every 30 seconds in its unprovisioned state.
Q. When you provided discovery answers to Ms. Povacz on this issue, did you provide the correct 30 second periodicity?
A. Yes.
Q. When you provided data to Dr. Davis to do his calculations, did you provide him with the 30 second periodicity?
A. Yes, I did.
Q. And then, again, maybe just to be clear, so this was just a typographical error?
A. Yes, it was.
Q. With that correction, if I asked you today the