

2 August 2016

Edward S. Finley, Jr., Chair
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4300

Subject: Docket Number E-7 Sub 1115 - Smart Meter Opt-Out Fees

Dear Chairman Finley:

We, the undersigned, are a group of scientists and health professionals who together have coauthored many peer-reviewed studies on the health effects of radiofrequency radiation (RFR). We are aware that the North Carolina Utilities Commission (NCUC) is considering a proposed smart meter opt-out fee from Duke Energy, which was submitted on July 29, 2016. Smart meters, along with other wireless devices, have created significant public health problems caused by the RFR they produce, and awareness and reported problems continue to grow. With Duke Energy being America's largest utility provider and, consequently, having the largest potential smart meter implementation reach, it is imperative that the NCUC be fully aware of the harm that RFR can cause and allow utility customers to opt out of smart meter installation with no penalty.

The majority of the scientific literature related to RFR stems from cell phone studies. There is strong evidence that people who use a cell phone held directly to their ear for more than ten years are at significantly increased risk of developing gliomas of the brain and acoustic neuromas of the auditory nerve. There is also evidence that the risk of developing these cancers is greater in younger than older people. The May 2016 report from the US National Toxicology Program showing that rats exposed to cell phone radiation for nine hours per day over their life-span develop gliomas of the brain and Schwannoma of the heart (the same kind of cancer as acoustic neuroma) adds proof to the conclusions from the human health studies that radiofrequency radiation increases risk of cancer.

Smart meters and cell phones occupy similar frequency bands of the electromagnetic spectrum, meaning that cell phone research can apply to smart meter RFR. Smart meter RFR consists of frequent, very intense but very brief pulses throughout the day. Because smart meter exposure over a 24 hour period can be very prolonged (pulses can average 9,600 times a day), and because there is building evidence that the sharp, high intensity pulses are particularly harmful, the cell phone study findings are applicable when discussing adverse health impacts from smart meters.

While the strongest evidence for hazards coming from RFR is for cancer, there is a growing body of evidence that some people develop a condition called electrohypersensitivity (EHS). These individuals respond to being in the presence of RFR with a variety of symptoms, including headache, fatigue, memory loss, ringing in the ears, "brain fog" and burning, tingling and itchy skin. Some reports indicate that up to three percent of the population may develop these symptoms, and that exposure to smart meters is a trigger for development of EHS.

In short:

- Smart meters operate with much more frequent pulses than do cell phones, increasing the potential for adverse health impacts.
- Smart meter pulses can average 9,600 times a day, and up to 190,000 signals a day. Cell phones only pulse when they are on.
- Cell phone RFR is concentrated, affecting the head or the area where the phone stored, whereas smart meter RFR affects the entire body.

- An individual can choose whether or not to use a cell phone and for what period of time. When smart meters are placed on a home the occupants have no option but to be continuously exposed to RFR.

We are aware that the North Carolina Department of Health and Human Services (DHHS) drafted an August 2015 report, "Health Impacts of Advanced Metering Systems (Smart Meters)," and we strongly disagree with the DHHS's Executive Summary conclusion that "There is insufficient evidence to link RF exposures to adverse health outcomes." The research findings by independent scientists point to a clearer relationship between RFR and health effects than industry-funded studies.

We read with great concern Laura Combs' and Andrew McAfee's May 5, 2016, review of public records related to the August 24, 2015, DHHS smart meter health impact report. As researchers highly involved in educating others about the many serious adverse health impacts of RFR, we strenuously object to the poor source material chosen by DHHS staff. With a leading DHHS staff member admitting that he is not qualified to review the literature, and the fact that he relied on industry representatives for assistance, the DHHS conclusion is not surprising. Further, the unscientific, medically unsupported characterization by another DHHS staff member that people who experience electromagnetic hypersensitivity are mentally ill (this staff member also stated that he is advocating for Duke Energy in relation to smart meter opt-out) reveals a public health agency that is not only incapable of producing an adequate report, but one that is not working to ensure fair treatment of and protection of the public.

The adverse health impacts of low intensity RFR are real, significant and for some people debilitating. We want to stress three fundamentals as your agency proceeds to consider a smart meter opt-out:

- The Federal Communication Commission's safety standards do not apply to low intensity RFR.
- There is no safe level of exposure established for RFR.
- People around the world are suffering from low intensity RFR exposure, being at increased risk of developing both cancer and EHS.

Citizens rely on their government agencies for protection from harm. Accordingly, we urge the NCUC to reject any fees or tariffs associated with smart meter opt-out and allow citizens to opt out without penalty.

Thank you for your attention and consideration. What you do in this instance affects the lives of many in North Carolina and beyond.

Yours sincerely,



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