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By US Mail

Arizona Corporation Commission
Docket Control
1200 W. Washington St.
Phoenix, Arizona 85007

Docket # E-00000C-11-0328 – Smart Meters
Re: Request for disclosure of PLC system's duty cycles, frequencies, etc.

Dear Commissioners:

The vendors of various smart meters have not been forthcoming with how much or how often their meters actually transmit. In California, Administrative Law Judge Amy Yip-Kikugawa finally ordered the major investor-owned utilities to disclose their respective information. Those California Utilities use wireless meters and the results were very informative in that state.

However, we are still missing detailed information about the PLC transmission technologies which are being deployed in Arizona. Nevertheless, statements and disclosures have been made by Arizona Utilities that may not convey the full magnitude of PLC transmissions. Power line carrier (PLC) systems are not wireless, they transmit by sending signals along the electrical lines instead. They do that by injecting current and voltage disturbances on the line, both intentionally and as a by-product. This modifies the electrical and magnetic fields around the distribution lines as well as household wiring. The wires carrying PLC signals are defacto unintentional "antennas". A fact that has been clearly demonstrated by the British Broadcasting Corporation (BBC), which resulted in restrictions being put on PLC systems in Europe and Japan. Unlike wireless transmitters, the PLC signals do not diminish rapidly by distance. Some PLC systems are designed to reach many miles. This means that PLC transmitters outside a home can reach the wiring inside the home. Also, the lines along the street and those connecting a home with the distribution system may affect the environment inside the home. The signals

from an in-home HAN PLC network can reach nearby neighbors. The signals from the controller for a PLC two-way smart meter system can reach into all homes in the area it serves, even several miles away. The voltage disturbances created by PLC smart meters may reach into other homes in the area, even though the current signal itself may not.

These disturbances to the electrical and magnetic fields are detrimental to people with electrical hypersensitivity (EHS). Opting out by placing a non-communicating electromechanical (Analog) meter on a house will not be sufficient mitigation in most cases. As these technologies are being deployed in Arizona, and exposure to them will be mandatory, it is reasonable that essential information be made available to the public.

Therefore, we **hereby request** that the Arizona Corporation Commission direct the Arizona Utilities which are using, or are planning to use, any form of PLC systems to answer the following questions:

1. What is the name and vendor of each PLC system(s) used and/or planned?
2. Which frequencies does the PLC system add to the power lines?
 - A. Transmitted by customer meter
 - B. Transmitted by utility equipment
 - C. Transmitted by any other device that communicates with this PLC system (please specify category)
3. What are the highest frequencies which will appear on the distribution lines and/or in-house wiring as a direct or indirect result of this PLC system, including harmonics?
4. How far can these PLC signals travel without a repeater?
5. Can these PLC signals be blocked or otherwise prevented from entering a household?

6. Please specify the transmission time for every kind of PLC device (i.e. AMR/AMI meter, in-house display, two-way controller, etc.)
 - A. The number (count) of transmissions per 24 hours (average and maximum)
 - B. The amount of time (minutes or hours) the device transmits per 24 hours (average and maximum)
 - C. Specify the above information for each broad message category, i.e. billing information, network management, download, etc.
7. Please specify the total combined network traffic for both in-house wiring and distribution lines. Include all PLC devices, such as meters, two-way controller, in-house display, etc. Please specify average and maximum traffic load, both by number of transmissions and summed transmission time over a 24 hour period.
8. What are the circumstances under which the maximum traffic load is reached and how often may that happen?

We do not expect the Arizona Utilities to be able to answer all these technical questions. Instead, they could ask their vendors to do so. Even PG&E in California asked their vendor to supply such answers. We do not believe that disclosing this information will reveal technical information that could be used by competitors to duplicate the systems. The only competitive disadvantage we see from such disclosure is that other vendors may promote or design more benign systems, which would be in the public interest.

Please contact us with any questions or issues you may have concerning this request.

Submitted on behalf of:

Safer Utilities Network
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