

From: [William Bathgate](#)
To: [MPSCEDOCKETS](#)
Subject: Case No. U-18120
Date: Monday, October 10, 2016 3:09:25 PM

This is a revision to my prior post.
I found a few typos that I should have corrected, this note says the same thing as my previous post.

Sincerely,
William S. Bathgate
256-570-5434

----- Forwarded Message -----

From: William Bathgate <bill.bathgate@yahoo.com>
To: William Bathgate <bill.bathgate@yahoo.com>
Sent: Monday, October 10, 2016 1:04 PM
Subject: Fw: Case No. U-18120

Proposed Rule 460.137

Date 10/10/2016

Case No. U-18120
Proposed Rule 460.137 -- 37(1)(a) & 37(1)(i)
Reference Item:

A utility may shut off or deny service to a customer “without notice, if a condition on the customer's premises is determined by the utility or a governmental agency to be hazardous.”

I hold an electrical engineering and mechanical engineering degree and previously was employed through late 2015 for 8 years for Emerson Electric. While at Emerson Electric I was the Senior Program Manager for Power Distribution Systems in charge of an RF and IP based digitally controlled high power AC power switching system product line in use in over 100 countries and was directly responsible for product certifications such as UL, CE and many other countries electrical certification bodies. I am very familiar with the electrical and electronic design of the AMI meters in use because I was responsible for very similar products with over 1 Million units installed in the field myself.

I have just reviewed the transcripts of the hearing held in Lansing on this subject and came to realize there were many comments regarding the issues

identified from the effects of both the RF emitting AMI meter and the non RF emitting AMI Opt-Out Meter. I have personally tested the RF emissions from the AMI meter and measured that the meter does not send data just a few times a day as the utilities publish. It actually sends an RF pulse about every 4-5 seconds constantly and a longer duration RF emission after midnight running about 3-5 minutes. There is no need for the AMI meter to send a pulse every 4-5 seconds all day just to synchronize the time stamps inside the meter, the meter only needs to send data once a day for 3-5 minutes. All this pulsing the AMI meter is doing is a complete waste of energy and because it is a short but frequently pulsing signal that is not needed to measure power consumption, it is creating needless health effects and is impacting consumers. Some to the point of near death experiences. The Mesh Network design is saturating the environment with RF transmissions only for the purpose of the network synchronization not the consumption measurement of power. I could not think of a worse network design for a power measurement device.

After reading the transcripts of the hearing I noticed quite a few comments from people affected to a terrible effect the RF based AMI meter, and interestingly also the RF turned off Opt-Out Meter. It begs the question why do people also seem affected by the Opt-Out meter? Well I went out and purchased an ITRON Open Way meter identical to the meter being deployed by DTE. I took the unit apart to examine the circuit design of the three boards inside the meter. Generally the boards seem well made with two important elements missing.

The switching circuit is lacking what is called a "Common Mode" filter and the circuit boards are lacking a direct local connection to a Zero voltage potential ground at the meter to sink the current and voltage oscillations of the circuit boards.

Ground References:

Depending on the soil conditions and a solid or not solid low impedance connection surface the ground plane reference of the circuit boards may be floating over a Zero voltage potential condition. This will create Electro-Magnetic Interference (EMI). The use of the neutral wire as a ground reference as in use today is a poor practice with the AMI meter and leads to a floating ground potential that could cause strong voltage and current ground potentials varying from zero to a worse case 240 volts (due to a direct short). If there was

a direct short of the neutral wire because of a voltage surge on the input power from a lighting strike at the pole or line issue I would fully expect the circuit boards to likely explode or melt.

Common Mode EMI:

A "Common Mode" filter attenuates high frequency currents. This filter is not present in the current circuit design and if it was there the switching circuit which converts 240 Volts AC to 5-10 volts DC would be prevented from sending EMI oscillations back onto the 240 Volt AC wires entering the home.

I am very familiar with the design elements of a switched mode power supply because I had to include "Common Mode" filters into the products I was responsible for while at Emerson Electric to minimize the Electro-Magnetic Interference (EMI) coming from the switching integrated circuit back onto the feeding AC circuit and the output AC circuit. A clean 50 or 60 Hz is needed, the input AC and AC output to be void of any oscillation introduced by the switching circuit. I would not have been able to sell the same ITRON switched mode circuit design with the products I managed. I would have been fired for such a condition.

If DTE (or any Utility) was to demand of ITRON, their supplier, to provide a "Common Mode" filtering circuit and tested this design for elimination of EMI and of stray capacitance present in the current design, I believe the troubles with people becoming ill from the Opt-Out AMI meter could be significantly mitigated.

Summary:

The MPSC has been asked to grant the Utilities the ability to turn off power to people and businesses without notice for "Dangerous or Hazardous" conditions. Based on my professional examination of the metering technology deployed with AMI meters, the meters themselves are "Dangerous or Hazardous" due to their EMI and RF emissions. There has been a disregard for the health affects of these AMI meters on the general population by the utilities. So by there own lack of definition of "Dangerous or Hazardous" all AMI meters deployed at present will be subject to shut of service due to "Dangerous or Hazardous" conditions. This may be silly logic on my part but the logic of the proposed rule is equally silly logic and the rule change request

should be denied due to lack of definition of what is "Dangerous or Hazardous".

In addition I think the MPSC should have a more active role in the technology decisions made by the utilities themselves. In the case of AMI meters the MPSC overlooked this responsibility to assure the utility monopolies are providing a safe metering technology to the consumer and businesses. Based on the affects on the population with people reporting near death experiences with the AMI meters, this decision should be revisited by the MPSC in unison with the various groups that have reported serious issues with this technology. Otherwise the affected population at some time in the future will hold the MPSC accountable in a class action law suit which would have to be defended by the State of Michigan and for legal expenses using scarce tax dollars. In the Flint Water Crisis the State of Michigan failed to provide proper governance and oversight of the decisions in Flint costing the State of Michigan many millions of dollars and it far from settled yet.

Does the MPSC not see the similarities of Flint here with the AMI technology that has serious issues that can be simply solved? It is obvious the utilities want this rule provision to force every person in the state even if they do not say so themselves, to have an AMI meter. Forcing 100% compliance to AMI metering is not the solution, this will only lead to big troubles for the MPSC as a whole and liability to individual MPSC members. Based on the testimony already made regarding AMI meter issues the MPSC needs to step up and fulfill its charter to the residents of Michigan to provide SAFE and reliable power and not leave this to the discretion of the utilities.

If the MPSC approves these rule changes, then the MPSC should disband because your role in governance is of no value, merit or benefit to the citizens of the State of Michigan. You would have abrogated your governance role to the utilities as they see fit.

Sincerely,
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