

# City of Independence



HEALTH DEPARTMENT • ADMINISTRATION DIVISION  
515 SOUTH LIBERTY STREET • P.O. BOX 1019 • INDEPENDENCE, MISSOURI 64051-0519  
[www.independencemo.org](http://www.independencemo.org) • (816) 325-7986

January 8, 2018

Mayor and City Council  
P.O. Box 1019  
Independence, MO 64051-0519

Dear Mayor and City Council:

This letter is in response to a memo dated November 27, 2017, from Mark Randall, Assistant City Manager, to Andrew Warlen, Health Director, requesting the Independence Advisory Board of Health (BOH) research potential health impacts associated with Advanced Metering Infrastructure (first attachment). The BOH, with assistance from Health Department staff, met and compiled the following answers to your questions related to Advanced Metering Infrastructure (AMI).

1. Do advanced meters pose a health threat because they communicate using wireless signals?

In brief, no, advanced meters and the fact that they communicate using wireless signals do not pose a health threat.

- a. Have qualified researchers confirmed that there is an increased health risk?

No, researchers have not confirmed that there is an increased health risk. According to scientific reviews by the World Health Organization (WHO), there is no convincing evidence supporting short- or long-term adverse health effects caused by exposure to the low-level radio frequency energy of wireless signals from transmitters. It should be noted that additional studies are recommended by WHO.

- b. Is the risk measurable and significant?

Risk is measured by Specific Absorption Rate (SAR), which measures the rate the radio frequency energy is absorbed by the body. All wireless devices sold and operated in the United States are tested to ensure that they

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do not exceed the maximum allowable SAR when the device is operating at its highest possible power level. Thus, the SAR risk from advanced meters is within acceptable Federal Communication Commission (FCC) standards. The International Committee on Electromagnetic Safety (IEEE) and the National Council on Radiation Protection and Measurements (NCRP) developed the FCC SAR standards.

- c. How does it compare in scope to other wireless signals prevalent in the world today?

Acceptable standards set by FCC for radio frequencies limits and exposure amounts depend on the frequency of continuous whole body exposure and the source. AMI has a lower level frequency ( $0.0018 \text{ W/m}^2$ ) than regularly used household equipment such as microwaves ( $0.0043 \text{ W/m}^2$ ) or Wi-Fi base station ( $0.0021 \text{ W/m}^2$ ). The AMI frequency range is not considered harmful to an individual's health (FCC). The frequency and power of the radio frequency waves given off by a smart meter are similar to that of a typical cell phone or cordless phone, and is well within the safe range (American Cancer Society). Advanced meters transmit data up to six times a day, amounting to less than one second of transmission a day. This equates to one year of 15-minutes-per-day of cell phone use (FCC).

2. Is there an increased risk to people who live near advanced metering telecommunications transmission facilities?

In brief, no, there is not an increased risk to people who live near advanced metering telecommunications transmission facilities.

- a. Have qualified researchers confirmed that there is an increased health risk?

No, qualified researchers have not confirmed that there is an increased health risk. Radiation is characterized as either ionizing or non-ionizing. Ionizing radiation, under certain circumstances, leads to cellular and/or DNA damage with prolonged exposure. Examples of ionizing radiation include ultraviolet light and x-rays. Radiation associated with transmission facilities is non-ionizing and is generally considered harmless due to its lack of potency (National Institute of Environmental Health Sciences, National Cancer Institute). The frequencies of energy emitted by broadcasting transmitters, power lines or electrical wiring, mobile phones, or other wireless communication devices are too weak to break a cell's chemical bonds (WHO). This type of exposure is not recognized as increasing health risks (International Agency for Research on Cancer).

- b. Is the risk measurable and significant?

Researchers have evaluated the radio frequency radiation from wireless telecommunication devices and equipment, including cell phones, smart meters, and portable wireless devices to assess its effects on DNA from exposure. The epidemiologic studies do not show an increased risk of adverse health effects (National Cancer Institute).



c. How does it compare in scope to other wireless signals prevalent in the world today?

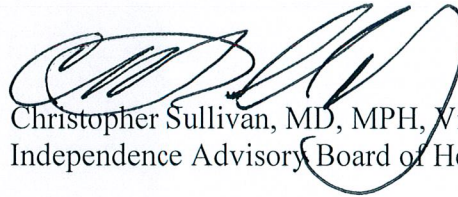
The FCC currently determines the accepted standard of safety against known thermally induced health impacts of smart meters and other electronic devices in the same range of radio frequency emissions. Exposure levels from smart meters are well below the thresholds for negative health effects (California Council on Science and Technology).

To further supplement this information, Dr. Christopher Sullivan, Vice Chair of the Independence Advisory Board of Health, is happy to attend any City Council or Public Utility Advisory Board (PUAB) meeting to discuss the above responses or answer any additional questions. Additionally, a list of references (second attachment) that were used in compiling the above answers is attached.

Sincerely,



Ralph Ruckman, DDS, Chair  
Independence Advisory Board of Health



Christopher Sullivan, MD, MPH, Vice Chair  
Independence Advisory Board of Health

Attachments

# City of Independence

## MEMORANDUM

City Manager's Office

DATE: November 27, 2017

TO: Andrew Warlen, Public Health Director

FROM: Mark Randall, Assistant City Manager

SUBJECT: **Analysis of Potential Health Impacts Associated With Advanced Metering Infrastructure (AMI)**



The City Manager, on behalf of the Mayor and City Council, has directed me to request an analysis by the Independence Board of Health and the Health Department of potential health impacts associated with Advanced Metering Infrastructure (AMI). It is further requested that the findings of this review be compiled in a report to the Mayor and City Council.

While the Mayor and Council in no way wish to limit the range of this analysis, it would be helpful if the final report addressed the following:

1. Do advanced meters pose a health threat because they communicate using wireless signals?
  - a. Have qualified researchers confirmed that there is an increased health risk?
  - b. Is the risk measurable and significant?
  - c. How does it compare in scope to other wireless signals prevalent in the world today?
2. Is there an increased risk to people who live near advanced metering telecommunications transmission facilities?
  - a. Have qualified researchers confirmed that there is an increased health risk?
  - b. Is the risk measurable and significant?
  - c. How does it compare in scope to other wireless signals prevalent in the world today?

In recent days, a lot of information about AMI, both pro and con, has come to the City Manager's Office and Independence Power & Light. We will endeavor to provide you with copies of this information for your review. In addition, please feel free to contact Andy Boatright, Acting Director of Independence Power & Light, (816) 325-7494, or Mark Rothmier, Utility Project Development Manager, (816) 325-7446, for assistance in tracking down any information which would be helpful to you in evaluating the potential health impacts of AMI.

It would be most appreciated if the Board of Health could include this item on its December 7, 2017 meeting agenda. I will plan to attend that meeting, along with Mark Rothmier, to answer any questions the Board may have about this request. If possible, I'd also like to ask the Board



## References

Attachment 2

- American Cancer Society. (2014). Smart meters. Available at <https://www.cancer.org/cancer/cancer-causes/radiation-exposure/smart-meters.html>
- California Council on Science and technology. (2011). Health impacts of radio frequency exposure from smart meters. Available at <https://ccst.us/publications/2011/2011smart-final.pdf>
- Federal Communication Commission. (2015). RF Safety FAQ. Available at <https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety#Q5>
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- National Cancer Institute. (2016). Electromagnetic fields and cancer. Available at <https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/electromagnetic-fields-fact-sheet>
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- World Health Organization. (2017). Electronic fields (EMF). Available at <http://www.who.int/peh-emf/en/>
- World Health Organization: International Agency for Research on Cancer. (2016). European code against cancer. Available at <https://cancer-code-europe.iarc.fr/index.php/en/ecac-12-ways/radiation-recommendation/100-any-cancer-risk-from-non-ionizing-radiation>