



News You Can Use provides answers to questions about our company, our industry and the issues we face. The purpose of this specific *News You Can Use* is to increase your understanding of health concerns some members of the public have raised about the negative health effects associated with radio frequency waves that smart meters produce.

July 2013

Topic: Smart meters and health: What you should know about radio frequency emissions

Last night, local NBC affiliate KFOR-TV aired a story regarding a customer's health concerns about smart meters. Smart meter technology has raised some concerns from the public about negative health effects associated with the radio frequency (RF) waves that smart meters produce. The following information will help you talk about this issue if you get questions from others.

Background

Last year, OG&E completed the installation of smart meters throughout its service territory. Smart meters operate by transmitting and receiving information wirelessly. This technology provides many benefits to the company such as the ability to read meters remotely, connect and disconnect meters and to offer customers dynamic pricing programs, such as SmartHours.

Questions and Answers

Q: What are radio frequency waves?

A: Radio frequency (RF) waves are a form of electromagnetic energy that move through space at the speed of light. They are a low-energy source that are able to transmit information over long distances and can be man-made or occur naturally. Radio frequency may also be referred to as electromagnetic fields (EMF). Radio frequency is one form of electromagnetic energy.

Q: What types of devices use radio frequency?

A: RF waves are commonly found in telecommunications devices, such as cellular phones, wireless Internet routers and many other wireless electronics. There also are common electronic devices that use radio frequency such as baby monitors, microwave ovens and automatic garage door openers. Smart meters use radio frequency to communicate wirelessly with OG&E's network and programmable communicating thermostats.

Q: Is RF exposure harmful to human health?

A: RF can be harmful if someone is exposed to it at very high levels, such as radiation emitted from X-rays or radioactive material. Some people have claimed to have electromagnetic hypersensitivity, or EHS disorder, and have reported symptoms such as headache, fatigue, stress, sleep disturbances, prickling skin or rashes,

pain and ache in muscles and many other health problems. Studies addressing EHS disorder have been inconclusive, and it is not recognized as a medical condition by the medical or scientific communities.

The Federal Communications Commission (FCC) has adopted limits for exposure to RF energy and requires that all radio-communicating devices, such as smart meters, be tested to ensure they meet FCC standards. ***A third-party study conducted in October 2012 tested OG&E's smart meter technology within several scenarios, The study concluded that emissions from OG&E Smart Grid AMI infrastructure, even given worst case scenarios and abnormally small detection distances, do not come anywhere close to approaching the FCC's Limit for Maximum Exposure.***

Q. Do smart meters emit enough RF to cause health concerns?

A. Smart meters transmit RF energy at very low energy levels and only for short periods during the day. To address health concerns, members should be aware of the following:

- Several studies by respected third parties, such as the World Health Organization (WHO), Electric Power Research Institute (EPRI) and the California Council on Science and Technology (CCST) indicate that the very small amount of radio frequency energy produced by smart meters is not harmful to human health.
- Smart meters transmit RF energy only for short periods each day. OG&E's smart meters transmit approximately one minute per day on average. By comparison, cell phones transmit constantly and at very close range.
- RF emissions weaken significantly as the distance between a person and the device increases. The casing of a smart meter, as well as wall construction materials, also decreases the level of RF energy. Continuously standing in front of a smart meter would result in the highest exposure, and even that exposure would be 70 times less than FCC limits.

Q: How do RF emissions from smart meters compare to other devices?

A: Smart meters transmit for only a fraction of the day for short durations, and actual RF emission levels are actually less than commonly used devices such as cell phones or baby monitors. **Someone would have to be exposed to the RF from a smart meter for 375 years to get a dose equivalent to that of one year of 15-minutes-per-day cell phone use.**

Q: Has OG&E had any customer complaints regarding RF exposure?

A: OG&E has had very few and infrequent calls from customers concerned about RF emissions from smart meters, and some have complained that they were experiencing negative health effects from smart meters.

Q: What is the company doing to address customer concerns?

A: Most often, customer concerns are addressed by the Customer Service Representative answering the call.

Q. Can concerned customers have their smart meters replaced with the old, analog meters?

A: Just as many other industries, such as the television industry, have modernized their infrastructure to accommodate modern technology, OG&E has done the same with the digital technology offered by smart meters. Smart meters now are a part of our infrastructure and replacing meters for a very few customers would be costly both to the company and our customers.

Talking Points

- OG&E's smart meters present an extremely low-level of RF exposure when compared to the regulatory limits established by the Federal Communications Commission (FCC) for safe operations.
- Smart meters transmit for only a fraction of the day for short durations, and actual RF emissions are actually less than commonly used devices such as cell phones or baby monitors.
- Compared to other household electronic devices smart meters use some of the lowest strength radio frequency signals to transmit information. In fact, someone would have to be exposed to the RF from a

smart meter for 375 years to get a dose equivalent to that of one year of 15-minutes-per-day cell phone use.

- Studies by respected third parties, such as the World Health Organization (WHO), the Electric Power Research Institute (EPRI) and the California Council on Science and Technology (CCST), indicate that the RF energy produced by smart meters is not harmful to human health.
- Offering the few customers who requested it the ability to opt out of smart meters would be costly to OG&E and its customers due to the difficulty and expense of serving customers on two different platforms (analog and digital).
- Smart meters and smart technology allow OG&E to offer innovative programs to our customers, such as SmartHours and myOGEpower. Last summer, SmartHours customers saved an average of \$200.
- Smart meters provide operational benefits such as the ability to remotely connect and disconnect service. Smart technology has enabled the company to avoid more than 600,000 truck rolls. Eventually the technology will help the company improve outage management.
- The SmartHours program, enabled by smart technology, provides customers incentives for shifting energy use to off-peak times. This demand reduction helps OG&E meet its goal to avoid building additional fossil-fueled generation until at least 2020.