OWEN Electric

A Touchstone Energy® Cooperative

ADVANCED METER/AMI FAQ

Beginning in 2006, Owen Electric started implementing an AMI system (Advanced Metering Infrastructure) throughout its service territory. The Advanced Meters that were installed operated on a PLC (Power Line Carrier) 12.5kHz frequency. In 2014, Owen started implementing our vendor's RF (Radio Frequency) 902-928 MHz frequency system and Advanced Meters.

What are "Advanced Meters"?

"Advanced Meters" are solid state electrical meters that utilities install to collect and transmit metering information back to its office. These replace the analog type meters which were limited to just displaying the total usage and required the utility to visit each meter monthly to manually read the meter.

Advanced Metering Infrastructure (AMI) … What is it?

The name sounds complicated, but Owen Electric's AMI system produces a variety of benefits, including better customer service, improved reliability and greater operational efficiency.

How does my Advanced Meter work?

With Advanced Meters, Owen can read the meter remotely from our central office. Information from the meter is transmitted back to the co-op. Transmitting this information electronically means that a meter reader no longer visits your home to manually read the meter on a regular basis.

What data is collected by the meter?

The meter records the following information:

- Total kWh usage. This may also be divided into different groups if the member is on one of OEC's Time of Day rates.
- kW values for each interval (typically 1 hour).
- Minimum and maximum voltage levels.
- Blink counts.
- Certain outage events including start time and duration.

How often does my meter "transmit" information?

The RF meter typically transmits 4 times per day. Each of those transmissions lasts an average of 5 seconds.

How secure is the meter data?

Owen considers member information security a top priority. The data transmitted through the AMI system to and from the meter is encrypted using a special proprietary technique. We continue to monitor and test for security threats. None of your account information is included in the AMI equipment or meter transmissions.

Are "Advanced Meters" accurate?

These meters follow multiple accuracy standards testing both by the manufacturers and the utilities. In addition, the Kentucky Public Service Commission requires sample testing each year on a defined amount of the installed meters. Billing exception reports and validation routines on the readings are also performed daily to ensure accuracy.

How does the RF AMI system work?

To perform an "On Demand" meter read an Owen employee sends a command to AMI equipment in the substation (and throughout our distribution system) via our Wide Area Network (WAN). The AMI equipment generates a message to the meter. The RF meter contains a transmitter which hears the information requested then sends that information back to the AMI equipment. The AMI equipment then sends the information back to the employee via our WAN. This entire process takes an average of 10-20 seconds.

In addition, the RF meters are programmed by default to send meter information back to our Headquarters every 6 hours. This transmission usually lasts approximately 5 seconds.

What are the specific benefits of AMI?

Here are just a few of the benefits made available through AMI technology:

- Improves electric service reliability and power quality – fewer outages, blinks and surges.
- Allows more respect for member privacy and property access – With this new system, the only time Owen will need to physically be at your meter is if there is an electric service problem or when we perform inspections of your electric service and our facilities.
- Improves outage notification and management process by more quickly pinpointing the exact location of outages, meaning a faster response time.
- Provides additional metering data to better assist members with billing and service questions.
- Gives capability to provide members with valuable usage information such as consumption patterns, outage and blink count history and voltage information.
- Reduces losses by identifying power theft.
- Gain efficiencies by eliminating the labor and transportation costs of in-person meter reading.
- Ensures better overall safety for Owen employees.
- Promotes energy efficiency by enabling innovative pricing, appliance control and real-time customer feedback.

Will cooperative employees need to come to read the meter manually again once the new meter is in place?

Owen employees will no longer regularly need to spend valuable time traveling to every meter for a monthly read. All meter reads will be digitally transmitted back to the co-op headquarters. On occasion, employees may need to access your property to read the meter if the communication back to our equipment is not sufficient.

Once co-op employees no longer need to read the meter, can obstacles be constructed that may make the meter inaccessible?

No. Reasonable access to equipment still must be maintained. This allows for Cooperative personnel to either read or maintain the meter if necessary at reasonable times. Routine inspections of all meters and services will continue in order to look for safety hazards, theft or other problems.

Will the new meter notify the co-op when the power goes out?

The AMI system will enhance the Cooperative's ability to pinpoint outage locations and verify service restoration. The RF meters will attempt to send a message in to our Headquarters letting us know the power is out. However, it is best to follow up and notify Owen of your outage.

Can you monitor the activity within my home with my meter?

No, Owen's meter has no surveillance capability. The meter simply measures the same total electric energy usage as the previous electro-mechanical meter did. Individual devices within the home cannot be monitored with the meter.

Do the Meters contain Lithium Batteries?

No, the RF meters used by Owen do not contain lithium batteries. The meters use a super capacitor for reserve power, which allows the meter to send an outage message to our Headquarters when you lose power. A battery stores electrical energy through a chemical reaction, providing a sustained power source. However, a capacitor stores energy in an electric field for rapid burst of power but with smaller capacity and shorter duration comparted to a battery. A battery is like a fuel tank, while a capacitor is like a spring, quickly releasing stored energy when needed.

Are there any potential health impacts from a meter that can receive and send data?

The Federal Communications Commission (FCC) has adopted and used recognized safety guidelines for evaluating RF environmental exposure since 1985. Federal health and safety agencies such as the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Safety and Health (NIOSH), and the Occupational Safety and Health Administration (OSHA) have also been actively involved in monitoring and investigating issues for RF exposure. In 1996, the FCC adopted the National Council on Radiation Protection (NCRP's) recommended Maximum Permissible Exposure limits for RF exposure. The FCC also adopted the specific absorption rate (SAR) limits for devices operating within close proximity to the body as specified within the American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE) guidelines.

There has been considerable research* conducted on the health impacts of RF exposure levels from advanced (or 'smart') meters. This research has demonstrated that there is no health threat from RF exposure levels below those designated by the FCC.

***California Council on Science and Technology:** "Wireless smart meters, when installed and maintained properly, result in much smaller radio frequency (RF) exposure than many existing common household electronic devices"

"The current FCC standard provides an adequate factor of safety against known thermally induced health impacts of existing common household electronic devices and smart meters"

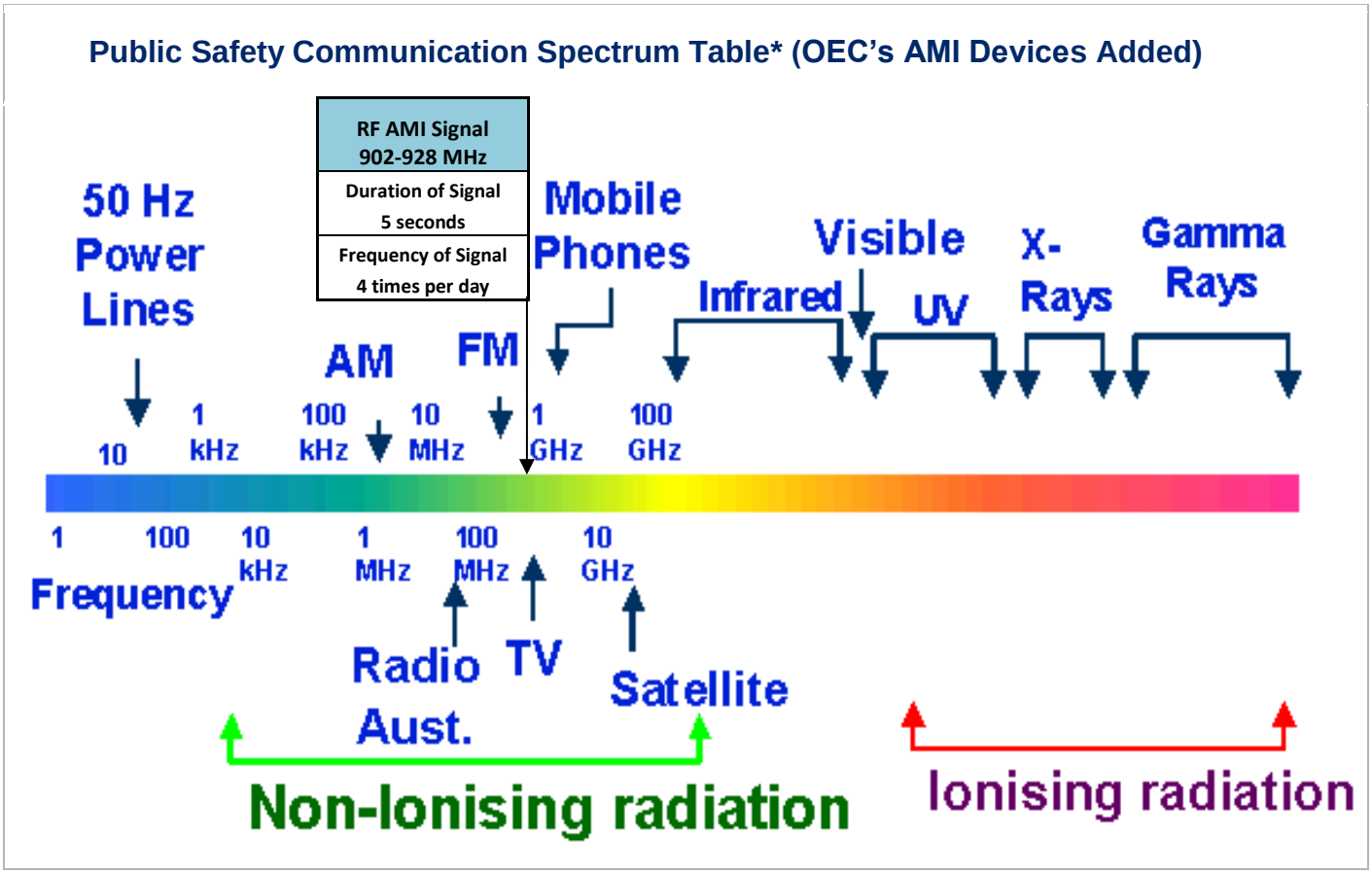
***Maine Center for Disease Control:** concluded there is "no consistent or convincing evidence to support a concern for health effects related to the use of radio frequency in the range frequencies and power used by smart meters"

Additionally, Owen's AMI/Advanced Meter system has some unique characteristics that further mitigate health concerns:

A common misconception about smart meters is that they are always "on" or transmitting 100% of the time. This is far from the case. In fact, Owen's RF Meter typically transmits 4 times per day for approximately 5 seconds per transmission.

In summary, **Owen's meter system meets and exceeds all Federal Communications Commission (FCC) regulations regarding acceptable ranges of RF exposure limits.**

Additionally, many commonly used household devices operate at higher frequency levels. Below is a chart comparing the AMI system frequency ranges to other devices:



*Source: ACD Telecom, LLC & Public Safety Communications

If you have additional questions, feel free to contact Owen Electric at 1-800-372-7612.