Water Meter Upgrade Project

AMI Radio Frequency Frequently Asked Questions

Q: Are there any health hazards associated with the new technology?

A: No. The equipment operates at a low-power radio frequency, comparable to a cordless telephone. All equipment operates in compliance with state and federal communication standards. Water meters are typically installed away from the house so potential exposure is very limited; the communication device only turns on for a fraction of a second per day (totaling approximately 2 ½ minutes per year).

Q: Do the AMI communication devices meet Federal Communications Commission (FCC) Radio Frequency (RF) limits?

A: Like all commercially available telecommunication equipment, the AMI communication devices are required to meet Federal Communications Commission (FCC) Radio Frequency (RF) limits. Equipment manufacturers have vigorously tested and reviewed independent lab results demonstrating that the communication devices meet or exceed FCC limits. Common household items like cell phones, microwave ovens, baby monitors, cordless telephones and Wi-Fi routers emit much more radio frequency energy than AMI meters.

Q: What is the frequency range for the radio communication devices?

A: The meter communication devices and the network communication system will operate in the 450 to 470 megahertz (MHz) bands. The technology products the City will use for its Advanced Metering Infrastructure project comply with U.S. Federal Communications Commission (FCC) guidelines for human exposure to RF energy (FCC OET bulletin 65).

Q: What are the key factors that contribute to RF Exposure from a communication device?

A: There are three key factors that contribute to RF exposure:

Signal duration: The communication devices connected to the water meters will normally transmit a signal for a fraction of a second per day or for a total of less than two minutes per year.

RF energy: The RF energy emitted by the AMI meter is considerably less than that from common items used every day that emit RF, such as laptops, tablets, cell phones, and baby monitors.

Distance from source: The communication device will be located in the same location as the water meter. When the device is transmitting the exposure level is thousands of times lower than the general population exposure limits set by the FCC:

- At eight inches from the front of the meter, exposure is almost 10,000 times lower than the 450-470 MHz FCC exposure limits;
- At two feet away, exposure drops to 90,000 times below FCC exposure limits.

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Q: How does the radio frequency of the AMI communications device compare to other common household devices?

A: Information on radio emissions from AMI water meters as compared to other common household radio sources was excerpted from the Automated Water Meter Program Radio Frequency Assessment conducted by the San Francisco Public Utilities Commission.

AMI Water Meter (Standing directly over the meter)	Wireless Router (at 3 feet)	Microwave Oven (5 minutes at 3 feet)	Smart Phone (data) (10 minutes at 8 inches)
			
0.00010 microwatts per square centimeter	0.37 microwatts per square centimeter	0.45 microwatts per square centimeter	0.98 microwatts per square centimeter

Q: Where can I learn more about radio frequency?

A: The sites/reports listed below address radio frequency:

- Health Impacts of Radio Frequency Exposure from Smart Meters (California Council on Science and Technology)
- World Health Organization (WHO) Radio Frequency Fact Sheet
- Federal Communications Commission (FCC)
- Automated Water Meter Program Radio Frequency Assessment (San Francisco PUC)
- American Cancer Society (Smart Meters)
- Monterey County Health Department Review of Health Issues Related to Smart Meters

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