



Federal Communications Commission
Washington, D.C. 20554

April 21, 2011

The Honorable Lynn C. Woolsey
U.S. House of Representatives
1050 Northgate Drive, Suite 354
San Rafael, California 94903

Dear Congresswoman Woolsey:

This is in reference to your letter on behalf of the EMF Safety Network ("EMF"). EMF alleges that "Smart Meters" installed by Pacific Gas and Electric (PG&E) violate the FCC equipment authorization, which included conditions regarding RF exposure. As explained below, we have no information before us that would warrant action against PG&E or the equipment at issue.

As general background information, the FCC's exposure limits are derived from recommendations for human exposure to RF fields by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and the National Council on Radiation Protection and Measurements (NCRP), and by the U.S. Environmental Protection Agency (EPA), the Food and Drug Administration (FDA) and other federal health and safety agencies. These recommendations were developed by scientists and engineers with extensive experience and knowledge in the area of RF biological effects and related issues. The exposure limits were developed to ensure that FCC-regulated transmitters do not expose the public or workers to levels of RF energy that are considered by expert organizations to be potentially harmful.

In the case of Smart Meters, the FCC has no data or reports to suggest that exposure is occurring at levels of RF energy that exceed our RF exposure guidelines. In contrast, the California Council on Science and Technology recently released a report¹ that found that "[s]cientific studies have not identified or confirmed negative health effects from potential non-thermal impacts of RF emissions such as those produced by existing common household electronic devices and smart meters." With no indications that the Smart Meters in question might not comply with FCC exposure limits we have no reason or authority to order them removed or their operation discontinued.

RF measurements reported by others indicate that Smart Meters produce exposures of no more than 65% of the FCC limit at the face of the meter when programmed to transmit continuously. The devices normally transmit for less than one second a few times each day and consumers are normally tens of feet or more from the meter face, so the actual exposures are typically thousands of times less than this "worst case" measurement condition. The actual separation and operating conditions under which various Smart Meter devices can maintain compliance are reflected in the test reports for each device.

¹ "Health Impacts of Radio Frequency from Smart Meters," January 11, 2011. Available at: <http://www.ccst.us/news/2011/20110111smart.php>

EMF Safety Network asserts that PG&E has violated four conditions of its equipment authorization in particular. They are: (1) professional installation, (2) a separation distance of at least 20 cm from all persons, (3) no collocation or operation in conjunction with other transmitters, and (4) end-users must be provided with antenna installation and transmitter operating conditions for satisfying RF exposure compliance.

The grants of equipment authorization routinely list the four conditions cited by EMF for the broad class of transmitters that include most Smart Meters. As a practical matter, as explained below, adherence to those conditions is not necessarily required for Smart Meters to achieve compliance with our RF exposure guidelines. Smart Meters are generally installed professionally by the utility company and they own the equipment. Accordingly, the utility is responsible for ensuring compliance with any installation conditions listed on the grant of equipment authorization.

The 20-centimeter (7 $\frac{1}{2}$ -inch) separation distance that is specified on the grant of equipment authorization is a conservative measure and the test reports generally demonstrate that the devices in question would comply at lesser distances. Indeed, the radiating structures (antennas) associated with the devices (from which the 20-centimeter distance is to be measured) lie inside the electric meter enclosure, so a *de facto* minimum distance from that structure is always maintained. Because of this minimum separation and because of the low duty cycle associated with these smart meters, we have no information before us that would suggest that the devices would not be in compliance at lesser distances. Moreover, recent measurement data from EPRI² indicate that Smart Meter devices do not exceed our guidelines even when a person touches the meter case.

Similarly, the requirement that the device not be "collocated" with other transmitters is a reference to antennae in very close proximity to each other – a proximity that is not physically possible given the separation provided by individual meters' enclosures. Given the brevity and infrequency of transmissions described above, there is no reason to suspect that a device is likely to cause exposure in excess of our guidelines even when collocated with similar devices. The suggestion that "manufacturers have tested [each of the two] antennas [in the Silver Spring Networks device] in isolation and individually, and not in combination" is incorrect, inasmuch as the two internal transmitters are approved as "composite" devices, and we confirm that they have been evaluated with the two transmitting antennas operating at the same time. We have no information before us that would suggest that the device would not be in compliance when collocated with numerous similar devices.

With regard to the provision of information to end users and installers, this condition is typically met by the manufacturer placing appropriate cautionary statements in the installation manual. The manuals are often not available to the public, since the "end user" in this case is the utility, but they are reviewed by FCC staff to assure compliance with this condition. We have

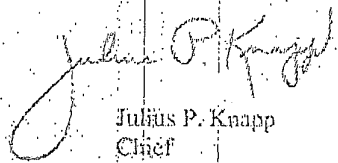
² Electric Power Research Institute, "An Investigation of Radiofrequency Fields Associated with the Itron Smart Meter," December 2010.
http://www.epri.com/portal/server.pt?space=CommunityBurs&cached=true&parentname=OhM&parentid=2&control=SetCommunity&CommunityID=40&RaiseDocID=0000000001021126&RaiseDocType=Abstract_id

double-checked installation manuals for the devices mentioned in the EMF letter, and all have appropriate statements therein.

Finally, with regard to the request for copies of grants of equipment authorization, that information, typically including copies of laboratory test reports supporting the grant, is available from our website at: <http://www.fcc.gov/oet/ea/fccid/>

I hope that this information will be helpful.

Sincerely,



Julius P. Knapp
Chief
Office of Engineering and Technology