

## **Maui Smart Meter Testing Report Seriously Flawed**

The brief (by industry standards) and misleading Smart Meter RF Testing Report on Smart Meters on Maui contains at least eight flaws.

In essence the report:

- 1) Contains errors
- 2) Omitted readings from inside the residences
- 3) Utilizes an inadequate testing protocol
- 4) Makes unsubstantiated health claims
- 5) Employs an inappropriate testing device
- 6) Is based on irrelevant guidelines
- 7) Was conducted by an industry-sponsored company
- 8) Includes industry propaganda

In accordance with the BioInitiative Report 2012 and other biomedical research literature pulsed, chronic RF exposure to levels greater than 3 to 6 microwatts/m<sup>2</sup> can cause adverse health effects. Nearly all readings recorded for the Maui testing survey results are well in excess of these values (assuming that the actual numerical values for RF readings were in units of microwatts/m<sup>2</sup>, which is muddled in the report). Thus, although the survey design is totally inadequate and we cannot even be certain what units of measurements were used, the report very likely demonstrates that adverse health effects can be expected based on smart meter installations.

### **1) Errors in the Report**

Page 2: States that Table 1 values will be listed in units of milliwatts per square centimeter but Table 1 on pages 3 and 4 is labeled in microwatts per square meter. The report should be immediately rejected on this point alone because we cannot adequately interpret the results of the testing.

Page 2: Reference is made that values in Table 1 include average and maximum readings, yet no such designation is included in Table 1 and the values appear to be "average" values based upon information contained in data sheets presented later in the document.

### **2) No Readings Taken Inside the Test Homes**

Page 2 (and rest of report): Only five (5) meters were tested and all were tested outside the residences, none inside, a shocking omission. We therefore have no idea what the RF levels might be inside the homes by transmission through walls or conduction through wiring and re-radiation from conductive objects. Since RF penetrates most materials (except metal) RF transmission inside the homes is expected and obviously should have been measured.

Page 6: Figure 1 confirms that no surveys were taken inside the homes where people live and spend hours sleeping; this is unacceptable.

### **3) Inadequate Testing Protocol**

Page 4 states: "Measured signals in this survey do not create a hazard to the public." Such a blanket claim is ludicrous as there are many types of hazards. The survey design itself was inadequate to make any determination on a variety of hazards.

Page 5: The documented survey does not accomplish the stated objective "to assure that residents of the five smart metered homes, MECo personnel working on the utility pole links, and other individuals who can be near the smart meters, are not potentially overexposed to electromagnetic radiation generated and transmitted by the smart meter or access point transmitter." Without ever testing RF levels inside the homes where residents live the report cannot legitimately offer such assurance.

### **4) Unsubstantiated Health Claims**

Page 10: There is no basis for the statement: "Based on the foregoing, it is determined that the signal values measured do not create a hazard to the personnel working on the smart meter or to the general public who happen to pass the meter."

The fact that a utility consultant would extend far beyond their designated area of expertise and proclaim: "The signal values measured do not create a hazard to the public" is egregious. A utility consultant's role is to confirm compliance with the (outdated) FCC guidelines, not comment on potential public health impacts of non-ionizing RF, a highly contested issue even among those qualified to comment.

Page 5: The stated assurance "that residents of the five smart metered homes... are not potentially overexposed to electromagnetic radiation" is completely unsubstantiated. The report refers to the safety of utility workers and if a person happens "to pass the meter" but with no measurements taken inside the homes no claim can be made about the residents who live inside the home.

### **5) Inappropriate Testing Device**

Page 5 states: "The test instrument has a signal measurement range from 1 uW/m<sup>2</sup> to 2000 uW/m<sup>2</sup> to capture the expected signal levels" however, technical Specifications of the Gigahertz Solutions HF-35C state: "Sensitivity... from a minimum display resolution of 0.1μW/m<sup>2</sup> to a maximum of 1999 μW/m<sup>2</sup>." Many readings at the meter and at 5 feet distance were recorded at values in excess of 1950 microwatts/m<sup>2</sup> and 2 values at 1999 microwatts/m<sup>2</sup>.

Just these data alone suggest that the meter chosen for the survey may not have been appropriate to "capture the expected signal levels." In fact, for a 1 watt smart meter one would expect readings taken at the meter and at distance of 5 feet to exceed 2000 microwatts/m<sup>2</sup> for outdoor measurements.

If the above is true it is possible that actual peak readings may have well exceeded 2000 microwatts/m<sup>2</sup> at the meter and a distance of 5 feet.

If an inappropriate instrument was used the entire study would be totally invalid.

## **6) Irrelevant Guidelines**

Page 4 states: "Measured signals in this survey do not create a hazard to the public." This statement is not substantiated with any evidence since it uses an irrelevant Federal Communications Commission (FCC) standard for short-term effects such as shock or burn.

The electromagnetic radiation standards used by the FCC continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today. The FCC allowable levels are dangerously high compared to the levels at which biological effects are found according to the biomedical research literature.

The FCC and IEEE standards have been heavily criticized for years by the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Safety and Health (NIOSH) and other agencies.

FCC guidelines were designed to prevent the overheating of flesh, yet there are significant effects (non-thermal effects documented in *thousands* of peer reviewed research papers) that happen on various levels of human functioning well before flesh overheats. These include cancer, sleep disruption, DNA damage, breaching of the blood-brain barrier, damage to sperm, and neurological effects on memory, learning and behavior.

Further, smart meters produce peak pulses and it's the peak pulses that are a problem; yet these are averaged, according to the FCC guidelines, so they become invisible. It's comparable to a strobe light that can cause blindness going off every 30 seconds but that gets averaged over an hour so it ends up looking like the equivalent of a 40 watt light bulb and proclaimed safe in the report.

## **7) Conducted by an Industry-Sponsored Company**

The testing of Maui's smart meters was conducted by Cascadia PM, whose clients include essentially every North American wireless company and who obviously have a vested interest in furthering the proliferation of wireless technologies, such as smart meters and the cell towers and masts that accompany them. Choosing this company to test and report on smart meters exposes a serious conflict of interest and calls into question the validity of the report.

## **8) Contains Industry Propaganda**

Un-numbered Page Showing: "Typical Radio Frequency Signal Power Density Measurements in Actual Bar Chart Comparison." This is a typical unsubstantiated industry propaganda chart that has no relevance for inclusion in a professional testing document.

This analysis was compiled by [www.KeepYourPower.org](http://www.KeepYourPower.org) with contributions by K.T. Weaver, MS, a health physicist and engineer who was employed in the nuclear division of a leading electric utility for over 25 years, and Debra Greene, PhD, energy health and environment consultant.